

**SIGNAL-IN-SPACE ICD FOR
INCOIS MESSAGES via
NavIC MESSAGING SERVICE**

VERSION 1.0

March 2019

SATELLITE NAVIGATION PROGRAMME

**U.R.RAO SATELLITE CENTRE
INDIAN SPACE RESEARCH ORGANIZATION
BANGALORE**

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Preface

This document provides the Signal and the Data Structure for Messaging service using IRNSS spacecraft. The document addresses the signal modulations, the frequency band, the received power levels, the data structures, their interpretations etc. This document also provides the encoding and decoding schemes for different information and warning messages generated by INCOIS viz. Potential Fishing Zones; High Waves, Cyclones and Tsunami alert messages.



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INTRODUCTION

The Signal-in-space ICD for messaging services provides the information on INCOIS messages broadcast via the NavIC messaging service offered by ISRO using IRNSS spacecraft. The messaging services are provided to users within Indian region using the IRNSS ground segment and the IRNSS spacecraft. This ICD specifically provide the messages broadcasted by INCOIS, and its encoding and decoing mechanism. IRNSS spacecraft broadcasts messages in L5 band frequency.

SCOPE OF THE DOCUMENT

The Signal and the Data Structure for messaging service specifies the interface between the IRNSS spacecraft and the user segment for messaging service. The document provides necessary information for receiver design to decode the messages being transmitted by IRNSS Spacecraft. This document does not address the implementation of applications utilizing the decoded message data. The decoding scheme for the message data has been provided in the annexures for each type of warning / information messages broadcast by INCOIS such as cyclone warning, high wave alert, potential fishing zone and tsunami warning.

1. SIGNAL OVERVIEW

1.1 SPACECRAFT CARRIER FREQUENCY

The messaging service signals are broadcast in L5 band frequency. The carrier frequency and the bandwidth of transmission for the messaging service are shown in Table 1.

Table 1: Carrier Frequency and bandwidth

Signal	Carrier Frequency	Bandwidth
L5	1176.45 MHz	24 MHz (1164.45 -1188.45 MHz)

1.2 MODULATION SCHEME

The signal is BPSK (1) modulated on L5 band. The navigation data at data rate of 50 symbols per second (1/2 rate FEC encoded) is modulo 2 added to PRN code chipped at 1.023 Mcps. The CDMA modulated code, modulates the L5 carrier at 1176.45 MHz.

1.3 RECEIVED POWER LEVELS ON GROUND

1.3.1 Nominal Levels

Table 2 indicates the assured power levels of the signals received by a user receiver on ground. The received power on ground is measured at the output of an ideally matched RHCP 0 dBi user receiving antenna when the spacecraft elevation angle is higher than 5°.

Table 2: Nominal received power of signals

Signal	Signal Component	Nominal Received Power (dBW)
L5	BPSK(1)	-159.0

1.4 POLARIZATION CHARACTERISTICS

Signals are Right Hand Circularly Polarized. The antenna axial ratio does not exceed 2.0 dB.

2. USER SEGMENT

The User segment mainly consists of:

- Receiver capable of receiving signal at L5 band frequency.

Figure 1 specifies the radio frequency interface between space and user segments. The Spacecraft provides signals in L5 band.

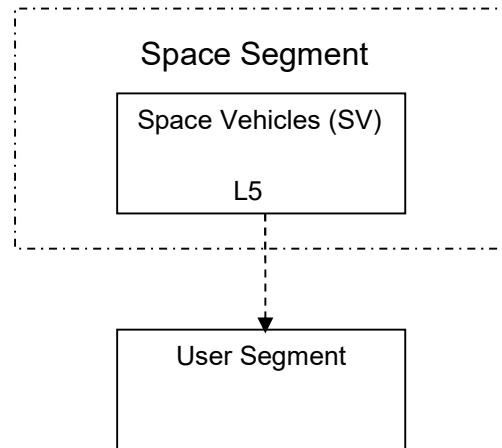


Figure 1: Space Segment Interface with User Segment

3. PRN CODES

The IRNSS spacecrafts utilize Gold codes for the signal. The codes are generated using Linear Feedback Shift Registers. The code lengths for the signal is listed in Table 3.

Table 3: Code lengths of signals

Code Length (ms)	No. of Chips
1 ms	1023

3.1 PRN CODES

The initial conditions for generation of PRN Codes for IRNSS satellite is as given in Table 4. The length of each code is 1023 chips. The code is chipped at 1.023 Mcps.

3.1.1 Code Generation

For code generation, the two polynomials G1 and G2 are as defined below:

G1: $X^{10} + X^3 + 1$ and G2: $X^{10} + X^9 + X^8 + X^6 + X^3 + X^2 + 1$

The G1 and G2 generators are realized by using 10 bits Maximum Length Feedback Shift Registers (MLFSR). The G1 register is initialized with all bits as '1'. The initial state of G2 register is provided in Table 4. G1 and G2 are XOR'ed for the generation of the final 1023 chip long PRN sequence. The time period of the PRN sequence is 1 millisecond.

Table 4: Code Phase assignment for IRNSS signals

PRN ID	Initial Condition for G2 Register	First 10 Chips in Octal2
1	1110100111	0130
2	0000100110	1731

3	1000110100	0713
4	0101110010	1215
5	1110110000	0117
6	0001101011	1624
7	0000010100	1753
8	0100110000	1317
9	0010011000	1547

Note: Currently PRN ID-1 is being used for messaging service.

The Figure below shows the generation of code.

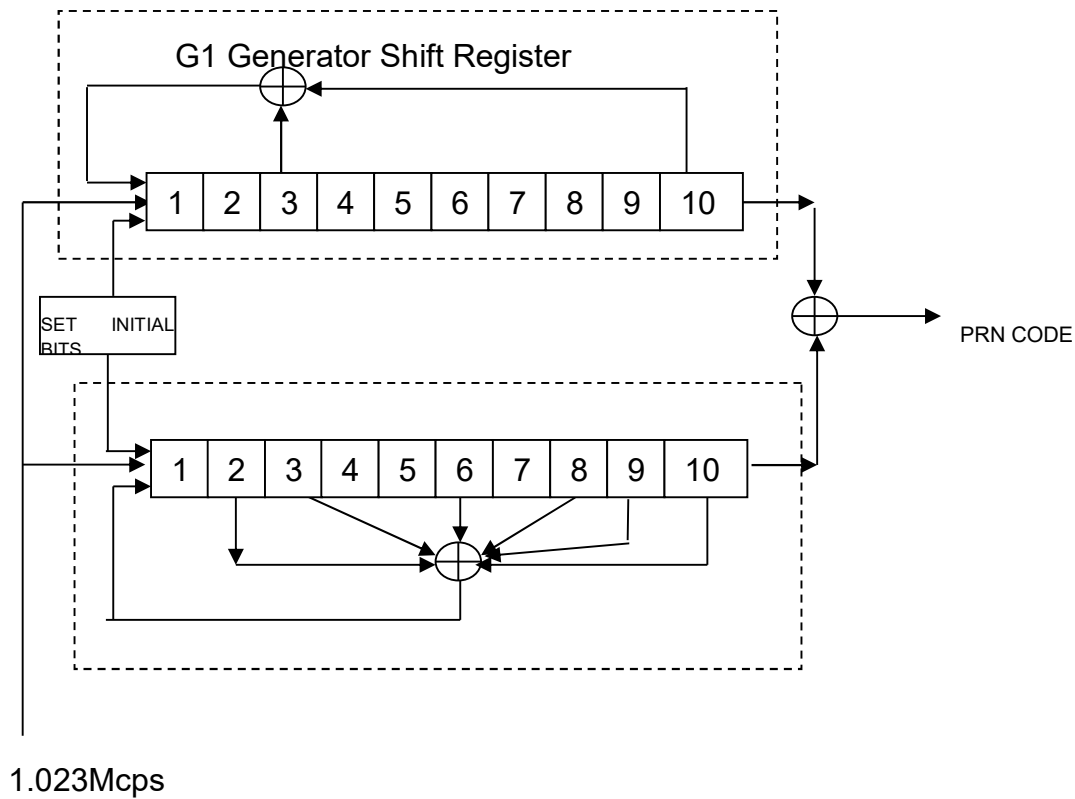


Figure 2: PRN Code Generator

4. DATA STRUCTURE

The Signal-In-Space transmits messages in L5 band. Data is transmitted in sub-frames of 600 symbols transmitted at 50 symbols per second. Sub-frame has 16 bit Sync word followed by 584 bits of interleaved data. The sub-frame format is shown in Figure 3.

600 symbols	
Sync code	Subframe
16 bits	584 symbols

Figure 3 : Subframe Structure

The 584 symbols of interleaved data are obtained from FEC encoding 292 sub-frame bits.

4.1 BIT AND BYTE ORDERING CRITERIA

The following bit and byte ordering criteria will be used while formatting the data:

- The most significant bit/byte is numbered as bit/byte 1
- The most significant bit/byte is transmitted first

4.2 FEC ENCODING

The sub-frame of 292 bits is rate 1/2 convolution encoded and clocked at 50 symbols per second. Figure 4 depicts the convolution coding scheme

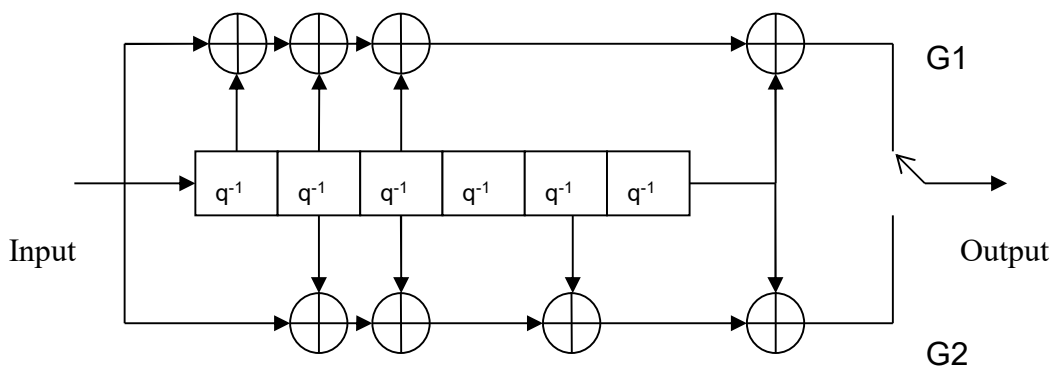


Figure 4: FEC Encoding

The convolution encoding for the data is performed as per the parameters given in Table 5.

Table 5: FEC encoding parameters

Parameter	Value
Coding Rate	$\frac{1}{2}$
Coding Scheme	Convolution
Constraint Length	7
Generator Polynomial	G1 = (171) _o G2 = (133) _o
Encoding Sequence	G1 then G2

Each sub-frame of 292 bits, after encoding, results in 584 symbols.

4.3 INTERLEAVING

The 584 symbols of FEC encoded data is interleaved using a block interleaver with n columns and k rows. Data is written in columns and then, read in rows. Table 6 indicates the interleaving mechanism.

Table 6: Interleaving parameters

Parameter	Arrangement
Block Interleaver size	584
Block Interleaver Dimensions (n columns x k rows)	73 x 8

4.4 SYNC WORD

The Synchronization pattern for each of the sub-frame is 16 bit word. The Synchronization word is not encoded. The synchronization pattern allows the receiver to achieve synchronization to the sub-frame. The Sync pattern is EB90 Hex.

4.5 TAIL BITS

The tail bit field consists of 6 zero value bits enabling completion of the FEC decoding of each sub-frame in the user receiver.

4.6 CYCLIC REDUNDANCY CHECK (CRC)

The data signal contains parity coding according to the following conventions. CRC – 24Q polynomial shall be used for each Sub frame, applied on the first 262 bits of the sub-frame. Twenty-four bits of CRC parity will provide protection against burst as well as random errors with a probability of undetected error $\leq 2^{-24} = 5.96 \times 10^{-8}$ for all channel bit error probabilities ≤ 0.5

The generator polynomial is given as

$$g(X) = \sum_{i=0}^{24} g_i X^i$$

$$g_i = \begin{cases} 1 & \text{for } i \text{ equal to } 0, 1, 3, 4, 5, 6, 7, 10, 11, 14, 17, 18, 23, 24 \\ 0 & \text{otherwise} \end{cases}$$

4.7 SUB FRAME STRUCTURE

Each Sub-frame is 292 bits long(without FEC encoding and Sync Word). The start of each sub-frame is with TLM word of 8 bits. Each sub-frame ends with 24 bit CRC followed by 6 tail bits. The sub frame structure for satellite ID 1 is as given below:

1	9	26	27	28	29	30	31	37	257	263	287
---	---	----	----	----	----	----	----	----	-----	-----	-----

TLM	TOWC	RESERVED	MESSAGING ENABLE	MESSAGE ID	DATA	RESERVED	CRC	Tail
8 BITS	17 BITS	4 BITS	1 BIT	6 BITS	220 BITS	6 BITS	24 BITS	6 BITS

Figure 5: Structure of Sub-frame

4.7.1 TLM

The 8 bits of TLM word are reserved for future.

4.7.2 Time of Week Count (TOWC)

The time of week counter (TOWC) indicates the number of 12 second counts at which the next subframe will begin. It is represented in 17 bits. The Time of Week Count (TOWC) value ranges from 1 to 50400 to cover one entire week. The Time Of Week (TOW) in seconds is obtained by multiplying TOWC with 12. The TOWC will have a value of 1 at week change over (Changeover from Saturday to Sunday). To derive current time the receiver shall subtract 12 from TOW. As the TOWC is always initialized at the beginning of week, the continuous time keeping if required, is to be done at the user receiver end. Refer Annexure 1 for additional information on computation of IST/UTC from TOWC.

If the user receiver needs absolute date-time, it is expected by user / application to provide the absolute date-time at start up giving details on week number; or year, month and day as part of user data.

4.7.3 Reserved

The bits 26 to 29 & 257 to 262 are reserved.

4.7.4 Messaging Enable Flag

This flag bit at bit no. 30 will indicate messaging service is active (If value is '1'). The receiver needs to check the status of this bit to proceed for using the decoded data for messaging application.

4.7.5 Message ID

Each message in the frame has a 6-bit identifier that uniquely identifies the Message ID in the frame. Each messaging service broadcaster will be allocated a unique Message ID. The allocated message ID is to be used for decoding the relevant messages.

5. SUBFRAME FEATURES

5.1 Idle Pattern

When there is no valid data available on board for a given message ID, Idle Pattern containing alternating zeroes and ones is transmitted in the data part of the navigation subframes of IRNSS. Idle pattern shall begin from bit 37, the first bit being a zero. When idle

pattern is transmitted the CRC will be corrupted for the corresponding sub-frame and the sub-frame shall be ignored.

5.2 Null Message

A message with message ID 0 is defined as Null message and shall be ignored by user.

6. MESSAGES

A message segment in a sub-frame is of length 220 bits. A message ID may contain multiple segments of messages (each 220 bits long). The decoding scheme for a given message ID shall be provided by the respective message broadcaster. 64 different message IDs are available in the messaging service.

7. MESSAGING USER RECEIVER

The user receiver needs to acquire, track, and demodulate signals as per the ICD. The receiver shall provide the 220 bit message along with TOWC, Message ID as output to the user. The Message ID shall be used to decode the message by the receiver. The receiver shall have the provision to accept Message ID as inputs in order to identify and provide only the corresponding message for a given user.

8. INCOIS MESSAGES

INCOIS is providing various type of warning and information messages service to the user in India. The warning messages include:

1. Tsunami
2. Cyclone Warning
3. High wave

The warning messages are given the **Message ID 21**.

The different types of warning messages can be identified using unique service ID broadcast in the sub frame as part of the message.

Table 7: Service ID

Service	Service ID
High wave	0111
Cyclone Warning	1111
Tsunami	0011

In addition to warning messages INCOIS broadcasts Potential Fishing Zone (PFZ) information to the fishermen in India. The PFZ message has a **Message ID 20**.

ANNEXURE 1- Computation of Indian Standard Time (IST) using TOWC

The receiver shall compute time from TOWC value broadcast in the sub-frame. The time of week counter (TOWC) indicates the number of 12 second counts at which the next sub-frame will begin. The Time of Week Count (TOWC) value ranges from 1 to 50400 to cover entire week. Steps to compute time:

1. Read TOWC value from sub-frame data.
2. Multiply TOWC with 12 to obtain the Time Of Week (TOW) value in seconds.
(The TOWC will have a value of 1 at 00:00:00 hrs, UTC on Sunday)
3. Subtract 12 seconds to compute the time of broadcast of the current sub-frame.
4. Compute the day, hours, minutes and seconds that has elapsed from Sunday, using the TOW value in seconds. This shall provide the time in UTC.
5. Add 5hrs 30 mins to the time computed in Step 4 to obtain the time in IST.
6. The user shall feed the year, month and date information as part of user data. As the TOWC is always initialized at the beginning of week, the continuous time keeping is required to be done at the user receiver end.

Example

TOWC value	= 24843
Time of week in Seconds	= 24843 x 12 seconds = 298116 seconds
Time of week at the start of current sub-frame	= 298116-12 seconds = 298104 seconds
<i>Hence, No. of seconds elapsed since 00:00:00 hrs (UTC) on Sunday are <u>298104</u> seconds</i>	
No. of days elapsed from start of Sunday	= 298104 / 86400 = 3.4502778 days (Wednesday)
<u>Time of day</u>	
Hours	= 0.4502778 x 24 = 10.806667 hours
Minutes	= 0.806667 x 60 = 48.4 minutes
Seconds	= 0.4 x 60 = 24 seconds
Time in UTC	= 10:48:24 hrs
Time in IST	= 10:48:24 + 05:30 hrs = 16:18:24 hrs

Day & Time in IST : Wednesday, 16:18:24 hrs

ANNEXURE 2- INCOIS High Wave alert message

The High wave alert early warning message contains information like region, Location, wave height, wave period and Duration.

The IRNSS message structure for transmitting the alert messages is given below:

Table 1: Sub frame data structure

1	9	26	27	28	30	31	37	257	263	287
TLM	TOWC	RESERVED				MESSAGE ID	DATA	Satellite ID	CRC	Tail
8 BITS	17 BITS	5 BITS				6 BITS	220 BITS	6 BITS	24 BITS	6 BITS

The message format of the 220 bits of data of High Wave Alert is given below.

Odd segment ID format

← 220 bits →											
Service ID	Seg.Count	Seg.ID	HWA1 Clear	HWA2 Clear	HWA3 Clear	Spare	Continuity Bit	Port name	HWA message 1	HWA message 2	HWA message 3
4 bits	4 bits	4 bits	1 bit	1 bit	1 bit	1 bit	1 bits	8 bits	78 bits	78 bits	39 bits

Even segment ID format

← 220 bits →											
Service ID	Seg.Count	Seg.ID	HWA1 Clear	HWA2 Clear	HWA3 Clear	Spare	Continuity Bit	Port name	HWA message 1	HWA message 2	HWA message 3
4 bits	4 bits	4 bits	1 bit	1 bit	1 bit	1 bit	1 bits	8 bits	39 bits	78 bits	78 bits

Figure 1: Message Structure (220 Bits)

HWA Message (78 Bits) :

Region	Between (Site 1)	Between (Site 1)	Wave Ht (min)	Wave Ht (max)	Current Speed (min)	Current Speed (max)	Date	Time	Validity	Msg Text
4bits	8bits	8bits	8bits	8bits	6bits	6bits	16bits	11bits	1bit	2bits

Figure 2: HWA Message format (78 Bits)

High wave alert Warning message contains information like Region (area between two locations), Wave Height, Current speed, Date, Time, Validity and Message.

Segment Count represents no of segments in the complete message and segment ID represents the number of the current segment. These are used if the message(s) length exceeds 220 bits. Segment ID also help to identify odd and even type message. In odd segment ID message last HWA message will be sent half, and in even segment ID message the other half portion of previous subframe HWA message will come 26 bit onward. Continuity bit will be “1” in case previous subframe (off segment ID) is having half portion of HWA message; otherwise it will be “0”. In case there are only two HWA message the last 39 bits in first subframe should be padded with ‘0’ and continuity bit will be ‘0’.

HWA Clear

Each warning message is associated with respective warning clear message that indicates the corresponding warning has been cleared. The warning clear indicator shall be as follows:

Table 2: High wave alert warning Clear indicator

Message	HWA Clear Bit
Warning Present	0
Warning Cleared	1

Table 3: Message Contents

Item	Details	Bits	Remarks
Region	Indicate a broad area	4 bits	As given in table 9
Sub region	Site-1	8 bits	As given in table 10
	Site-2	8 bits	
Wave Height (Min=0m & Max=20m)	Wave Height minimum value	8 bits	Need to represent in the format xx.x – yy.y with 0.1m resolution
	Wave Height maximum value	8 bits	
Current Speed	Current Speed minimum value	5 bits	Represent in the form x.x m/sec with

(Min=0 m/sec &Max=5 m/sec)	Current Speed maximum value	5 bits	0.1 m/sec resolution	
Date	Ddmmyy	16 bits	Date (DD) (1-31)	5 Bits (MSB)
			Month (MM) (1-12)	4 Bits
			Year (YY) (1-99)	7 Bits (LSB)
Time	Hhmm	11 bits	Hour (HH) (0-24)	5 Bits (MSB)
			Minutes (MM) (0-60)	6 Bits (LSB)
Validity	Upto 48 hrs	1 bit	0 = 24hrs; 1 = 48hrs	
Msg Text	Four types of messages	2bits	Table-7	
	Total	78 bits		

Based on the table-3 it is clear that one location information can be transmitted using 78 Bits. So in one message segment up to two locations can be served.

INCOIS will have the flexibility to transmit the High wave alert information in different segments (up to 10 segments of each 220bits) of a given message ID. The total message length can vary from 220bits (1segment) to 2200bits (10 segments). The transmission time will vary 12 sec to 120 sec (2 minutes) respectively.

Decoding Scheme:

- Extract the sub frame data bits.
- Decode the 4 bit service ID: 0111 represents High Wave
- **Segment count:** 4 bit segment count represent the total number of segment in a message.
- **Segment ID:** The 4 bit segment ID represents the Id of a segment being transmitted in a given message.
- **Region:** Extract the 4 bit value and identify the region as given in Table-9.
- **Sub region:** Extract 8 bit (Site-1) and 8 bit (Site-2) value and identify the location as given in Table -10.
- **Wave Height Min & Max:** Convert 8 bits to decimal to obtain a 3 digit value. Place decimal point after second digit from left. (eg xx.x)
- **Current speed Min & Max:** Convert 5-bits binary to decimal value. Place decimal point after first digit from left. (eg x.x)
- **Date (DDMMYY):** convert binary to decimal

Table 4: Date Format

DD/MM/YY	Bits
Dates (DD) (1-31)	5 bits (MSB)
Months (MM) (1-12)	4 bits
Year (YY) (1- 99)	7 Bits (LSB)

- **Time: HHMM:** convert binary to decimal

Table 5: Time Format

Time	Bits
Hour (HH) (0-24)	5 (MSB)
Minutes (MM) (0-60)	6 (LSB)

- **Validity:** Convert 1 bit binary message to decimal to obtain the validity period of High wave alert.

Table 6: Validity Format

Valid Hours	Code
24	0
48	1

- **Alert message:**

Table 7: Alert Message

Message	Code
Fishermen not to venture into open seas	00
Fishermen at Sea not to come to the ports in the coast of _____ {2 regions at max will be given}	01
Fishermen to be cautious while going out in the sea	10
Fishermen are advised to return to coast	11

In case Alert message code is ‘01’ Port name will be transmitted in 8 bits as given in **Table 8**.

Sample output message

“Kerala” Coast between “Vizhinjam” and “Kasargod”

Wave Height: 2.7-3.2 m

Current Speed: 2.5 - 2.8 m/sec

Duration: 21-12-2017,17:30 Hrs to 23-12-2017,23:30Hrs

“Fishermen to be cautious while going out in the seas”

Table 8: Port Name

Port Region	Code
North Gujarat	0000
South Gujarat	0001
North Maharashtra	0010
South Maharashtra	0011
Goa	0100
Karnataka	0101
North Kerala	0110
South Kerala	0111
North Tamil Nadu	1000
South Tamil Nadu	1001
North Andhra Pradesh	1010
South Andhra Pradesh	1011
Odisha	1100
West Bengal	1101
Andaman & Nicobar	1110
Lakshadweep	1111

- **Region:**

Table 9: Region Name

1	GUJARAT
2	MAHARASHTRA
3	GOA
4	KARNATAKA
5	KERALA
6	SOUTH TAMILNADU
7	NORTH TAMILNADU
8	ANDHRAPRADESH
10	ODISHA
11	WEST BENGAL
12	ANDAMAN
13	NICOBAR
14	LAKSHADWEEP

- **Sub Region:**

Table 10: Sub - Region

Region Name	Code for APP	Landing stations
GUJARAT	1	Lakhapat
GUJARAT	2	Kanoj
GUJARAT	3	Narayan Sarovar (Koteswar)
GUJARAT	4	Guvar
GUJARAT	5	Lakhi Bandar
GUJARAT	6	Bhuta
GUJARAT	7	Moti Akri
GUJARAT	8	Mitha Port
GUJARAT	9	Jakhau
GUJARAT	10	Kadoli
GUJARAT	11	Khuada
GUJARAT	12	Chhachhi
GUJARAT	13	Bambhdai
GUJARAT	14	Bhada
GUJARAT	15	Nana Layja
GUJARAT	16	Kanthada
GUJARAT	17	Mandvi
GUJARAT	18	Rawal Pir Dargah
GUJARAT	19	Modhva
GUJARAT	20	Tragdi
GUJARAT	21	Tunda

GUJARAT	22	Navinal
GUJARAT	23	Zarpara
GUJARAT	24	Mundra
GUJARAT	25	Shekhadiya
GUJARAT	26	Luni
GUJARAT	27	Bhadreshwar
GUJARAT	28	Kukadsar
GUJARAT	29	Sanghad
GUJARAT	30	Tuna Port
GUJARAT	31	Tekra
GUJARAT	32	Kandla
GUJARAT	33	Navlakhi
GUJARAT	34	Dabar Cr
GUJARAT	35	Jodiya
GUJARAT	36	Balachadi
GUJARAT	37	Sachana
GUJARAT	38	Kalyan Lt
GUJARAT	39	Piroton Island
GUJARAT	40	Sikka
GUJARAT	41	Vadinar
GUJARAT	42	Bharana
GUJARAT	43	Nana Ambla
GUJARAT	44	Salaya
GUJARAT	45	Mota Asota
GUJARAT	46	Poshitra

GUJARAT	47	Okha
GUJARAT	48	Mitha Port
GUJARAT	49	Kachchigadh
GUJARAT	50	Rupen
GUJARAT	51	Dwarka
GUJARAT	52	Kuranga
GUJARAT	53	Bhogat
GUJARAT	54	Navadra
GUJARAT	55	Harshad Miyani
GUJARAT	56	Miyani
GUJARAT	57	Tukda Miyani
GUJARAT	58	Raatadi
GUJARAT	59	Kuchhadi
GUJARAT	60	Porbandar
GUJARAT	61	Odadar
GUJARAT	62	Navibandar
GUJARAT	63	Gorsar
GUJARAT	64	Madhavpur
GUJARAT	65	Shil
GUJARAT	66	Mangrol
GUJARAT	67	Mangrol Bara
GUJARAT	68	Chorwad
GUJARAT	69	Adri
GUJARAT	70	Veraval
GUJARAT	71	Hirakot

GUJARAT	72	Kadwar
GUJARAT	73	Sutrapada
GUJARAT	74	Vadodra
GUJARAT	75	Dhamlej
GUJARAT	76	Mul Dwarka
GUJARAT	77	Madhavad Lighthouse
GUJARAT	78	Kotda
GUJARAT	79	Diu Island
GUJARAT	80	Nava Bandar
GUJARAT	81	Simar
GUJARAT	82	Saiyad Rajpara
GUJARAT	83	Rohisha
GUJARAT	84	Jafarabad
GUJARAT	85	Shiyalbet
GUJARAT	86	Pipavav
GUJARAT	87	Patva
GUJARAT	88	Gadhada
GUJARAT	89	Mahuva (Bhavani Bandar)
GUJARAT	90	Mahuva (Light House)
GUJARAT	91	Nikol
GUJARAT	92	Methla
GUJARAT	93	Jhanjhmer
GUJARAT	94	Gopnath
GUJARAT	95	Sartanpar
GUJARAT	96	Alang

GUJARAT	97	Mithi Virdi
GUJARAT	98	Haathab
GUJARAT	99	Piram Bet
GUJARAT	100	Badi
GUJARAT	101	Ghogha
GUJARAT	102	Bhavanagar New Port
GUJARAT	103	Dungariya Bet
GUJARAT	104	Kamatalav
GUJARAT	105	Vadgam
GUJARAT	106	Khambat
GUJARAT	107	Surwada
GUJARAT	108	Sarod
GUJARAT	109	Kavi
GUJARAT	110	Gangeshwar
GUJARAT	111	Zamdi
GUJARAT	112	Nadiyad
GUJARAT	113	Tankari Pt
GUJARAT	114	Asharsha
GUJARAT	115	Denwa
GUJARAT	116	Luvara
GUJARAT	117	Mehgam
GUJARAT	118	Dhanturia
GUJARAT	119	Wansnoli
GUJARAT	120	Bhadbhut
GUJARAT	121	Oil Derrick

GUJARAT	122	Kanthiajal
GUJARAT	123	Kosamba (MangelVad)
GUJARAT	124	Karanj
GUJARAT	125	Mor
GUJARAT	126	Marphalia
GUJARAT	127	Gunav
GUJARAT	128	Bhagal
GUJARAT	129	Hazira
GUJARAT	130	Dumas
GUJARAT	131	Magadalla
GUJARAT	132	Bhimpur
GUJARAT	133	Dipla
GUJARAT	134	Wasi Borsi
GUJARAT	135	Dandi
GUJARAT	136	Onjal Machhivad
GUJARAT	137	Krishnapur
GUJARAT	138	Bhat
GUJARAT	139	Mendhar
GUJARAT	140	Dholai
GUJARAT	141	NaniDanti
GUJARAT	142	Kakwadi
GUJARAT	143	Bhadelj Jagalala
GUJARAT	144	Valsad
GUJARAT	145	Kosamba (Machhivad)
GUJARAT	146	Magod Dungri

GUJARAT	147	Umarsadi
GUJARAT	148	Kolak
GUJARAT	149	Bhimpor
GUJARAT	150	Daman
GUJARAT	151	Kalai
GUJARAT	152	Fansa
GUJARAT	153	Maroli
GUJARAT	154	Tadgam
GUJARAT	155	Kathalwada
GUJARAT	156	Nargol
GUJARAT	157	Umargam
MAHARASHTRA	1	Zai
MAHARASHTRA	2	Bordi
MAHARASHTRA	3	Gholvad
MAHARASHTRA	4	Narpad/DahanuAgar
MAHARASHTRA	5	Dahanu
MAHARASHTRA	6	Khondha Cr
MAHARASHTRA	7	DhaktiDahanu/Gungawada
MAHARASHTRA	8	Varor
MAHARASHTRA	9	Kambode
MAHARASHTRA	10	Ghivali
MAHARASHTRA	11	Tarapur Pt
MAHARASHTRA	12	PokharanDandi/Uchheli
MAHARASHTRA	13	Navapur (Ucheli Cr)
MAHARASHTRA	14	Murbe

MAHARASHTRA	15	Satpati(N)
MAHARASHTRA	16	Satpati(M/S)
MAHARASHTRA	17	Satpati
MAHARASHTRA	18	Shirgaon
MAHARASHTRA	19	Vadarai
MAHARASHTRA	20	Kelwane
MAHARASHTRA	21	Kelwa/KelwaDadar
MAHARASHTRA	22	Mahim Cr
MAHARASHTRA	23	Danda
MAHARASHTRA	24	Edavan/Kore
MAHARASHTRA	25	Datiware
MAHARASHTRA	26	Arnala
MAHARASHTRA	27	Tembhi
MAHARASHTRA	28	Arnalapada
MAHARASHTRA	29	Rangaon
MAHARASHTRA	30	MulgaonDanda
MAHARASHTRA	31	Vasai(Pachubandar)
MAHARASHTRA	32	Khochiwade
MAHARASHTRA	33	Vasai
MAHARASHTRA	34	Dongi Point
MAHARASHTRA	35	Dongri
MAHARASHTRA	36	Uttan
MAHARASHTRA	37	Uttan(Bhatye)
MAHARASHTRA	38	Gorai
MAHARASHTRA	39	Manori

MAHARASHTRA	40	Marve/Malvani
MAHARASHTRA	41	YerangalBhati
MAHARASHTRA	42	Madh
MAHARASHTRA	43	Patwadi
MAHARASHTRA	44	Vesava
MAHARASHTRA	45	Varsova
MAHARASHTRA	46	JuhumoraGaon
MAHARASHTRA	47	JuhuTara
MAHARASHTRA	48	KharDanda
MAHARASHTRA	49	Uarashi Rf
MAHARASHTRA	50	Chimbai
MAHARASHTRA	51	Mahim
MAHARASHTRA	52	Naigaon
MAHARASHTRA	53	Worli
MAHARASHTRA	54	Worli-Lotus
MAHARASHTRA	55	Malabar Port (Mumbai)
MAHARASHTRA	56	CuffPared
MAHARASHTRA	57	Colaba Pt.(Mumbai)
MAHARASHTRA	58	SasoonDock
MAHARASHTRA	59	Kalbadevi
MAHARASHTRA	60	Chinchbunder
MAHARASHTRA	61	NewFerryWharf
MAHARASHTRA	62	Trombay
MAHARASHTRA	63	Mahul
MAHARASHTRA	64	WashiBridge,PWDJetty

MAHARASHTRA	65	Vashi(Haveli)
MAHARASHTRA	66	Belapur
MAHARASHTRA	67	UlwaMoha
MAHARASHTRA	68	Morave-1
MAHARASHTRA	69	Nhawa
MAHARASHTRA	70	Dighode
MAHARASHTRA	71	Mora
MAHARASHTRA	72	HanumanKoliwada
MAHARASHTRA	73	Uran
MAHARASHTRA	74	Bhalpada
MAHARASHTRA	75	Waredi
MAHARASHTRA	76	Dharmtar Dhakka
MAHARASHTRA	77	Revas
MAHARASHTRA	78	Karanja Uran
MAHARASHTRA	79	Sasawane
MAHARASHTRA	80	Avas
MAHARASHTRA	81	Navgaon
MAHARASHTRA	82	Thal
MAHARASHTRA	83	VarsoliChalmala
MAHARASHTRA	84	Alibag
MAHARASHTRA	85	Nagaon
MAHARASHTRA	86	Theronda
MAHARASHTRA	87	Rewdanda
MAHARASHTRA	88	Boghar
MAHARASHTRA	89	Salav

MAHARASHTRA	90	Revadanda
MAHARASHTRA	91	Korlai
MAHARASHTRA	92	Borli-Mandla
MAHARASHTRA	93	Mazgaon
MAHARASHTRA	94	Ekdara
MAHARASHTRA	95	Murud
MAHARASHTRA	96	Rajpuri
MAHARASHTRA	97	Agardanda
MAHARASHTRA	98	Mandad
MAHARASHTRA	99	Pabhare
MAHARASHTRA	100	Kharsai
MAHARASHTRA	101	Kudgaon
MAHARASHTRA	102	Dighi(Savari)
MAHARASHTRA	103	Nanwell Pt
MAHARASHTRA	104	Bhardkhol-Diveagar
MAHARASHTRA	105	Diveagar
MAHARASHTRA	106	Shekhadi(Khalchi)
MAHARASHTRA	107	Srivardhan
MAHARASHTRA	108	Bagmandla
MAHARASHTRA	109	Veshawi-Bankot
MAHARASHTRA	110	Bankot
MAHARASHTRA	111	Velas
MAHARASHTRA	112	Kelshi
MAHARASHTRA	113	Kelsi
MAHARASHTRA	114	AadeUttambar

MAHARASHTRA	115	Anjarle
MAHARASHTRA	116	Paj
MAHARASHTRA	117	HarnePort
MAHARASHTRA	118	Harne
MAHARASHTRA	119	Murud
MAHARASHTRA	120	Burondi
MAHARASHTRA	121	Kolthare
MAHARASHTRA	122	Dabhol
MAHARASHTRA	123	Veldur/Navanagar/Dhopave
MAHARASHTRA	124	Tolkeshwar Pt
MAHARASHTRA	125	Anjanvel
MAHARASHTRA	126	Guhagar
MAHARASHTRA	127	Asgoli
MAHARASHTRA	128	Sakhar-Hedvi
MAHARASHTRA	129	Palshet
MAHARASHTRA	130	Budhal
MAHARASHTRA	131	Kondkarul
MAHARASHTRA	132	Welneshwar
MAHARASHTRA	133	Hedvi
MAHARASHTRA	134	Jaigad
MAHARASHTRA	135	SakharJaigad
MAHARASHTRA	136	Jaigarh Head
MAHARASHTRA	137	Varawade
MAHARASHTRA	138	Kharviwada
MAHARASHTRA	139	MTDC

MAHARASHTRA	140	Kalabadevi
MAHARASHTRA	141	SakhartarKasarveli
MAHARASHTRA	142	JakiMirya
MAHARASHTRA	143	Mirkarwada
MAHARASHTRA	144	Ratnagiri
MAHARASHTRA	145	Rajiwada
MAHARASHTRA	146	Rajiwada-Kerla
MAHARASHTRA	147	Someshvar
MAHARASHTRA	148	Phansop
MAHARASHTRA	149	Golap-Pawas
MAHARASHTRA	150	Purnagad
MAHARASHTRA	151	Purangad
MAHARASHTRA	152	Sakhri-Natye
MAHARASHTRA	153	Mavlanga
MAHARASHTRA	154	Ambere
MAHARASHTRA	155	Bokarwadi
MAHARASHTRA	156	Wada Vetye
MAHARASHTRA	157	Sakharinate
MAHARASHTRA	158	Ambolgad
MAHARASHTRA	159	Ambolgarh
MAHARASHTRA	160	PhansePadawane
MAHARASHTRA	161	Padve
MAHARASHTRA	162	Sakhar-Akshi
MAHARASHTRA	163	Wagapur Pt
MAHARASHTRA	164	Jambhari

MAHARASHTRA	165	Vijayadurg Hr
MAHARASHTRA	166	Vijaydurg
MAHARASHTRA	167	Kalamaiwadi
MAHARASHTRA	168	Wadatar/Malai
MAHARASHTRA	169	Anandwadi(Devgad)
MAHARASHTRA	170	Devgarh
MAHARASHTRA	171	Mithmumbri/Taramumbari
MAHARASHTRA	172	Kunkeshwar
MAHARASHTRA	173	Kunkeshwar/Katvan
MAHARASHTRA	174	Mithbao
MAHARASHTRA	175	Munge
MAHARASHTRA	176	Achra Pt
MAHARASHTRA	177	Achara
MAHARASHTRA	178	Tondavli
MAHARASHTRA	179	Hadi
MAHARASHTRA	180	Sarjekot-MiryaBandh
MAHARASHTRA	181	Talashil
MAHARASHTRA	182	Sarjekot
MAHARASHTRA	183	Dhurivada
MAHARASHTRA	184	Sindhudurg (Malvan)
MAHARASHTRA	185	Wayri
MAHARASHTRA	186	Tarkarli/Kalethar
MAHARASHTRA	187	Deobag
MAHARASHTRA	188	Kochara-Nivati
MAHARASHTRA	189	Khavana

MAHARASHTRA	190	Kelus
MAHARASHTRA	191	Mobar-Bhogave
MAHARASHTRA	192	Khanoli-Wayangani
MAHARASHTRA	193	Vengurla
MAHARASHTRA	194	Dabhoswada/Navabag
MAHARASHTRA	195	MuthUbhadanda
MAHARASHTRA	196	Mochemad
MAHARASHTRA	197	Shiroda
MAHARASHTRA	198	Redi
MAHARASHTRA	199	Terekhol
GOA	1	Chapora
GOA	2	Aguada
GOA	3	Panaji (Malim)
GOA	4	Santerem Pt (Vasco)
GOA	5	Majorde
GOA	6	Fatarde
GOA	7	Betul
GOA	8	Cutbona
GOA	9	Talpona
GOA	10	Kolamb
KARNATAKA	1	Majali
KARNATAKA	2	Sadasgavgarg
KARNATAKA	3	Karwar
KARNATAKA	4	Belekeri
KARNATAKA	5	Gangavali

KARNATAKA	6	Tadri
KARNATAKA	7	Kumta Pt
KARNATAKA	8	Dhareshvar
KARNATAKA	9	Karki
KARNATAKA	10	Honavar
KARNATAKA	11	Kasarkod
KARNATAKA	12	Navayatkere
KARNATAKA	13	Mavalli
KARNATAKA	14	Shirali
KARNATAKA	15	Bhatkal
KARNATAKA	16	Baindur
KARNATAKA	17	Navunda
KARNATAKA	18	Gangoli
KARNATAKA	19	Coondapoor (gangoli)
KARNATAKA	20	Kota
KARNATAKA	21	Hangarkatta
KARNATAKA	22	Malpe
KARNATAKA	23	Udiyavara
KARNATAKA	24	Kapu
KARNATAKA	25	Mulki
KARNATAKA	26	Hosabettu-Udaivar
KARNATAKA	27	Suratakal Pt
KARNATAKA	28	New Mangalore
KARNATAKA	29	Mangalore
KERALA	1	Kunzhathur

KERALA	2	Manjeshwara
KERALA	3	Uppala
KERALA	4	Arikkadi
KERALA	5	Kumbla
KERALA	6	Koipadi
KERALA	7	Mogral
KERALA	8	Adakathbail
KERALA	9	Kasaragod
KERALA	10	ThalanganJetty
KERALA	11	Kotikulam
KERALA	12	Bekal
KERALA	13	Pallikere
KERALA	14	Chittari
KERALA	15	Ajanoor-N-Bella
KERALA	16	Hosdrug
KERALA	17	Nileswaram
KERALA	18	Thaikadappuram
KERALA	19	BadagaraAzhithala
KERALA	20	CheruvathurFH
KERALA	21	Maniyat
KERALA	22	Kavvayi
KERALA	23	Kunnariyam
KERALA	24	Ettikulam
KERALA	25	Kotte Kunnu
KERALA	26	Koloth

KERALA	27	Azhikal
KERALA	28	Valapattanam
KERALA	29	Azheecode
KERALA	30	AzheecodeSouth
KERALA	31	Kannur
KERALA	32	AyikkaraFH
KERALA	33	Edakkad
KERALA	34	Muzhuppilangad
KERALA	35	Tellicherry
KERALA	36	NewMahe
KERALA	37	Mahe
KERALA	38	ChombalaFH
KERALA	39	Uralungal
KERALA	40	Nalliyankara
KERALA	41	Badagara
KERALA	42	Puduppanam
KERALA	43	Kottakkal
KERALA	44	Kizhur
KERALA	45	Tikkoti
KERALA	46	Moodady
KERALA	47	Thikkodi(Kodikkal)
KERALA	48	Kadalur Pt
KERALA	49	Quilandy/Koloth(Defunct)
KERALA	50	Kollam
KERALA	51	Poilkavu

KERALA	52	Chemancheri
KERALA	53	Kappad
KERALA	54	Elathur
KERALA	55	Elattur
KERALA	56	PuthiyappaFH
KERALA	57	Puthengadi/Paravanna
KERALA	58	Kunduparabu
KERALA	59	Nadakkavu
KERALA	60	Vellayil
KERALA	61	Calicut
KERALA	62	VadakkeKadappuram
KERALA	63	BeyyporeFH
KERALA	64	Ramanattukara
KERALA	65	Chaliyam
KERALA	66	Beyypore
KERALA	67	Kadalundinagaram
KERALA	68	Parapanangadi
KERALA	69	Parappanangadi
KERALA	70	Thanur
KERALA	71	Tanur Nagaram
KERALA	72	Paravannangadi
KERALA	73	Vakkad
KERALA	74	Koottayi
KERALA	75	Purattur
KERALA	76	Ponnani

KERALA	77	Veliyangod
KERALA	78	Palappetty
KERALA	79	Attupuram
KERALA	80	Mannalamkunnu
KERALA	81	Vayilattur
KERALA	82	Panchavadi
KERALA	83	Edakazhiyur
KERALA	84	Blangad
KERALA	85	Chavakkad
KERALA	86	Mullassheri
KERALA	87	Vadanappally
KERALA	88	Thalikulam
KERALA	89	Nattika
KERALA	90	Kazhimbram
KERALA	91	Edamuttam
KERALA	92	Palapetty
KERALA	93	KaipamangalamVanchipura
KERALA	94	PerinjanamAraattukadavu
KERALA	95	Kulimuttam
KERALA	96	Kara
KERALA	97	Pullut
KERALA	98	Eriyad(Chelarappa)
KERALA	99	Kodungallur
KERALA	100	MunambamFH
KERALA	101	Munambam

KERALA	102	Manakodam
KERALA	103	Kuzhuppilly
KERALA	104	Cherai
KERALA	105	Edvankad
KERALA	106	Edavanakad
KERALA	107	Vadakkal
KERALA	108	Puthenkadappuram
KERALA	109	Narakkal
KERALA	110	Nayarambalam
KERALA	111	Malipuram
KERALA	112	Ernakulam
KERALA	113	Murikumpadam
KERALA	114	Kalamukku
KERALA	115	Vypeen
KERALA	116	Valarpadam
KERALA	117	FortKochi
KERALA	118	Kochi
KERALA	119	Chillickal
KERALA	120	Puthenthodu(Kannamali)
KERALA	121	Maruvakad
KERALA	122	Chell anum
KERALA	123	Pallithodu
KERALA	124	Palithodu
KERALA	125	Manakkodam
KERALA	126	Thykal

KERALA	127	Arthunkal/Chennavely
KERALA	128	Aratungal
KERALA	129	Chethy
KERALA	130	Kottamkulangara
KERALA	131	Pollethai
KERALA	132	Thumpolly
KERALA	133	Thazhampally
KERALA	134	Alleppey
KERALA	135	AlleppeyBeach
KERALA	136	Kalarkod
KERALA	137	Punnappra
KERALA	138	Punnappira
KERALA	139	Valanjavazhy
KERALA	140	Ambalapuzha
KERALA	141	Purakkad
KERALA	142	Porakad
KERALA	143	Thottappally
KERALA	144	Thrikunnapuzha
KERALA	145	Trikkunnapuzha
KERALA	146	Padiyamkara Tekku
KERALA	147	Ramancheri Tura
KERALA	148	AzheekalJetty
KERALA	149	Alappattu
KERALA	150	Cheriazheekal
KERALA	151	Kovilhottam

KERALA	152	Chavara
KERALA	153	Puthenthura
KERALA	154	Vettuthura
KERALA	155	Neendakara
KERALA	156	Sakthikulangara
KERALA	157	Thankassery F.H.
KERALA	158	QuilonPort
KERALA	159	Quilon
KERALA	160	Wadi
KERALA	161	Moothakara
KERALA	162	Pallithottam
KERALA	163	Eravipuram
KERALA	164	Tanni
KERALA	165	Pozhikkara
KERALA	166	Pozhikara
KERALA	167	Paravoor
KERALA	168	Edava
KERALA	169	Kappil
KERALA	170	Edaval
KERALA	171	Vettoor
KERALA	172	Vettur
KERALA	173	Chilakkoor
KERALA	174	Arivalam&Rathikkal
KERALA	175	Mampally
KERALA	176	AnjengoNorth

KERALA	177	Anjengo
KERALA	178	AnjengoSouth
KERALA	179	Poothura
KERALA	180	Perumathura
KERALA	181	Perumatura
KERALA	182	Puthukurichi
KERALA	183	Puthenthoppu
KERALA	184	St.Andrews
KERALA	185	Pallithura
KERALA	186	Thumba
KERALA	187	Valiaveli
KERALA	188	Kochuveli
KERALA	189	Vell
KERALA	190	Vettucaud
KERALA	191	Vettucaud
KERALA	192	Kannanthura
KERALA	193	Kochuthoppu
KERALA	194	Trivandrum
KERALA	195	Valiathura/ValiathuraPier
KERALA	196	Cheriathura
KERALA	197	Bheemapally
KERALA	198	Poonthura
KERALA	199	Tiruvallam
KERALA	200	PanathuraSouth
KERALA	201	Kovalad

KERALA	202	Vizhinjam&Kottapuram
KERALA	203	Vilinjham
KERALA	204	VizhinjamNorth
KERALA	205	Mariyanadu
KERALA	206	Adimalathura
KERALA	207	Puthiathura(Kochupally)
KERALA	208	Karichal
KERALA	209	Puthiathura(Chinnamarthandanthura)
KERALA	210	Kochuthura
KERALA	211	Poovar
KERALA	212	Puvar
SOUTH TAMILNADU	1	Neerodi
SOUTH TAMILNADU	2	Marthandamthurai
SOUTH TAMILNADU	3	Vallavilai
SOUTH TAMILNADU	4	Eraviputhenthurai
SOUTH TAMILNADU	5	Ezhudesam Chinnathurai
SOUTH TAMILNADU	6	Thoothur
SOUTH TAMILNADU	7	Poothurai
SOUTH TAMILNADU	8	Erayammanthura
SOUTH TAMILNADU	9	Erayumanthurai
SOUTH TAMILNADU	10	Thengapattanam
SOUTH TAMILNADU	11	Mulloorthurai
SOUTH TAMILNADU	12	Ramanthurai
SOUTH TAMILNADU	13	Enayam puthenthurai
SOUTH TAMILNADU	14	Enayam Chinnathurai

SOUTH TAMILNADU	15	Enayam
SOUTH TAMILNADU	16	Midaalam
SOUTH TAMILNADU	17	Midalam (Naduthurai
SOUTH TAMILNADU	18	Kurumbanai
SOUTH TAMILNADU	19	Vaniyakudi
SOUTH TAMILNADU	20	Kodimunai
SOUTH TAMILNADU	21	Simon colony
SOUTH TAMILNADU	22	Coalchel
SOUTH TAMILNADU	23	Kottilpadu
SOUTH TAMILNADU	24	Mandaikadu puthoor
SOUTH TAMILNADU	25	Periavilai
SOUTH TAMILNADU	26	Chinnavilai
SOUTH TAMILNADU	27	Melakadiapattinam
SOUTH TAMILNADU	28	Kovalam
SOUTH TAMILNADU	29	Keezhakadiapattinam
SOUTH TAMILNADU	30	Melamuttom
SOUTH TAMILNADU	31	Muttom
SOUTH TAMILNADU	32	Azhikkal
SOUTH TAMILNADU	33	Rajakkamanglam
SOUTH TAMILNADU	34	Rajakamangalam Thurai
SOUTH TAMILNADU	35	Periyakadu
SOUTH TAMILNADU	36	Pozhikkarai
SOUTH TAMILNADU	37	Kesavanputhenthurai
SOUTH TAMILNADU	38	Puthenthurai
SOUTH TAMILNADU	39	Pallam

SOUTH TAMILNADU	40	Keezhamanakudi
SOUTH TAMILNADU	41	Mela Manakudi
SOUTH TAMILNADU	42	Kovalam Kanniyakumarai
SOUTH TAMILNADU	43	Puthur
SOUTH TAMILNADU	44	Puthugramam (Vavuthurai
SOUTH TAMILNADU	45	Kanniyakumari
SOUTH TAMILNADU	46	Chinnamuttom
SOUTH TAMILNADU	47	Lipuram
SOUTH TAMILNADU	48	Arockiyapuram
SOUTH TAMILNADU	49	Kuttapuli
SOUTH TAMILNADU	50	Chettikulam
SOUTH TAMILNADU	51	Perumanal
SOUTH TAMILNADU	52	Kudangulam
SOUTH TAMILNADU	53	Idinthakarai
SOUTH TAMILNADU	54	Perumanal
SOUTH TAMILNADU	55	Thommayarpuram(Muddukuli
SOUTH TAMILNADU	56	Koothanguzhi
SOUTH TAMILNADU	57	Kundal
SOUTH TAMILNADU	58	Uvari
SOUTH TAMILNADU	59	Koottappanai
SOUTH TAMILNADU	60	Kooduthalai
SOUTH TAMILNADU	61	Periyathalai
SOUTH TAMILNADU	62	Manappad Pt
SOUTH TAMILNADU	63	Kulasekharapattinam
SOUTH TAMILNADU	64	Kallamozhi

SOUTH TAMILNADU	65	Alanthalai
SOUTH TAMILNADU	66	Amalinagar
SOUTH TAMILNADU	67	Jeevanagar
SOUTH TAMILNADU	68	Veerapandiyapattinam
SOUTH TAMILNADU	69	Singhithurai
SOUTH TAMILNADU	70	Kombuthurai Madhakoil
SOUTH TAMILNADU	71	Punnakkayal
SOUTH TAMILNADU	72	Ratchanyapuram
SOUTH TAMILNADU	73	Tuticorin
SOUTH TAMILNADU	74	Pandyan
SOUTH TAMILNADU	75	Inico nagar
SOUTH TAMILNADU	76	Thoothukudi
SOUTH TAMILNADU	77	Therespuram
SOUTH TAMILNADU	78	Thalamuthunagar
SOUTH TAMILNADU	79	Vellapatti
SOUTH TAMILNADU	80	Tharuvaikulam
SOUTH TAMILNADU	81	Pattanamarudur
SOUTH TAMILNADU	82	Veppalodai
SOUTH TAMILNADU	83	Sippikulam
SOUTH TAMILNADU	84	Keezhavaippar
SOUTH TAMILNADU	85	Periasampuram
SOUTH TAMILNADU	86	Vembar
SOUTH TAMILNADU	87	Rojma Nagar
SOUTH TAMILNADU	88	Terku Mookkaiyur
SOUTH TAMILNADU	89	Valinokkam

SOUTH TAMILNADU	90	Chinna Ervadi
SOUTH TAMILNADU	91	Kilakarai
SOUTH TAMILNADU	92	Kalimankundu
SOUTH TAMILNADU	93	Muttupettai
SOUTH TAMILNADU	94	Inthira Nagar
SOUTH TAMILNADU	95	Valangapuri
SOUTH TAMILNADU	96	Seeniyappa Dharga
SOUTH TAMILNADU	97	Vedhalai
SOUTH TAMILNADU	98	Mandapam (South)
SOUTH TAMILNADU	99	Chinnapalam
SOUTH TAMILNADU	100	Pamban Kunthukal
SOUTH TAMILNADU	101	Mukuntharayarchatram
SOUTH TAMILNADU	102	Dhanushkodi
SOUTH TAMILNADU	103	Verkode
SOUTH TAMILNADU	104	Rameshwaram Harbour
SOUTH TAMILNADU	105	Olaikuda
SOUTH TAMILNADU	106	Villundi
SOUTH TAMILNADU	107	Thangachimadam
SOUTH TAMILNADU	108	Pamban Light House
SOUTH TAMILNADU	109	Mandpam (North)
SOUTH TAMILNADU	110	Munaikadu
SOUTH TAMILNADU	111	Atrangarai
SOUTH TAMILNADU	112	Alagankulam
SOUTH TAMILNADU	113	Pudukkudi
SOUTH TAMILNADU	114	Panaikulam

SOUTH TAMILNADU	115	Pudhuvalasaichathiram
SOUTH TAMILNADU	116	Palanivalasai
SOUTH TAMILNADU	117	Mudiveeranpattinam
SOUTH TAMILNADU	118	Devipattinam South
SOUTH TAMILNADU	119	Devipattinam
SOUTH TAMILNADU	120	Pathanendal
SOUTH TAMILNADU	121	Thirupalaikudi North
SOUTH TAMILNADU	122	Moreppanai
SOUTH TAMILNADU	123	Karankadu
SOUTH TAMILNADU	124	Mullimanai
SOUTH TAMILNADU	125	Pudhupattinam
SOUTH TAMILNADU	126	Tiruvettriur
SOUTH TAMILNADU	127	Soliyakudi Harbour
SOUTH TAMILNADU	128	Nambuthalai
SOUTH TAMILNADU	129	Tondi
SOUTH TAMILNADU	130	M.R.Pattinam
SOUTH TAMILNADU	131	Valasapatinam(P.V.Pattinam
SOUTH TAMILNADU	132	Narendhal
SOUTH TAMILNADU	133	Dhamotharanpattinam
SOUTH TAMILNADU	134	Pasipattinam
SOUTH TAMILNADU	135	Theerthaandathanam
SOUTH TAMILNADU	136	Sundarapandiyanpatta
SOUTH TAMILNADU	137	Muthukuda
SOUTH TAMILNADU	138	R.Pudhupattinam
SOUTH TAMILNADU	139	Gopalapattinam

SOUTH TAMILNADU	140	Muthanenthal
SOUTH TAMILNADU	141	Ayyampattinam
SOUTH TAMILNADU	142	Kottaippattanam
SOUTH TAMILNADU	143	Pudhukkudi South
SOUTH TAMILNADU	144	Pudhukkudi North
SOUTH TAMILNADU	145	Anthonyarpuram
SOUTH TAMILNADU	146	Ponagaram
SOUTH TAMILNADU	147	Manamelkudi
SOUTH TAMILNADU	148	Keelakudiyiruppu
SOUTH TAMILNADU	149	Vadaku Amapattinam
SOUTH TAMILNADU	150	Seetharampattinam
NORTH TAMILNADU	1	Krishnajipattinam
NORTH TAMILNADU	2	Prathaparamanpattinam
NORTH TAMILNADU	3	Kattumavadi
NORTH TAMILNADU	4	Sembiyanmadevipattinam
NORTH TAMILNADU	5	Ganesapuram
NORTH TAMILNADU	6	Vallavanpattinam
NORTH TAMILNADU	7	Subbamachatram
NORTH TAMILNADU	8	Somanathanpattinam
NORTH TAMILNADU	9	Annanagar Pudhuthuru
NORTH TAMILNADU	10	Mandhiripattinam
NORTH TAMILNADU	11	Senthalaivayal
NORTH TAMILNADU	12	Adaikkadevan
NORTH TAMILNADU	13	Sambaipattinam
NORTH TAMILNADU	14	Karanguda

NORTH TAMILNADU	15	Kazhumanguda
NORTH TAMILNADU	16	Sethubavachatram
NORTH TAMILNADU	17	Pillayarthidal
NORTH TAMILNADU	18	Chinnamanai
NORTH TAMILNADU	19	Mallipattinam
NORTH TAMILNADU	20	Puthupattinam
NORTH TAMILNADU	21	Velivayal
NORTH TAMILNADU	22	Kollukadu
NORTH TAMILNADU	23	Keelathottam
NORTH TAMILNADU	24	Eripurakkarai
NORTH TAMILNADU	25	Gandhinagar
NORTH TAMILNADU	26	Karaiyurtheru
NORTH TAMILNADU	27	Maravakadu
NORTH TAMILNADU	28	Thambikottai
NORTH TAMILNADU	29	Muthupet
NORTH TAMILNADU	30	Point Calimer
NORTH TAMILNADU	31	Kodiyakarai
NORTH TAMILNADU	32	Vedaranniyam
NORTH TAMILNADU	33	Arkkattuthurai
NORTH TAMILNADU	34	Topputturai
NORTH TAMILNADU	35	Pushpavanam
NORTH TAMILNADU	36	Kallinodu
NORTH TAMILNADU	37	Vellapallam
NORTH TAMILNADU	38	Vanavanmadevi
NORTH TAMILNADU	39	Vettaikaranrippu

NORTH TAMILNADU	40	Vilunthamavadi
NORTH TAMILNADU	41	Kameshwaram
NORTH TAMILNADU	42	Seruthur
NORTH TAMILNADU	43	Velanganni
NORTH TAMILNADU	44	Akkaraipettai
NORTH TAMILNADU	45	Nagapattinam Harbour
NORTH TAMILNADU	46	Nambiyar Nagar
NORTH TAMILNADU	47	Samanthanpettai
NORTH TAMILNADU	48	Nagore
NORTH TAMILNADU	49	Karikal
NORTH TAMILNADU	50	Pattinacherry
NORTH TAMILNADU	51	Chinnorpettai
NORTH TAMILNADU	52	Chandrappadi
NORTH TAMILNADU	53	Tharangampadi
NORTH TAMILNADU	54	Kuttiyandiyur
NORTH TAMILNADU	55	Bommayanpettai (Vellakoil
NORTH TAMILNADU	56	Perumalpettai
NORTH TAMILNADU	57	Tranquebar
NORTH TAMILNADU	58	Pudhupettai
NORTH TAMILNADU	59	Thalampettai
NORTH TAMILNADU	60	Chinnangudi
NORTH TAMILNADU	61	Kaverippattinam
NORTH TAMILNADU	62	Vanagiri
NORTH TAMILNADU	63	Poombuhar
NORTH TAMILNADU	64	Pudukuppam

NORTH TAMILNADU	65	Madathukuppam
NORTH TAMILNADU	66	Naickerkuppam
NORTH TAMILNADU	67	Chavadikuppam
NORTH TAMILNADU	68	Keezhamoovarkarai
NORTH TAMILNADU	69	Tirumullaivasal
NORTH TAMILNADU	70	Thoduvai
NORTH TAMILNADU	71	Mudasalodai Village
NORTH TAMILNADU	72	Koozhayar
NORTH TAMILNADU	73	Kottaimedu
NORTH TAMILNADU	74	Madavamedu
NORTH TAMILNADU	75	Pazhayar
NORTH TAMILNADU	76	Killai
NORTH TAMILNADU	77	M.G.R. Thittu
NORTH TAMILNADU	78	Mudasalodai
NORTH TAMILNADU	79	Parangipettai
NORTH TAMILNADU	80	Portonovo
NORTH TAMILNADU	81	C Pudupettai
NORTH TAMILNADU	82	Pudukuppam
NORTH TAMILNADU	83	Veerampatinam
NORTH TAMILNADU	84	Samanthapettai
NORTH TAMILNADU	85	Samiyarpettai
NORTH TAMILNADU	86	Kumarapettai
NORTH TAMILNADU	87	Periyakuppam
NORTH TAMILNADU	88	Chithirapettai
NORTH TAMILNADU	89	Rajappettai

NORTH TAMILNADU	90	Sothikuppam
NORTH TAMILNADU	91	Cuddalore Harbour
NORTH TAMILNADU	92	Sonaankuppam
NORTH TAMILNADU	93	Devanampattinam
NORTH TAMILNADU	94	Thazhanguda
NORTH TAMILNADU	95	Moorthipudukuppam
NORTH TAMILNADU	96	Panithittu
NORTH TAMILNADU	97	Narambai
NORTH TAMILNADU	98	Nallavadu
NORTH TAMILNADU	99	P. Pudukuppam
NORTH TAMILNADU	100	Chinna Veerampattinam
NORTH TAMILNADU	101	Veerampattinam
NORTH TAMILNADU	102	Thengaithittu
NORTH TAMILNADU	103	Pondicherry
NORTH TAMILNADU	104	Vaithikuppam
NORTH TAMILNADU	105	Solainagar North
NORTH TAMILNADU	106	Sodhanaikuppam
NORTH TAMILNADU	107	Nadukuppam
NORTH TAMILNADU	108	Thandhirayankuppam
NORTH TAMILNADU	109	Chinna mudaliarchavadi
NORTH TAMILNADU	110	Bommaiyarpalyam
NORTH TAMILNADU	111	Pillaichavadi
NORTH TAMILNADU	112	Periya Kalapet
NORTH TAMILNADU	113	Ganapathichettikulam
NORTH TAMILNADU	114	Pudhukuppam

NORTH TAMILNADU	115	Anichankuppam
NORTH TAMILNADU	116	Mudaliarkuppam
NORTH TAMILNADU	117	Nochikuppam
NORTH TAMILNADU	118	Koonimedu Kuppam
NORTH TAMILNADU	119	Chettinagar
NORTH TAMILNADU	120	Anumandhaikuppam
NORTH TAMILNADU	121	Komuttichavadikuppam
NORTH TAMILNADU	122	Mandavai Pudukuppam
NORTH TAMILNADU	123	Ekkiyarkuppam
NORTH TAMILNADU	124	Marakkanam
NORTH TAMILNADU	125	Kaippanikuppam
NORTH TAMILNADU	126	Vasavankuppam
NORTH TAMILNADU	127	Muttukaduazhagankuppam
NORTH TAMILNADU	128	Alambaraikuppam
NORTH TAMILNADU	129	Kadappakam
NORTH TAMILNADU	130	Panaiyur Periya Kuppam
NORTH TAMILNADU	131	Panaiyur Chinnakuppam
NORTH TAMILNADU	132	Mudaliyar Kuppam
NORTH TAMILNADU	133	Cheyur
NORTH TAMILNADU	134	Paramankeni
NORTH TAMILNADU	135	Perun Thuravu Kuppam
NORTH TAMILNADU	136	Pudhunadukuppam
NORTH TAMILNADU	137	Pazhayanadukuppam
NORTH TAMILNADU	138	Angalamman Kuppam
NORTH TAMILNADU	139	Kadalore Ali Kuppam

NORTH TAMILNADU	140	Padalore Periya Kuppam
NORTH TAMILNADU	141	Kadalore Chinna Kuppam
NORTH TAMILNADU	142	Uyyalikuppam
NORTH TAMILNADU	143	Sadras
NORTH TAMILNADU	144	Pudupattinam
NORTH TAMILNADU	145	Sathurangapattinam
NORTH TAMILNADU	146	Umarikuppam
NORTH TAMILNADU	147	Meyyurkuppam
NORTH TAMILNADU	148	Kokilamedu
NORTH TAMILNADU	149	Venpursham
NORTH TAMILNADU	150	Mamallapuram
NORTH TAMILNADU	151	Mahabalipuram
NORTH TAMILNADU	152	Devaneri
NORTH TAMILNADU	153	Salavankuppam
NORTH TAMILNADU	154	Pudu Nemeli Kuppam
NORTH TAMILNADU	155	Pattipulam
NORTH TAMILNADU	156	Soolerikattukuppam
NORTH TAMILNADU	157	Nemmelikuppam
NORTH TAMILNADU	158	Pudhukalpakkam
NORTH TAMILNADU	159	Chemacherry
NORTH TAMILNADU	160	Covelong (Kovalam)
NORTH TAMILNADU	161	Egattur Karikattukuppam
NORTH TAMILNADU	162	Kanathur Reddy Kuppam
NORTH TAMILNADU	163	Kanathur
NORTH TAMILNADU	164	Nainarkuppam

NORTH TAMILNADU	165	Panaiyurkuppam
NORTH TAMILNADU	166	Injampakkam
NORTH TAMILNADU	167	Chinnandikuppam
NORTH TAMILNADU	168	Periya Neelankarai
NORTH TAMILNADU	169	Chinna Neelankarai
NORTH TAMILNADU	170	Palavakkam
NORTH TAMILNADU	171	Kottivakkam
NORTH TAMILNADU	172	Thiruvanmiyur
NORTH TAMILNADU	173	Odaikuppam
NORTH TAMILNADU	174	Orurkuppam
NORTH TAMILNADU	175	Srinivasapuram
NORTH TAMILNADU	176	Mullimanagar
NORTH TAMILNADU	177	Pattinampakkam
NORTH TAMILNADU	178	Nochikuppam
NORTH TAMILNADU	179	Cathedral (Chennai)
NORTH TAMILNADU	180	Nadukuppam
NORTH TAMILNADU	181	Ayothikuppam
NORTH TAMILNADU	182	Mattankuppam
NORTH TAMILNADU	183	Chennai
NORTH TAMILNADU	184	Lakshmipuram Odaikuppam
NORTH TAMILNADU	185	Royapuram
NORTH TAMILNADU	186	Ondikuppam
NORTH TAMILNADU	187	Nallathanneer Odaikuppam
NORTH TAMILNADU	188	Thiruchinnankuppam
NORTH TAMILNADU	189	Kasiviswanathar koil Kuppam

NORTH TAMILNADU	190	Palagaithottikuppam
NORTH TAMILNADU	191	Kasikoilkuppam
NORTH TAMILNADU	192	Ernavoorkuppam
NORTH TAMILNADU	193	Kathivakkam Chinnakuppam
NORTH TAMILNADU	194	Kathivakkam Periakuppam
NORTH TAMILNADU	195	Thazankuppam
NORTH TAMILNADU	196	Ennore Mugathuvarakuppan
NORTH TAMILNADU	197	Ennorekuppam
NORTH TAMILNADU	198	Pulicat
NORTH TAMILNADU	199	Coromandel
SOUTH ANDHRAPRADESH	1	Annamalaichery
SOUTH ANDHRAPRADESH	2	Periyamangodu
SOUTH ANDHRAPRADESH	3	Arambakkam
SOUTH ANDHRAPRADESH	4	Pulinjerikuppam
SOUTH ANDHRAPRADESH	5	Durgarajupatnam
SOUTH ANDHRAPRADESH	6	Kondur
SOUTH ANDHRAPRADESH	7	Arkatapalem
SOUTH ANDHRAPRADESH	8	Kottapatnam
SOUTH ANDHRAPRADESH	9	Tammenapatnam
SOUTH ANDHRAPRADESH	10	Krishnapatnam(Upputeru)
SOUTH ANDHRAPRADESH	11	Krishnapatnam
SOUTH ANDHRAPRADESH	12	Pathapalem
SOUTH ANDHRAPRADESH	13	Maipadu
SOUTH ANDHRAPRADESH	14	Pattapupalem
SOUTH ANDHRAPRADESH	15	Utukuru

SOUTH ANDHRAPRADESH	16	Isakapalle
SOUTH ANDHRAPRADESH	17	Zuvvaladinne
SOUTH ANDHRAPRADESH	18	Vatturupallepalem
SOUTH ANDHRAPRADESH	19	Ramayapatnam
SOUTH ANDHRAPRADESH	20	Chakicherla
SOUTH ANDHRAPRADESH	21	Itamukkala
SOUTH ANDHRAPRADESH	22	Allurukottapatnam
SOUTH ANDHRAPRADESH	23	Adavipallipalem
SOUTH ANDHRAPRADESH	24	Vetapalem
SOUTH ANDHRAPRADESH	25	Vadarevu
SOUTH ANDHRAPRADESH	26	Bestapalam Bapatla
SOUTH ANDHRAPRADESH	27	Suryalanka
SOUTH ANDHRAPRADESH	28	Nizampatnam
SOUTH ANDHRAPRADESH	29	Nachugunta
SOUTH ANDHRAPRADESH	30	Etimoga
SOUTH ANDHRAPRADESH	31	Sorlagondi
SOUTH ANDHRAPRADESH	32	Palakayatippa
SOUTH ANDHRAPRADESH	33	Machilipatnam
SOUTH ANDHRAPRADESH	34	Giripuram
SOUTH ANDHRAPRADESH	35	Pedda Gollapalem
SOUTH ANDHRAPRADESH	36	Antarvedi
SOUTH ANDHRAPRADESH	37	Narasapur Pt
SOUTH ANDHRAPRADESH	38	Bandamurlanka
SOUTH ANDHRAPRADESH	39	Odalarevu
NORTH ANDHRAPRADESH	1	Kothapalem LH

NORTH ANDHRAPRADESH	2	Bhairavapalem
NORTH ANDHRAPRADESH	3	Kakinada
NORTH ANDHRAPRADESH	4	Vakalapudi
NORTH ANDHRAPRADESH	5	Uppada
NORTH ANDHRAPRADESH	6	Konapapeta
NORTH ANDHRAPRADESH	7	Perumallapuram
NORTH ANDHRAPRADESH	8	Palmanpeta
NORTH ANDHRAPRADESH	9	Danavaipeta
NORTH ANDHRAPRADESH	10	Pentakota
NORTH ANDHRAPRADESH	11	Revu Polavaram
NORTH ANDHRAPRADESH	12	Rambilli
NORTH ANDHRAPRADESH	13	Pudimadaka
NORTH ANDHRAPRADESH	14	Visakhapatnam
NORTH ANDHRAPRADESH	15	Bhimunipatnam
NORTH ANDHRAPRADESH	16	Mukkam
NORTH ANDHRAPRADESH	17	Konada
NORTH ANDHRAPRADESH	18	Chintapalli
NORTH ANDHRAPRADESH	19	Ramachandrapuram
NORTH ANDHRAPRADESH	20	Allivalasa
NORTH ANDHRAPRADESH	21	Kuppili
NORTH ANDHRAPRADESH	22	Srikurmam
NORTH ANDHRAPRADESH	23	Bandaruvanipeta
NORTH ANDHRAPRADESH	24	Kalingapatnam
NORTH ANDHRAPRADESH	25	Guppidipeta
NORTH ANDHRAPRADESH	26	Jagannadhapuram

NORTH ANDHRAPRADESH	27	Maruvada
NORTH ANDHRAPRADESH	28	Kotta Naupada
NORTH ANDHRAPRADESH	29	Bavanapadu
NORTH ANDHRAPRADESH	30	Nuvvalarevu
NORTH ANDHRAPRADESH	31	Metturu
NORTH ANDHRAPRADESH	32	Ganguvada
NORTH ANDHRAPRADESH	33	Baruva
NORTH ANDHRAPRADESH	34	Iduvanipalem
NORTH ANDHRAPRADESH	35	Kaviti
NORTH ANDHRAPRADESH	36	Anantaraipur
NORTH ANDHRAPRADESH	37	KeutaSonapur
NORTH ANDHRAPRADESH	38	PatiSonapur
NORTH ANDHRAPRADESH	39	Sonnapurampeta
ODISHA	1	Rameyapatna
ODISHA	2	Ekasingi
ODISHA	3	Markondi
ODISHA	4	New Golabandha
ODISHA	5	Gopalpur-IFH
ODISHA	6	Golabandha
ODISHA	7	OldBuxipetta
ODISHA	8	NewBaxipalli
ODISHA	9	Gopalpur
ODISHA	10	Garyampetta
ODISHA	11	Sana Aryapalli
ODISHA	12	BadaNuagaon

ODISHA	13	SanaNuagaon
ODISHA	14	Ganjam
ODISHA	15	Kantiagada(Podampeta)
ODISHA	16	Prayagi
ODISHA	17	Ramalanka
ODISHA	18	Bajarkot
ODISHA	19	Khirisahi
ODISHA	20	Satpara
ODISHA	21	Siandi
ODISHA	22	Arakhakud
ODISHA	23	PuriNorth
ODISHA	24	PuriSouth
ODISHA	25	Puri
ODISHA	26	Penthakata
ODISHA	27	Bangor
ODISHA	28	Chandrabhaga
ODISHA	29	Kajalpatia(Khandiapatna)
ODISHA	30	Tondahar
ODISHA	31	Anakona&Dalukani
ODISHA	32	Astaranga
ODISHA	33	Balipantala
ODISHA	34	Sudhikeswar(Talia)
ODISHA	35	NuagarhFH(Astaranga)
ODISHA	36	Nuagar
ODISHA	37	Bandar

ODISHA	38	Magarkhia
ODISHA	39	Saharabedi
ODISHA	40	Kaliakana
ODISHA	41	Noliasahi
ODISHA	42	Nuagan
ODISHA	43	Jamuka
ODISHA	44	ParadeepFH
ODISHA	45	Paradip
ODISHA	46	Atharabanki
ODISHA	47	Chumuhani
ODISHA	48	Kharnasi
ODISHA	49	False Point
ODISHA	50	Kharinasi
ODISHA	51	Jambu
ODISHA	52	Jmboo
ODISHA	53	Barunie
ODISHA	54	Sasanpeta(Tantiapal)
ODISHA	55	Gajarajpur
ODISHA	56	Hariharpur
ODISHA	57	Satbhaya
ODISHA	58	Ahirajpur
ODISHA	59	Talchua
ODISHA	60	Dhamra
ODISHA	61	Chandinipal
ODISHA	62	DhamaraFH

ODISHA	63	Kaithakhola
ODISHA	64	Karanjamal
ODISHA	65	Baincha
ODISHA	66	Karanpalli
ODISHA	67	Kasianala
ODISHA	68	ChudamaniBoatJetty
ODISHA	69	Chudamani
ODISHA	70	Panchubisa
ODISHA	71	Godaisagar
ODISHA	72	Janipur
ODISHA	73	Mahisali
ODISHA	74	Chandipur
ODISHA	75	Balaramgadi(ChandipurFLC)
ODISHA	76	Balaramgadi
ODISHA	77	Bahabalapur(KasafalSouth)
ODISHA	78	Bahabalpur
ODISHA	79	Bindha
ODISHA	80	Hansakura
ODISHA	81	Kasafala
ODISHA	82	Choumukh
ODISHA	83	Dagara
ODISHA	84	Kirtania
ODISHA	85	Chandeneswar
ODISHA	86	Talasari
WEST BENGAL	1	DighaMohanaF.F.T.A.(Digha)

WEST BENGAL	2	Shankarpur
WEST BENGAL	3	Sankarpur F.F.T.A.(Sankarpur)
WEST BENGAL	4	Tajpur Jaldha
WEST BENGAL	5	Digha
WEST BENGAL	6	Junput
WEST BENGAL	7	Petuaghat (Dariapur)
WEST BENGAL	8	LightHouse, Gangasagar GP
WEST BENGAL	9	Diamond Harbour Jetty Ghat in front of SDO, Office
WEST BENGAL	10	Diamond Harbour
WEST BENGAL	11	Kakdwip
WEST BENGAL	12	Namkhana
WEST BENGAL	13	Sagar
WEST BENGAL	14	Frasergunje
WEST BENGAL	15	Frezerganj FH
WEST BENGAL	16	Lothian Island
ANDAMAN	1	Landfall
ANDAMAN	2	Narcondam
ANDAMAN	3	Diglipur
ANDAMAN	4	Laxmipur, Diglipur
ANDAMAN	5	Areal Bay, Diglipur
ANDAMAN	6	Durgapur
ANDAMAN	7	Kalipur, Diglipur
ANDAMAN	8	Kalighat, Diglipur
ANDAMAN	9	Pokadera

ANDAMAN	10	Mayabunderproper
ANDAMAN	11	Webi,Mayabunder
ANDAMAN	12	Tugapur,Mayabunder
ANDAMAN	13	Betapur(RRO)
ANDAMAN	14	Rangat Bay
ANDAMAN	15	KaushalyaNagar
ANDAMAN	16	Dashratpur
ANDAMAN	17	Yerrata
ANDAMAN	18	Long Island
ANDAMAN	19	Elphinstone Hr
ANDAMAN	20	Uttara
ANDAMAN	21	OralKatcha
ANDAMAN	22	Barren
ANDAMAN	23	Havelock
ANDAMAN	24	Middle Strait
ANDAMAN	25	ShoalBay
ANDAMAN	26	Wrightmyo
ANDAMAN	27	Neil Island
ANDAMAN	28	Port Blair
ANDAMAN	29	Bambooflat
ANDAMAN	30	Haddo
ANDAMAN	31	Hope Town
ANDAMAN	32	Dunduspoint
ANDAMAN	33	Phoenix Bay
ANDAMAN	34	Junglighat

ANDAMAN	35	Dignabad
ANDAMAN	36	Mt Haughton
ANDAMAN	37	Lohabarrack
ANDAMAN	38	Chouldari
ANDAMAN	39	Wandoor
ANDAMAN	40	Chidiyatapu
ANDAMAN	41	Rutland
ANDAMAN	42	Cinque Island
ANDAMAN	43	Tambe-e-bul
ANDAMAN	44	Vivekanandpur, Little Andaman
ANDAMAN	45	Rama Krishna Pur,
ANDAMAN	46	Kwate-tu-Kwage
ANDAMAN	47	Harminder Bay
ANDAMAN	48	Machidera (Hutbay),
ANDAMAN	49	Benyaboi
ANDAMAN	50	Tula
ANDAMAN	51	Tochangeou
NICOBAR	1	Keating Pt (Car Nicobar)
NICOBAR	2	Mus, Car Nicobar
NICOBAR	3	Sawai (Car Nicobar)
NICOBAR	4	Teetop, Car Nicobar
NICOBAR	5	Passa, Car Nicobar
NICOBAR	6	Arrong (Car Nicobar)
NICOBAR	7	Malacca, Car Nicobar
NICOBAR	8	Batti Malv

NICOBAR	9	Chowra
NICOBAR	10	Aoang
NICOBAR	11	Laksi
NICOBAR	12	Bampoka
NICOBAR	13	Kai-Hoa
NICOBAR	14	Takaroach
NICOBAR	15	Trinket,Nancowry
NICOBAR	16	Kamorta,Nancowry
NICOBAR	17	Hitui,Nancowry
NICOBAR	18	Champion,Nancowry
NICOBAR	19	Balubasti, Nancowry Island
NICOBAR	20	Attabiak, Nancowry Island
NICOBAR	21	Tapong, Nancowry Island
NICOBAR	22	Cape Connaught
NICOBAR	23	Kapanga, Katchall
NICOBAR	24	Katchal East Bay
NICOBAR	25	Jansin
NICOBAR	26	Katchal West Bay
NICOBAR	27	Sombrero Pt
NICOBAR	28	Pulo Patia
NICOBAR	29	Kabra Pt
NICOBAR	30	Tenlaa
NICOBAR	31	Rosen Pt
NICOBAR	32	CampbellBay
NICOBAR	33	Vijoy Nagar

NICOBAR	34	Indira Pt
NICOBAR	35	Kokeon
NICOBAR	36	Pulo Kunji
LAKSHADWEEP	1	Valiyapani reef
LAKSHADWEEP	2	Byramgore
LAKSHADWEEP	3	Cheriyapani reef
LAKSHADWEEP	4	Chetlat I
LAKSHADWEEP	5	Bitra I
LAKSHADWEEP	6	Kiltani
LAKSHADWEEP	7	Perumalpar reef
LAKSHADWEEP	8	Kadmath I
LAKSHADWEEP	9	Amini I
LAKSHADWEEP	10	Tinnakara
LAKSHADWEEP	11	Bangaram I
LAKSHADWEEP	12	Agatti I
LAKSHADWEEP	13	Androth I
LAKSHADWEEP	14	Kavaratti I
LAKSHADWEEP	15	Valiykara
LAKSHADWEEP	16	Suheli
LAKSHADWEEP	17	Cheriyakara
LAKSHADWEEP	18	Kalpeni I
LAKSHADWEEP	19	Minicoy

ANNEXURE 3- INCOIS Cyclone warning message

The message structure for cyclone warning message is as given below:

Table 1: Sub frame data structure

1	9	26	27	28	30	31	37	257	263	287
TLM	TOWC	RESERVED				MESSAGE ID	DATA	Satellite ID	CRC	Tail
8 BITS	17 BITS	5 BITS				6 BITS	220 BITS	6 BITS	24 BITS	6 BITS

The message format of the 220 bits of Cyclone warning data is as given below.

ODD Segment

220 bits								
Service ID	Seg. Count	Seg. ID	Continuity Bit	Port Name-1	CW 1 Message	CW 1 Clear	Port Name-2	CW 2 Message
4 bits	4 bits	4 bits	1 Bit	8 bits	103 bits	1 bit	8 bits	87 bits

Even Segment

220 bits									
Service ID	Seg. Count	Seg. ID	Continuity Bit	CW 2 Message	CW 2 Clear	Port Name-3	CW 3 Message	CW 3 Clear	Spare Bits
4 bits	4 bits	4 bits	1 Bit	16 bits	1 bit	8 bits	103 bits	1 bit	78 bits

Figure 1: Cyclone warning alert structure (220 bits)

Cyclone Warning Message (103 Bits):

System Category	System Name	Lat	Lon	Date	Time	Direction	km	Location	Max. Wind Speed	Max. Wave Height	Max. Current Speed	Advice
3	6	9	10	16	11	3	11	11	7	8	6	2

Figure 2: Cyclone warning message format (103 bits)

Note: If there are more than one cyclones two segments will be sent which can accommodate 3 CW messages. In odd segments, a part of the 2nd CW message will be sent and remaining part in the even segment. Continuity bit will be ‘1’ in case of multiple CW messages. Otherwise it will be ‘0’. In case there are only one CW message the last 95 bits in first subframe will be padded with ‘0’ and continuity bit will be ‘0’.

Segment Count represents no of segments in the complete message and segment ID represents the number of the current segment. These are used if the message(s) length exceeds 220 bits.

Table 2: Message Contents

Item	Details	Bits	Remarks
System Category	Cyclone Status	3	Table 4
System Name	Cyclone Name	6	Table 5
Latitude	Latitude	9	Represented in the format xx.x degrees with 0.1 degree resolution
Longitude	Longitude	10	Represented in the format xxx.x degrees with 0.1 degree resolution
Date	DDMMYY	16	Dates (DD) (1-31) : 5 bits (MSB) Months (MM) (1-12): 4 bits Year (YY) (1- 99) : 7 Bits (LSB)
Time	HHMM	11	Hour (HH) (0-24) : 5 (MSB) Minutes (MM) (0-60) : 6 (LSB)
Direction	Position of cyclone wrt a location in the mainland or Island	3	Table 8
Kilometer		11	Decimal Point is not required
Location	Location	11	Table 12
Max Wind Speed	Maximum value of wind speed	7	Decimal Point is not required
Max Wave Height	Maximum value of wave height	8	Represent in the format xx.x m
Max Current Speed	Maximum value of current speed	6	Represented in the format x.x m/sec
Advice	Advisory Message	2	Table 9
	Total	103 bits	

Each warning message is associated with respective warning clear message that indicates the corresponding warning has been cleared. The warning clear indicator shall be as follows:

Table 3: Cyclone Warning Clear indicator

Message	Code
Warning Present	0
Warning Cleared	1

INCOIS will have the flexibility to transmit the Cyclone warning information in different segments (up to 10 segments of each 220bits) of a given message ID. The total message length can vary from 220bits (1segment) to 2200bits (10 segments). The transmission time will vary 12 sec to 120 sec (2 minutes) respectively.

Decoding Scheme:

- Decode the sub frame data completely.
- **Service ID:** Decode the 4 bit service ID. 1111 represents Cyclone Warning Message
- **Segment count:** 4 bit segment count represent the total number of segment in a message.
- **Segment ID:** The 4 bit segment ID represents the Id of a segment being transmitted in a given message.
- **Port Name:** Extract the 8 bit value and identify the Port Name from Table 11.
- **Kilometers:** Convert 11 bit binary value into decimal.
- **System Category:** Extract 3 bit system category and identify the cyclone category from Table 4.

Table 4: System Category

Sl. No	Cyclone Status	Code
0	Low Pressure	000
1	Depression	001
2	Deep Depression	010
3	Cyclone Storm	011
4	Severe Cyclone Storm	100
5	Very Severe Cyclone Storm	101
6	Extremely Severe Cyclone Storm	110
7	Super Cyclonic Storm	111

- **System Name:** Convert 6 bits to decimal. Identify the corresponding name in table 5.

Table 5: System Name

Sl. No	Cyclone Name	Code
0	--	0000
1	Sagar	0001
2	Mekunu	0010
3	Daye	0011
4	Luban	0100
5	Titli	0101
6	Gaja	0110
7	Phethai	0111
8	Fani	1000
9	Vayu	1001
10	Hikaa	1010
11	Kyarr	1011
12	Maha	1100
13	Bulbul	1101
14	Pawan	1110
15	Amphan	1111

- **Latitude:** Convert latitude information given in binary to decimal (3 digits). Place the decimal point before the last digit.
- **Longitude:** Convert longitude information given in binary to decimal (4 digits). Place the decimal point before the last digit.
- **Date (DDMMYY):** Convert binary to decimal

Table 6: Date Format

DD/MM/YY	Bits
Dates (DD) (1-31)	5 bits (MSB)
Months (MM) (1-12)	4 bits
Year (YY) (1-99)	7 Bits (LSB)

- **Time: HHMM:** Convert binary to decimal

Table 7: Time Format

Time	Bits
Hour (HH) (0-24)	5 (MSB)
Minutes (MM) (0-60)	6 (LSB)

- **Direction:** Extract 3 bits and identify the cyclone category from Table 8.

Table 8: Direction

Sl.No	Direction	Code
0	S	000
1	E	001
2	N	010
3	W	011
4	NW	100
5	NE	101
6	SW	110
7	SE	111

- **Location:** Convert 11 bits to decimal and identify the corresponding name in table 12.
- **Max wind speed:** Convert maximum wind speed information given in 7-bit binary to decimal (3 digits). Wind speed is represented in whole numbers without decimal point.
- **Max wave height:** Convert maximum wind speed information given in 8-bit binary to decimal (3 digits) and place the decimal point before the last digit.
- **Max current speed:** Convert maximum wind speed information given in 6-bit binary to decimal (2 digits) and place the decimal point before the last digit.
- **Advisory Message:** Extract the two bits and identify the message from Table 9.

Table 9: Advisory Message

Message	Code
Fishermen not to venture into open seas	00
Fishermen at Sea not to come to the ports in the coast of _____ {2 regions at max will be given}	01
Fishermen to be cautious while going out in the sea	10
Fishermen are advised to return to coast	11

** if the message is of code '01', then the 8 bits reserved for Port name will be transmitted in 8 bits as given in **Table 11**.

- **Cyclone Warning Clear:** Extract 2 bit and identify the message from Table 10.

Table 10: Cyclone Warning Clear indicator

Message	Code
Warning Present	0
Warning Cleared	1

Table 11 : Port Name

Sl No	Port Region	Code
1	North Gujarat	0000
2	South Gujarat	0001
3	North Maharashtra	0010
4	South Maharashtra	0011
5	Goa	0100
6	Karnataka	0101
7	North Kerala	0110
8	South Kerala	0111
9	North Tamil Nadu	1000
10	South Tamil Nadu	1001
11	North Andhra Pradesh	1010
12	South Andhra Pradesh	1011
13	Odisha	1100
14	West Bengal	1101
15	Andaman & Nicobar	1110

16	Lakshadweep	1111
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Format of the expected output message

Cyclone/Ocean State warning associated with **{System Category}**, **{Name}**: **{Nil}**,

System at**{Lat}** N, **{Lon}** E,**{10}kms{SW}** off **{Location}** on **Date:DD/MM/YY**

Time:HH:MM.

Maximum Wind Speed:**{WindSpeed}** m/s [but, display in Km/hr at the receiver end]

Maximum Wave Height:**{Waveheight}** m

Maximum Current Speed:**{Current Speed}** m/s

Advice:**{Advice}**

Table 12: Locations

Code	Location
1	Lakhapat,GUJARAT
2	Kanoj,GUJARAT
3	NarayanSarovar(Koteswar),GUJARAT
4	Guvar,GUJARAT
5	LakhiBandar,GUJARAT
6	Bhatau,GUJARAT
7	MotiAkri,GUJARAT
8	MithaPort,GUJARAT
9	Jakhau,GUJARAT
10	Kadoli,GUJARAT
11	Khuada,GUJARAT
12	Chhachhi,GUJARAT
13	Bambhdai,GUJARAT
14	Bhada,GUJARAT
15	NanaLayja,GUJARAT
16	Kanthada,GUJARAT
17	Mandvi,GUJARAT
18	RawalPirDargah,GUJARAT

19	Modhva,GUJARAT
20	Tragdi,GUJARAT
21	Tunda,GUJARAT
22	Navinal,GUJARAT
23	Zarpara,GUJARAT
24	Mundra,GUJARAT
25	Shekhadiya,GUJARAT
26	Luni,GUJARAT
27	Bhadreshwar,GUJARAT
28	Kukadsar,GUJARAT
29	Sanghad,GUJARAT
30	TunaPort,GUJARAT
31	Tekra,GUJARAT
32	Kandla,GUJARAT
33	Navlakhi,GUJARAT
34	DabarCr,GUJARAT
35	Jodiya,GUJARAT
36	Balachadi,GUJARAT
37	Sachana,GUJARAT
38	KalyanLt,GUJARAT
39	PirotonIsland,GUJARAT
40	Sikka,GUJARAT
41	Vadinar,GUJARAT
42	Bharana,GUJARAT
43	NanaAmbla,GUJARAT
44	Salaya,GUJARAT
45	MotaAsota,GUJARAT
46	Poshitra,GUJARAT

47	Okha,GUJARAT
48	MithaPort,GUJARAT
49	Kachchigadh,GUJARAT
50	Rupen,GUJARAT
51	Dwarka,GUJARAT
52	Kuranga,GUJARAT
53	Bhogat,GUJARAT
54	Navadra,GUJARAT
55	Miyani,GUJARAT
56	HarshadMiyani,GUJARAT
57	TukdaMiyani,GUJARAT
58	Raatadi,GUJARAT
59	Kuchhadi,GUJARAT
60	Porbandar,GUJARAT
61	odadar,GUJARAT
62	Navibandar,GUJARAT
63	Gorsar,GUJARAT
64	Madhavpur,GUJARAT
65	Shil,GUJARAT
66	Mangrol,GUJARAT
67	MangrolBara,GUJARAT
68	Chorwad,GUJARAT
69	Adri,GUJARAT
70	Veraval,GUJARAT
71	Hirakot,GUJARAT
72	Kadwar,GUJARAT
73	Sutrapada,GUJARAT
74	Vadodra,GUJARAT

75	Dhamlej,GUJARAT
76	MulDwarka,GUJARAT
77	MadhvadLighthouse,GUJARAT
78	Kotda,GUJARAT
79	DiuIsland,GUJARAT
80	NavaBandar,GUJARAT
81	Simar,GUJARAT
82	SaiyadRajpara,GUJARAT
83	Rohisa,GUJARAT
84	Jafarabad,GUJARAT
85	Shiyalbet,GUJARAT
86	Pipavav,GUJARAT
87	Patva,GUJARAT
88	Gadhada,GUJARAT
89	Mahuva(BhavaniBandar),GUJARAT
90	Mahuva(LightHouse),GUJARAT
91	Nikol,GUJARAT
92	Methla,GUJARAT
93	Jhanjhmer,GUJARAT
94	Gopnath,GUJARAT
95	Sartanpar,GUJARAT
96	Alang,GUJARAT
97	MithiVirdi,GUJARAT
98	Haathab,GUJARAT
99	PiramBet,GUJARAT
100	Badi,GUJARAT
101	Ghogha,GUJARAT
102	BhavanagarNewPort,GUJARAT

103	DungariyaBet,GUJARAT
104	Kamatalav,GUJARAT
105	Vadgam,GUJARAT
106	Khambat,GUJARAT
107	Surwada,GUJARAT
108	Sarod,GUJARAT
109	Kavi,GUJARAT
110	Gangeshwar,GUJARAT
111	Zamdi,GUJARAT
112	Nadiyad,GUJARAT
113	TankariPt,GUJARAT
114	Asharsha,GUJARAT
115	Denwa,GUJARAT
116	Luvara,GUJARAT
117	Mehgam,GUJARAT
118	Dhanturia,GUJARAT
119	Wansnoli,GUJARAT
120	Bhadbhut,GUJARAT
121	OilDerrick,GUJARAT
122	Kanthiajal,GUJARAT
123	Kosamba(MangelVad),GUJARAT
124	Karanj,GUJARAT
125	Mor,GUJARAT
126	Marphalia,GUJARAT
127	Gunav,GUJARAT
128	Bhagal,GUJARAT
129	Hazira,GUJARAT
130	Dumas,GUJARAT

131	Magadalla,GUJARAT
132	Bhimpur,GUJARAT
133	Dipla,GUJARAT
134	WasiBorsi,GUJARAT
135	Dandi,GUJARAT
136	OnjalMachhivad,GUJARAT
137	Krishnapur,GUJARAT
138	Bhat,GUJARAT
139	Mendhar,GUJARAT
140	Dholai,GUJARAT
141	NaniDanti,GUJARAT
142	Kakwadi,GUJARAT
143	BhadeliJagalala,GUJARAT
144	Valsad,GUJARAT
145	Kosamba(Machhivad),GUJARAT
146	MagodDungri,GUJARAT
147	Umarsadi,GUJARAT
148	Kolak,GUJARAT
149	Bhimpor,GUJARAT
150	Daman,GUJARAT
151	Kalai,GUJARAT
152	Fansa,GUJARAT
153	Maroli,GUJARAT
154	Tadgam,GUJARAT
155	Kathalwada,GUJARAT
156	Nargol,GUJARAT
157	Umargam,GUJARAT
158	Zai,MAHARASHTRA

159	Bordi,MAHARASHTRA
160	Gholvad,MAHARASHTRA
161	Narpad/DahanuAgar,MAHARASHTRA
162	Dahanu,MAHARASHTRA
163	KhondhaCr,MAHARASHTRA
164	DhaktiDahanu/Gungawada,MAHARASHTRA
165	Varor,MAHARASHTRA
166	Kambode,MAHARASHTRA
167	Ghivali,MAHARASHTRA
168	TarapurPt,MAHARASHTRA
169	PokharanDandi/Uchheli,MAHARASHTRA
170	Navapur(UcheliCr),MAHARASHTRA
171	Murbe,MAHARASHTRA
172	Satpati(N),MAHARASHTRA
173	Satpati(M/S),MAHARASHTRA
174	Satpati,MAHARASHTRA
175	Shirgaon,MAHARASHTRA
176	Vadarai,MAHARASHTRA
177	Kelwane,MAHARASHTRA
178	Kelwa/KelwaDadar,MAHARASHTRA
179	MahimCr,MAHARASHTRA
180	Danda,MAHARASHTRA
181	Edavan/Kore,MAHARASHTRA
182	Datiware,MAHARASHTRA
183	Arnala,MAHARASHTRA
184	Tembhi,MAHARASHTRA
185	Arnalapada,MAHARASHTRA
186	Rangaon,MAHARASHTRA

187	MulgaonDanda,MAHARASHTRA
188	Vasai(Pachubandar),MAHARASHTRA
189	Khochiwade,MAHARASHTRA
190	Vasai,MAHARASHTRA
191	DongiPoint,MAHARASHTRA
192	Dongri,MAHARASHTRA
193	Uttan,MAHARASHTRA
194	Uttan(Bhatye),MAHARASHTRA
195	Gorai,MAHARASHTRA
196	Manori,MAHARASHTRA
197	Marve/Malvani,MAHARASHTRA
198	YerangalBhati,MAHARASHTRA
199	Madh,MAHARASHTRA
200	Patwadi,MAHARASHTRA
201	Vesava,MAHARASHTRA
202	Varsova,MAHARASHTRA
203	JuhumoraGaon,MAHARASHTRA
204	JuhuTara,MAHARASHTRA
205	KharDanda,MAHARASHTRA
206	UarashiRf,MAHARASHTRA
207	Chimbai,MAHARASHTRA
208	Mahim,MAHARASHTRA
209	Naigaon,MAHARASHTRA
210	Worli,MAHARASHTRA
211	Worli-Lotus,MAHARASHTRA
212	MalabarPort(Mumbai),MAHARASHTRA
213	CuffPared,MAHARASHTRA
214	ColabaPt.(Mumbai),MAHARASHTRA

215	SasoonDock,MAHARASHTRA
216	Kalbadevi,MAHARASHTRA
217	Chinchbunder,MAHARASHTRA
218	NewFerryWharf,MAHARASHTRA
219	Trombay,MAHARASHTRA
220	Mahul,MAHARASHTRA
221	WashiBridgePWDJetty,MAHARASHTRA
222	Vashi(Haveli),MAHARASHTRA
223	Belapur,MAHARASHTRA
224	UlwaMoha,MAHARASHTRA
225	Morave-1,MAHARASHTRA
226	Nhawa,MAHARASHTRA
227	Dighode,MAHARASHTRA
228	Mora,MAHARASHTRA
229	HanumanKoliwada,MAHARASHTRA
230	Uran,MAHARASHTRA
231	Bhalpada,MAHARASHTRA
232	Waredi,MAHARASHTRA
233	DharmtarDhakka,MAHARASHTRA
234	Revas,MAHARASHTRA
235	KaranjaUran,MAHARASHTRA
236	Sasawane,MAHARASHTRA
237	Avas,MAHARASHTRA
238	Navgaon,MAHARASHTRA
239	Thal,MAHARASHTRA
240	VarsoliChalmala,MAHARASHTRA
241	Alibag,MAHARASHTRA
242	Nagaon,MAHARASHTRA

243	Theronda,MAHARASHTRA
244	Rewdanda,MAHARASHTRA
245	Boghar,MAHARASHTRA
246	Salav,MAHARASHTRA
247	Revadanda,MAHARASHTRA
248	Korlai,MAHARASHTRA
249	Borli-Mandla,MAHARASHTRA
250	Mazgaon,MAHARASHTRA
251	Ekdara,MAHARASHTRA
252	Murud,MAHARASHTRA
253	Rajpuri,MAHARASHTRA
254	Agardanda,MAHARASHTRA
255	Mandad,MAHARASHTRA
256	Pabhare,MAHARASHTRA
257	Kharsai,MAHARASHTRA
258	Kudgaon,MAHARASHTRA
259	Dighi(Savari),MAHARASHTRA
260	NanwellPt,MAHARASHTRA
261	Bhardkhol-Diveagar,MAHARASHTRA
262	Diveagar,MAHARASHTRA
263	Shekhadi(Khalchi),MAHARASHTRA
264	Srivardhan,MAHARASHTRA
265	Bagmandla,MAHARASHTRA
266	Veshawi-Bankot,MAHARASHTRA
267	Bankot,MAHARASHTRA
268	Velas,MAHARASHTRA
269	Kelshi,MAHARASHTRA
270	Kelsi,MAHARASHTRA

271	AadeUttambar,MAHARASHTRA
272	Anjarle,MAHARASHTRA
273	Paj,MAHARASHTRA
274	HarnePort,MAHARASHTRA
275	Harne,MAHARASHTRA
276	Murud,MAHARASHTRA
277	Burondi,MAHARASHTRA
278	Kolthare,MAHARASHTRA
279	Dabhol,MAHARASHTRA
280	Veldur/Navanagar/Dhopave,MAHARASHTRA
281	TolkeshwarPt,MAHARASHTRA
282	Anjanvel,MAHARASHTRA
283	Guhagar,MAHARASHTRA
284	Asgoli,MAHARASHTRA
285	Sakhar-Hedvi,MAHARASHTRA
286	Palshet,MAHARASHTRA
287	Budhal,MAHARASHTRA
288	Kondkarul,MAHARASHTRA
289	Welneshwar,MAHARASHTRA
290	Hedvi,MAHARASHTRA
291	Jaigad,MAHARASHTRA
292	SakharJaigad,MAHARASHTRA
293	JaigarhHead,MAHARASHTRA
294	Varawade,MAHARASHTRA
295	Kharviwada,MAHARASHTRA
296	MTDC,MAHARASHTRA
297	Kalabadevi,MAHARASHTRA
298	SakhartarKasarveli,MAHARASHTRA

299	JakiMirya,MAHARASHTRA
300	Mirkarwada,MAHARASHTRA
301	Ratnagiri,MAHARASHTRA
302	Rajiwada,MAHARASHTRA
303	Rajiwada-Kerla,MAHARASHTRA
304	Someshvar,MAHARASHTRA
305	Phansop,MAHARASHTRA
306	Golap-Pawas,MAHARASHTRA
307	Purnagad,MAHARASHTRA
308	Purangad,MAHARASHTRA
309	Sakhri-Natye,MAHARASHTRA
310	Mavlanga,MAHARASHTRA
311	Ambere,MAHARASHTRA
312	Bokarwadi,MAHARASHTRA
313	WadaVetye,MAHARASHTRA
314	Sakharinate,MAHARASHTRA
315	Ambolgad,MAHARASHTRA
316	Ambolgarh,MAHARASHTRA
317	PhansePadawane,MAHARASHTRA
318	Padve,MAHARASHTRA
319	Sakhar-Akshi,MAHARASHTRA
320	WagapurPt,MAHARASHTRA
321	Jambhari,MAHARASHTRA
322	VijayadurgHr,MAHARASHTRA
323	Vijaydurg,MAHARASHTRA
324	Kalamaiwadi,MAHARASHTRA
325	Wadatar/Malai,MAHARASHTRA
326	Anandwadi(Devgad),MAHARASHTRA

327	Devgarh,MAHARASHTRA
328	Mithmumbri/Taramumbari,MAHARASHTRA
329	Kunkeshwar,MAHARASHTRA
330	Kunkeshwar/Katvan,MAHARASHTRA
331	Mithbao,MAHARASHTRA
332	Munge,MAHARASHTRA
333	AchraPt,MAHARASHTRA
334	Achara,MAHARASHTRA
335	Tondavli,MAHARASHTRA
336	Hadi,MAHARASHTRA
337	Sarjekot-MiryaBandh,MAHARASHTRA
338	Talashil,MAHARASHTRA
339	Sarjekot,MAHARASHTRA
340	Dhurivada,MAHARASHTRA
341	Sindhudurg(Malvan),MAHARASHTRA
342	Wayri,MAHARASHTRA
343	Tarkarli/Kalethar,MAHARASHTRA
344	Deobag,MAHARASHTRA
345	Kochara-Nivati,MAHARASHTRA
346	Khavana,MAHARASHTRA
347	Kelus,MAHARASHTRA
348	Mobar-Bhogave,MAHARASHTRA
349	Khanoli-Wayangani,MAHARASHTRA
350	Vengurla,MAHARASHTRA
351	Dabhoswada/Navabag,MAHARASHTRA
352	MuthUbhadanda,MAHARASHTRA
353	Mochemad,MAHARASHTRA
354	Shiroda,MAHARASHTRA

355	Redi,MAHARASHTRA
356	Terekhol,MAHARASHTRA
357	Chapora,GOA
358	Aguada,GOA
359	Panaji(Malim),GOA
360	SanteremPt(Vasco),GOA
361	Majorde,GOA
362	Fatarde,GOA
363	Betul,GOA
364	Cutbona,GOA
365	Talpona,GOA
366	Kolamb,GOA
367	Majali,KARNATAKA
368	Sadasguv garg,KARNATAKA
369	Karwar,KARNATAKA
370	Belekeri,KARNATAKA
371	Gangavali,KARNATAKA
372	Tadri,KARNATAKA
373	KumtaPt,KARNATAKA
374	Dhareshvar,KARNATAKA
375	Karki,KARNATAKA
376	Honavar,KARNATAKA
377	Kasarkod,KARNATAKA
378	Navayatkere,KARNATAKA
379	Mavalli,KARNATAKA
380	Shirali,KARNATAKA
381	Bhatkal,KARNATAKA
382	Baindur,KARNATAKA

383	Navunda,KARNATAKA
384	Gangoli,KARNATAKA
385	Coondapoor(gangoli),KARNATAKA
386	Kota,KARNATAKA
387	Hangarkatta,KARNATAKA
388	Malpe,KARNATAKA
389	Udiyavara,KARNATAKA
390	Kapu,KARNATAKA
391	Mulki,KARNATAKA
392	Hosabettu-Udaivar,KARNATAKA
393	SuratakaiPt,KARNATAKA
394	NewMangalore,KARNATAKA
395	Mangalore,KARNATAKA
396	Kunzhathur,KERALA
397	Manjeshwara,KERALA
398	Uppala,KERALA
399	Arikkadi,KERALA
400	Kumbla,KERALA
401	Koipadi,KERALA
402	Mogral,KERALA
403	Adakathbail,KERALA
404	Kasaragod,KERALA
405	ThalanganJetty,KERALA
406	Kotikulam,KERALA
407	Bekal,KERALA
408	Pallikere,KERALA
409	Chittari,KERALA
410	Ajanoor-N-Bella,KERALA

411	Hosdrug,KERALA
412	Nileswaram,KERALA
413	Thaikadappuram,KERALA
414	BadagaraAzhithala,KERALA
415	CheruvathurFH,KERALA
416	Maniyat,KERALA
417	Kavvayi,KERALA
418	Kunnariyam,KERALA
419	Ettikulam,KERALA
420	KotteKunnu,KERALA
421	Koloth,KERALA
422	Azhikal,KERALA
423	Valapattanam,KERALA
424	Azheecode,KERALA
425	AzheecodeSouth,KERALA
426	Kannur,KERALA
427	AyikkaraFH,KERALA
428	Edakkad,KERALA
429	Muzhuppilangad,KERALA
430	Tellicherry,KERALA
431	NewMahe,KERALA
432	Mahe,KERALA
433	ChombalaFH,KERALA
434	Uralungal,KERALA
435	Nalliyankara,KERALA
436	Badagara,KERALA
437	Puduppanam,KERALA
438	Kottakkal,KERALA

439	Kizhur,KERALA
440	Tikkoti,KERALA
441	Moodady,KERALA
442	Thikkodi(Kodikkal),KERALA
443	KadalurPt,KERALA
444	Quilandy/Koloth(Defunct),KERALA
445	Kollam,KERALA
446	Poilkavu,KERALA
447	Chemancheri,KERALA
448	Kappad,KERALA
449	Elathur,KERALA
450	Elattur,KERALA
451	PuthiyappaFH,KERALA
452	Puthengadi/Paravanna,KERALA
453	Kunduparabu,KERALA
454	Nadakkavu,KERALA
455	Vellayil,KERALA
456	Calicut,KERALA
457	VadakkeKadappuram,KERALA
458	BeyporeFH,KERALA
459	Ramanattukara,KERALA
460	Chaliyam,KERALA
461	Beypore,KERALA
462	Kadalundinagaram,KERALA
463	Parapanangadi,KERALA
464	Parappanangadi,KERALA
465	Thanur,KERALA
466	TanurNagaram,KERALA

467	Paravannangadi,KERALA
468	Vakkad,KERALA
469	Koottayi,KERALA
470	Purattur,KERALA
471	Ponnani,KERALA
472	Veliyangod,KERALA
473	Palappetty,KERALA
474	Attupuram,KERALA
475	Mannalamkunnu,KERALA
476	Vayilattur,KERALA
477	Panchavadi,KERALA
478	Edakazhiyur,KERALA
479	Blangad,KERALA
480	Chavakkad,KERALA
481	Mullassheri,KERALA
482	Vadanappally,KERALA
483	Thalikulam,KERALA
484	Nattika,KERALA
485	Kazhimbram,KERALA
486	Edamuttam,KERALA
487	Palapetty,KERALA
488	Kaipamangalam Vanchipura,KERALA
489	PerinjanamAraattukadavu,KERALA
490	Kulimuttam,KERALA
491	Kara,KERALA
492	Pullut,KERALA
493	Eriyad(Chelarappa),KERALA
494	Kodungallur,KERALA

495	MunambamFH,KERALA
496	Munambam,KERALA
497	Manakodam,KERALA
498	Kuzhuppilly,KERALA
499	Cherai,KERALA
500	Edvankad,KERALA
501	Edavanakad,KERALA
502	Vadakkal,KERALA
503	Puthenkadappuram,KERALA
504	Narakkal,KERALA
505	Nayarambalam,KERALA
506	Malipuram,KERALA
507	Ernakulam,KERALA
508	Murikumpadam,KERALA
509	Kalamukku,KERALA
510	Vypeen,KERALA
511	Valarpadam,KERALA
512	FortKochi,KERALA
513	Kochi,KERALA
514	Chillickal,KERALA
515	Puthenthodu(Kannamali),KERALA
516	Maruvakad,KERALA
517	Chell anum,KERALA
518	Pallithodu,KERALA
519	Palithodu,KERALA
520	Manakkodam,KERALA
521	Thykal,KERALA
522	Arthunkal/Chennavely,KERALA

523	Aratungal,KERALA
524	Chethy,KERALA
525	Kottamkulangara,KERALA
526	Pollethai,KERALA
527	Thumpolly,KERALA
528	Thazhampally,KERALA
529	Alleppey,KERALA
530	AlleppeyBeach,KERALA
531	Kalarkod,KERALA
532	Punnappra,KERALA
533	Punnappira,KERALA
534	Valanjavazhy,KERALA
535	Ambalapuzha,KERALA
536	Purakkad,KERALA
537	Porakad,KERALA
538	Thottappally,KERALA
539	Thrikunnapuzha,KERALA
540	Trikkunnapuzha,KERALA
541	PadiyamkaraTekku,KERALA
542	RamancheriTura,KERALA
543	AzheekalJetty,KERALA
544	Alappattu,KERALA
545	Cheriazheekal,KERALA
546	Kovilhottam,KERALA
547	Chavara,KERALA
548	Puthenthura,KERALA
549	Vettuthura,KERALA
550	Neendakara,KERALA

551	Sakthikulangara,KERALA
552	ThankasseryF.H.,KERALA
553	QuilonPort,KERALA
554	Quilon,KERALA
555	Wadi,KERALA
556	Moothakara,KERALA
557	Pallithottam,KERALA
558	Eravipuram,KERALA
559	Tanni,KERALA
560	Pozhikkara,KERALA
561	Pozhikara,KERALA
562	Paravoor,KERALA
563	Edava,KERALA
564	Kappil,KERALA
565	Edaval,KERALA
566	Vettoor,KERALA
567	Vettur,KERALA
568	Chilakkoor,KERALA
569	Arivalam&Rathikkal,KERALA
570	Mampally,KERALA
571	AnjengoNorth,KERALA
572	Anjengo,KERALA
573	AnjengoSouth,KERALA
574	Poothura,KERALA
575	Perumathura,KERALA
576	Perumatura,KERALA
577	Puthukurichi,KERALA
578	Puthenthoppu,KERALA

579	St.Andrews,KERALA
580	Pallithura,KERALA
581	Thumba,KERALA
582	Valiaveli,KERALA
583	Kochuveli,KERALA
584	Vell,KERALA
585	Vettucaud,KERALA
586	Vettucaud,KERALA
587	Kannanthura,KERALA
588	Kochuthoppu,KERALA
589	Trivandrum,KERALA
590	Valiathura/ValiathuraPier,KERALA
591	Cheriathura,KERALA
592	Bheemapally,KERALA
593	Poonthura,KERALA
594	Tiruvallam,KERALA
595	PanathuraSouth,KERALA
596	Kovalad,KERALA
597	Vizhinjam&Kottapuram,KERALA
598	Vilinjам,KERALA
599	VizhinjamNorth,KERALA
600	Mariyanadu,KERALA
601	Adimalathura,KERALA
602	Puthiathura(Kochupally),KERALA
603	Karichal,KERALA
604	Puthiathura(Chinnamarthandanthura),KERALA
605	Kochuthura,KERALA
606	Poovar,KERALA

607	Puvar,KERALA
608	Neerodi,SOUTHTAMILNADU
609	Marthandamthurai,SOUTHTAMILNADU
610	Vallavilai,SOUTHTAMILNADU
611	Eraviputhenthurai,SOUTHTAMILNADU
612	EzhudesamChinnathurai,SOUTHTAMILNADU
613	Thoothur,SOUTHTAMILNADU
614	Poothurai,SOUTHTAMILNADU
615	Erayammanthura,SOUTHTAMILNADU
616	Erayumanthurai,SOUTHTAMILNADU
617	Thengapattanam,SOUTHTAMILNADU
618	Mulloorthurai,SOUTHTAMILNADU
619	Ramanthurai,SOUTHTAMILNADU
620	Enayamputhenthurai,SOUTHTAMILNADU
621	EnayamChinnathurai,SOUTHTAMILNADU
622	Enayam,SOUTHTAMILNADU
623	Midaalam,SOUTHTAMILNADU
624	Midalam(Naduthurai,SOUTHTAMILNADU
625	Kurumbanai,SOUTHTAMILNADU
626	Vaniyakudi,SOUTHTAMILNADU
627	Kodimunai,SOUTHTAMILNADU
628	Simoncolony,SOUTHTAMILNADU
629	Coalchel,SOUTHTAMILNADU
630	Kottilpadu,SOUTHTAMILNADU
631	Mandaikaduputhoor,SOUTHTAMILNADU
632	Periavilai,SOUTHTAMILNADU
633	Chinnavilai,SOUTHTAMILNADU
634	Melakadiapattinam,SOUTHTAMILNADU

635	Kovalam,SOUTHTAMILNADU
636	Keezhakadiapattinam,SOUTHTAMILNADU
637	Melamuttom,SOUTHTAMILNADU
638	Muttom,SOUTHTAMILNADU
639	Azhikkal,SOUTHTAMILNADU
640	Rajakkamanglam,SOUTHTAMILNADU
641	RajakamangalamThurai,SOUTHTAMILNADU
642	Periyakadu,SOUTHTAMILNADU
643	Pozhikkarai,SOUTHTAMILNADU
644	Kesavanpuhenthurai,SOUTHTAMILNADU
645	Puthenthurai,SOUTHTAMILNADU
646	Pallam,SOUTHTAMILNADU
647	Keezhamanakudi,SOUTHTAMILNADU
648	MelaManakudi,SOUTHTAMILNADU
649	KovalamKanniyakumarai,SOUTHTAMILNADU
650	Puthur,SOUTHTAMILNADU
651	Puthugramam(Vavuthurai,SOUTHTAMILNADU
652	Kanniyakumari,SOUTHTAMILNADU
653	Chinnamuttom,SOUTHTAMILNADU
654	Lipuram,SOUTHTAMILNADU
655	Arockiyapuram,SOUTHTAMILNADU
656	Kuttapuli,SOUTHTAMILNADU
657	Chettikulam,SOUTHTAMILNADU
658	Perumanal,SOUTHTAMILNADU
659	Kudangulam,SOUTHTAMILNADU
660	Idinthakarai,SOUTHTAMILNADU
661	Perumanal,SOUTHTAMILNADU
662	Thommayarapuram(Muddukuli,SOUTHTAMILNADU

663	Koothanguzhi,SOUTHTAMILNADU
664	Kundal,SOUTHTAMILNADU
665	Uvari,SOUTHTAMILNADU
666	Koottappanai,SOUTHTAMILNADU
667	Kooduthalai,SOUTHTAMILNADU
668	Periyathalai,SOUTHTAMILNADU
669	ManappadPt,SOUTHTAMILNADU
670	Kulasekharapattinam,SOUTHTAMILNADU
671	Kallamozhi,SOUTHTAMILNADU
672	Alanthalai,SOUTHTAMILNADU
673	Amalinagar,SOUTHTAMILNADU
674	Jeevanagar,SOUTHTAMILNADU
675	Veerapandiyapattinam,SOUTHTAMILNADU
676	Singhithurai,SOUTHTAMILNADU
677	KombuthuraiMadhakoil,SOUTHTAMILNADU
678	Punnakkayal,SOUTHTAMILNADU
679	Ratchanyapuram,SOUTHTAMILNADU
680	Tuticorin,SOUTHTAMILNADU
681	Pandyan,SOUTHTAMILNADU
682	Iniconagar,SOUTHTAMILNADU
683	Thoothukudi,SOUTHTAMILNADU
684	Therespuram,SOUTHTAMILNADU
685	Thalamuthunagar,SOUTHTAMILNADU
686	Vellapatti,SOUTHTAMILNADU
687	Tharuvaikulam,SOUTHTAMILNADU
688	Pattanamurudur,SOUTHTAMILNADU
689	Veppalodai,SOUTHTAMILNADU
690	Sippikulam,SOUTHTAMILNADU

691	Keezhavaippar,SOUTHTAMILNADU
692	Periasamypuram,SOUTHTAMILNADU
693	Vembar,SOUTHTAMILNADU
694	RojmaNagar,SOUTHTAMILNADU
695	TerkuMookkaiyur,SOUTHTAMILNADU
696	Valinokkam,SOUTHTAMILNADU
697	ChinnaErvadi,SOUTHTAMILNADU
698	Kilakarai,SOUTHTAMILNADU
699	Kalimankundu,SOUTHTAMILNADU
700	Muttupettai,SOUTHTAMILNADU
701	InthiraNagar,SOUTHTAMILNADU
702	Valangapuri,SOUTHTAMILNADU
703	SeeniyappaDharga,SOUTHTAMILNADU
704	Vedhalai,SOUTHTAMILNADU
705	Mandapam(South),SOUTHTAMILNADU
706	Chinnapalam,SOUTHTAMILNADU
707	PambanKunthukal,SOUTHTAMILNADU
708	Mukuntharayarchatram,SOUTHTAMILNADU
709	Dhanushkodi,SOUTHTAMILNADU
710	Verkode,SOUTHTAMILNADU
711	RameshwaramHarbour,SOUTHTAMILNADU
712	Olaikuda,SOUTHTAMILNADU
713	Villundi,SOUTHTAMILNADU
714	Thangachimadam,SOUTHTAMILNADU
715	PambanLightHouse,SOUTHTAMILNADU
716	Mandpam(North),SOUTHTAMILNADU
717	Munaikadu,SOUTHTAMILNADU
718	Atrangarai,SOUTHTAMILNADU

719	Alagankulam,SOUTHTAMILNADU
720	Pudukkudi,SOUTHTAMILNADU
721	Panaikulam,SOUTHTAMILNADU
722	Pudhuvalasaichathiram,SOUTHTAMILNADU
723	Palanivalasai,SOUTHTAMILNADU
724	Mudiveeranpattinam,SOUTHTAMILNADU
725	DevipattinamSouth,SOUTHTAMILNADU
726	Devipattinam,SOUTHTAMILNADU
727	Pathanendal,SOUTHTAMILNADU
728	ThirupalaikudiNorth,SOUTHTAMILNADU
729	Moreppanai,SOUTHTAMILNADU
730	Karankadu,SOUTHTAMILNADU
731	Mullimanai,SOUTHTAMILNADU
732	Pudhupattinam,SOUTHTAMILNADU
733	Tiruvettriur,SOUTHTAMILNADU
734	SoliyakudiHarbour,SOUTHTAMILNADU
735	Nambuthalai,SOUTHTAMILNADU
736	Tondi,SOUTHTAMILNADU
737	M.R.Pattinam,SOUTHTAMILNADU
738	Valasapatinam(P.V.Pattinam,SOUTHTAMILNADU
739	Narendhal,SOUTHTAMILNADU
740	Dhamotharanpattinam,SOUTHTAMILNADU
741	Pasipattinam,SOUTHTAMILNADU
742	Theerthaandathanam,SOUTHTAMILNADU
743	Sundarapandiyanpatta,SOUTHTAMILNADU
744	Muthukuda,SOUTHTAMILNADU
745	R.Pudhupattinam,SOUTHTAMILNADU
746	Gopalapattinam,SOUTHTAMILNADU

747	Muthanenthal,SOUTHTAMILNADU
748	Ayyampattinam,SOUTHTAMILNADU
749	Kottaippattanam,SOUTHTAMILNADU
750	PudhukkudiSouth,SOUTHTAMILNADU
751	PudhukkudiNorth,SOUTHTAMILNADU
752	Anthoniyarpuram,SOUTHTAMILNADU
753	Ponagaram,SOUTHTAMILNADU
754	Manamelkudi,SOUTHTAMILNADU
755	Keelakudiyiruppu,SOUTHTAMILNADU
756	VadakkuAmapattinam,SOUTHTAMILNADU
757	Seetharampattinam,SOUTHTAMILNADU
758	Krishnajipattinam,NORTHTAMILNADU
759	Prathaparamanpattinam,NORTHTAMILNADU
760	Kattumavadi,NORTHTAMILNADU
761	Sembiyanmadevipattinam,NORTHTAMILNADU
762	Ganesapuram,NORTHTAMILNADU
763	Vallavanpattinam,NORTHTAMILNADU
764	Subbamachatram,NORTHTAMILNADU
765	Somanathanpattinam,NORTHTAMILNADU
766	AnnanagarPudhutheru,NORTHTAMILNADU
767	Mandhiripattinam,NORTHTAMILNADU
768	Senthalaivayal,NORTHTAMILNADU
769	Adaikkadevan,NORTHTAMILNADU
770	Sambaipattinam,NORTHTAMILNADU
771	Karanguda,NORTHTAMILNADU
772	Kazhumanguda,NORTHTAMILNADU
773	Sethubavachattram,NORTHTAMILNADU
774	Pillayarthidal,NORTHTAMILNADU

775	Chinnamanai,NORTHTAMILNADU
776	Mallipattinam,NORTHTAMILNADU
777	Puthupattinam,NORTHTAMILNADU
778	Velivayal,NORTHTAMILNADU
779	Kollukadu,NORTHTAMILNADU
780	Keelathottam,NORTHTAMILNADU
781	Eripurakkarai,NORTHTAMILNADU
782	Gandhinagar,NORTHTAMILNADU
783	Karaiyurtheru,NORTHTAMILNADU
784	Maravakadu,NORTHTAMILNADU
785	Thambikottai,NORTHTAMILNADU
786	Muthupet,NORTHTAMILNADU
787	PointCalimer,NORTHTAMILNADU
788	Kodiyakarai,NORTHTAMILNADU
789	Vedaranniyam,NORTHTAMILNADU
790	Arkkattuthurai,NORTHTAMILNADU
791	Topputturai,NORTHTAMILNADU
792	Pushpavanam,NORTHTAMILNADU
793	Kallinodu,NORTHTAMILNADU
794	Vellapallam,NORTHTAMILNADU
795	Vanavanmadevi,NORTHTAMILNADU
796	Vettaikaranrippu,NORTHTAMILNADU
797	Vilunthamavadi,NORTHTAMILNADU
798	Kameshwaram,NORTHTAMILNADU
799	Seruthur,NORTHTAMILNADU
800	Velanganni,NORTHTAMILNADU
801	Akkaraipettai,NORTHTAMILNADU
802	NagapattinamHarbour,NORTHTAMILNADU

803	NambiyarNagar,NORTHTAMILNADU
804	Samanthanpettai,NORTHTAMILNADU
805	Nagore,NORTHTAMILNADU
806	Karikal,NORTHTAMILNADU
807	Pattinacherry,NORTHTAMILNADU
808	Chinnorpettai,NORTHTAMILNADU
809	Chandrappadi,NORTHTAMILNADU
810	Tharangampadi,NORTHTAMILNADU
811	Kuttiyandiyur,NORTHTAMILNADU
812	Bommayanpettai(Vellakoil,NORTHTAMILNADU
813	Perumalpettai,NORTHTAMILNADU
814	Tranquebar,NORTHTAMILNADU
815	Pudhupetai,NORTHTAMILNADU
816	Thalampetai,NORTHTAMILNADU
817	Chinnangudi,NORTHTAMILNADU
818	Kaverippattinam,NORTHTAMILNADU
819	Vanagiri,NORTHTAMILNADU
820	Poombuhar,NORTHTAMILNADU
821	Pudukuppam,NORTHTAMILNADU
822	Madathukuppam,NORTHTAMILNADU
823	Naickerkuppam,NORTHTAMILNADU
824	Chavadikuppam,NORTHTAMILNADU
825	Keezhamoovarkarai,NORTHTAMILNADU
826	Tirumullaivasal,NORTHTAMILNADU
827	Thoduvai,NORTHTAMILNADU
828	MudasalodaiVillage,NORTHTAMILNADU
829	Koozhayar,NORTHTAMILNADU
830	Kottaimedu,NORTHTAMILNADU

831	Madavamedu,NORTHTAMILNADU
832	Pazhayar,NORTHTAMILNADU
833	Killai,NORTHTAMILNADU
834	M.G.R.Thittu,NORTHTAMILNADU
835	Mudasalodai,NORTHTAMILNADU
836	Parangipettai,NORTHTAMILNADU
837	Portonovo,NORTHTAMILNADU
838	CPudupettai,NORTHTAMILNADU
839	Pudukuppam,NORTHTAMILNADU
840	Veerampatinam,NORTHTAMILNADU
841	Samanthapettai,NORTHTAMILNADU
842	Samiyarpettai,NORTHTAMILNADU
843	Kumarapettai,NORTHTAMILNADU
844	Periyakuppam,NORTHTAMILNADU
845	Chithirapettai,NORTHTAMILNADU
846	Rajappettai,NORTHTAMILNADU
847	Sothikuppam,NORTHTAMILNADU
848	CuddaloreHarbour,NORTHTAMILNADU
849	Sonaankuppam,NORTHTAMILNADU
850	Devanampattinam,NORTHTAMILNADU
851	Thazhanguda,NORTHTAMILNADU
852	Moorthipudukuppam,NORTHTAMILNADU
853	Panithittu,NORTHTAMILNADU
854	Narambai,NORTHTAMILNADU
855	Nallavadu,NORTHTAMILNADU
856	P.Pudukuppam,NORTHTAMILNADU
857	ChinnaVeerampattinam,NORTHTAMILNADU
858	Veerampattinam,NORTHTAMILNADU

859	Thengaithittu,NORTHTAMILNADU
860	Pondicherry,NORTHTAMILNADU
861	Vaithikuppam,NORTHTAMILNADU
862	SolainagarNorth,NORTHTAMILNADU
863	Sodhanaikuppam,NORTHTAMILNADU
864	Nadukuppam,NORTHTAMILNADU
865	Thandhirayankuppam,NORTHTAMILNADU
866	Chinnamudaliarchavadi,NORTHTAMILNADU
867	Bommaiyarpalyam,NORTHTAMILNADU
868	Pillaichavadi,NORTHTAMILNADU
869	PeriyaKalapet,NORTHTAMILNADU
870	Ganapathichettikulam,NORTHTAMILNADU
871	Pudhukuppam,NORTHTAMILNADU
872	Anichankuppam,NORTHTAMILNADU
873	Mudaliarkuppam,NORTHTAMILNADU
874	Nochikuppam,NORTHTAMILNADU
875	KoonimeduKuppam,NORTHTAMILNADU
876	Chettinagar,NORTHTAMILNADU
877	Anumandhaikuppam,NORTHTAMILNADU
878	Komuttichavadikuppam,NORTHTAMILNADU
879	MandavaiPudukuppam,NORTHTAMILNADU
880	Ekkiyarkuppam,NORTHTAMILNADU
881	Marakkanam,NORTHTAMILNADU
882	Kaippanikuppam,NORTHTAMILNADU
883	Vasavankuppam,NORTHTAMILNADU
884	Muttukaduazhagankuppam,NORTHTAMILNADU
885	Alambaraikuppam,NORTHTAMILNADU
886	Kadappakam,NORTHTAMILNADU

887	PanaiyurPeriyaKuppam,NORTHTAMILNADU
888	PanaiyurChinnakuppam,NORTHTAMILNADU
889	MudaliyarKuppam,NORTHTAMILNADU
890	Cheyyur,NORTHTAMILNADU
891	Paramankeni,NORTHTAMILNADU
892	PerunThuravuKuppam,NORTHTAMILNADU
893	Pudhunadukuppam,NORTHTAMILNADU
894	Pazhayanadukuppam,NORTHTAMILNADU
895	AngalammanKuppam,NORTHTAMILNADU
896	KadaloreAliKuppam,NORTHTAMILNADU
897	PadalorePeriyaKuppam,NORTHTAMILNADU
898	KadaloreChinnaKuppam,NORTHTAMILNADU
899	Uyyalikuppam,NORTHTAMILNADU
900	Sadras,NORTHTAMILNADU
901	Pudupattinam,NORTHTAMILNADU
902	Sathurangapattinam,NORTHTAMILNADU
903	Umarikuppam,NORTHTAMILNADU
904	Meyyurkuppam,NORTHTAMILNADU
905	Kokilamedu,NORTHTAMILNADU
906	Venpursham,NORTHTAMILNADU
907	Mamallapuram,NORTHTAMILNADU
908	Mahabalipuram,NORTHTAMILNADU
909	Devaneri,NORTHTAMILNADU
910	Salavankuppam,NORTHTAMILNADU
911	PuduNemeliKuppam,NORTHTAMILNADU
912	Pattipulam,NORTHTAMILNADU
913	Soolerikattukuppam,NORTHTAMILNADU
914	Nemmelikuppam,NORTHTAMILNADU

915	Pudhukalpakkam,NORTHTAMILNADU
916	Chemacherry,NORTHTAMILNADU
917	Covelong(Kovalam),NORTHTAMILNADU
918	EgatturKarikattukuppam,NORTHTAMILNADU
919	KanathurReddyKuppam,NORTHTAMILNADU
920	Kanathur,NORTHTAMILNADU
921	Nainarkuppam,NORTHTAMILNADU
922	Panaiyurkuppam,NORTHTAMILNADU
923	Injampakkam,NORTHTAMILNADU
924	Chinnandikuppam,NORTHTAMILNADU
925	PeriyaNeelankarai,NORTHTAMILNADU
926	ChinnaNeelankarai,NORTHTAMILNADU
927	Palavakkam,NORTHTAMILNADU
928	Kottivakkam,NORTHTAMILNADU
929	Thiruvanmiyur,NORTHTAMILNADU
930	Odaikuppam,NORTHTAMILNADU
931	Orurkuppam,NORTHTAMILNADU
932	Srinivasapuram,NORTHTAMILNADU
933	Mullimanagar,NORTHTAMILNADU
934	Pattinampakkam,NORTHTAMILNADU
935	Nochikuppam,NORTHTAMILNADU
936	Cathedral(Chennai),NORTHTAMILNADU
937	Nadukuppam,NORTHTAMILNADU
938	Ayothikuppam,NORTHTAMILNADU
939	Mattankuppam,NORTHTAMILNADU
940	Chennai,NORTHTAMILNADU
941	LakshmipuramOdaikuppam,NORTHTAMILNADU
942	Royapuram,NORTHTAMILNADU

943	Ondikuppam,NORTHTAMILNADU
944	NallathanneerOdaikuppam,NORTHTAMILNADU
945	Thiruchinnankuppam,NORTHTAMILNADU
946	KasiviswanatharkoilKuppam,NORTHTAMILNADU
947	Palagaithottikuppam,NORTHTAMILNADU
948	Kasikoilkuppam,NORTHTAMILNADU
949	Ernavoorkuppam,NORTHTAMILNADU
950	KathivakkamChinnakuppam,NORTHTAMILNADU
951	KathivakkamPeriakuppam,NORTHTAMILNADU
952	Thazankuppam,NORTHTAMILNADU
953	EnnoreMugathuvarakuppan,NORTHTAMILNADU
954	Ennorekuppam,NORTHTAMILNADU
955	Pulicat,NORTHTAMILNADU
956	Coromandel,NORTHTAMILNADU
957	Annamalaichery,SOUTHANDHRAPRADESH
958	Periyamangodu,SOUTHANDHRAPRADESH
959	Arambakkam,SOUTHANDHRAPRADESH
960	Pulinjerikuppam,SOUTHANDHRAPRADESH
961	Durgarajupatnam,SOUTHANDHRAPRADESH
962	Kondur,SOUTHANDHRAPRADESH
963	Arkatapalem,SOUTHANDHRAPRADESH
964	Kottapatnam,SOUTHANDHRAPRADESH
965	Tammenapatnam,SOUTHANDHRAPRADESH
966	Krishnapatnam(Upputeru),SOUTHANDHRAPRADESH
967	Krishnapatnam,SOUTHANDHRAPRADESH
968	Pathapalem,SOUTHANDHRAPRADESH
969	Maipadu,SOUTHANDHRAPRADESH
970	Pattapupalem,SOUTHANDHRAPRADESH

971	Utukuru,SOUTHANDHRAPRADESH
972	Isakapalle,SOUTHANDHRAPRADESH
973	Zuvvaladinne,SOUTHANDHRAPRADESH
974	Vatturupallepalem,SOUTHANDHRAPRADESH
975	Ramayapatnam,SOUTHANDHRAPRADESH
976	Chakicherla,SOUTHANDHRAPRADESH
977	Itamukkala,SOUTHANDHRAPRADESH
978	Allurukottapatnam,SOUTHANDHRAPRADESH
979	Adavipallipalem,SOUTHANDHRAPRADESH
980	Vetapalem,SOUTHANDHRAPRADESH
981	Vadarevu,SOUTHANDHRAPRADESH
982	BestapalamBapatla,SOUTHANDHRAPRADESH
983	Suryalanka,SOUTHANDHRAPRADESH
984	Nizampatnam,SOUTHANDHRAPRADESH
985	Nachugunta,SOUTHANDHRAPRADESH
986	Etimoga,SOUTHANDHRAPRADESH
987	Sorlagondi,SOUTHANDHRAPRADESH
988	Palakayatippa,SOUTHANDHRAPRADESH
989	Machilipatnam,SOUTHANDHRAPRADESH
990	Giripuram,SOUTHANDHRAPRADESH
991	PeddaGollapalem,SOUTHANDHRAPRADESH
992	Antarvedi,SOUTHANDHRAPRADESH
993	NarasapurPt,SOUTHANDHRAPRADESH
994	Bandamurlanka,SOUTHANDHRAPRADESH
995	Odalarevu,SOUTHANDHRAPRADESH
996	KothapalemLH,NORTHANDHRAPRADESH
997	Bhairavapalem,NORTHANDHRAPRADESH
998	Kakinada,NORTHANDHRAPRADESH

999	Vakalapudi,NORTHANDHRAPRADESH
1000	Uppada,NORTHANDHRAPRADESH
1001	Konapapeta,NORTHANDHRAPRADESH
1002	Perumallapuram,NORTHANDHRAPRADESH
1003	Palmanpeta,NORTHANDHRAPRADESH
1004	Danavaipeta,NORTHANDHRAPRADESH
1005	Pentakota,NORTHANDHRAPRADESH
1006	RevuPolavaram,NORTHANDHRAPRADESH
1007	Rambilli,NORTHANDHRAPRADESH
1008	Pudimadaka,NORTHANDHRAPRADESH
1009	Visakhapatnam,NORTHANDHRAPRADESH
1010	Bhimunipatnam,NORTHANDHRAPRADESH
1011	Mukkam,NORTHANDHRAPRADESH
1012	Konada,NORTHANDHRAPRADESH
1013	Chintapalli,NORTHANDHRAPRADESH
1014	Ramachandrapuram,NORTHANDHRAPRADESH
1015	Allivalasa,NORTHANDHRAPRADESH
1016	Kuppili,NORTHANDHRAPRADESH
1017	Srikurmam,NORTHANDHRAPRADESH
1018	Bandaruvanipeta,NORTHANDHRAPRADESH
1019	Kalingapatnam,NORTHANDHRAPRADESH
1020	Guppidiapeta,NORTHANDHRAPRADESH
1021	Jagannadhapuram,NORTHANDHRAPRADESH
1022	Maruvada,NORTHANDHRAPRADESH
1023	KottaNaupada,NORTHANDHRAPRADESH
1024	Bavanapadu,NORTHANDHRAPRADESH
1025	Nuvvalarevu,NORTHANDHRAPRADESH
1026	Metturu,NORTHANDHRAPRADESH

1027	Ganguvada,NORTHANDHRAPRADESH
1028	Baruva,NORTHANDHRAPRADESH
1029	Iduvanipalem,NORTHANDHRAPRADESH
1030	Kaviti,NORTHANDHRAPRADESH
1031	Anantaraipur,NORTHANDHRAPRADESH
1032	KeutaSonapur,NORTHANDHRAPRADESH
1033	PatiSonapur,NORTHANDHRAPRADESH
1034	Sonnapurampeta,NORTHANDHRAPRADESH
1035	Rameyapatna,ODISHA
1036	Ekasingi,ODISHA
1037	Markondi,ODISHA
1038	NewGolabandha,ODISHA
1039	Gopalpur-IFH,ODISHA
1040	Golabandha,ODISHA
1041	OldBuxipetta,ODISHA
1042	NewBaxipalli,ODISHA
1043	Gopalpur,ODISHA
1044	Garyampetta,ODISHA
1045	SanaAryapalli,ODISHA
1046	BadaNuagaon,ODISHA
1047	SanaNuagaon,ODISHA
1048	Ganjam,ODISHA
1049	Kantiagada(Podampeta),ODISHA
1050	Prayagi,ODISHA
1051	Ramalanka,ODISHA
1052	Bajarkot,ODISHA
1053	Khirisahi,ODISHA
1054	Satpara,ODISHA

1055	Siandi,ODISHA
1056	Arakhakud,ODISHA
1057	PuriNorth,ODISHA
1058	PuriSouth,ODISHA
1059	Puri,ODISHA
1060	Penthakata,ODISHA
1061	Bangor,ODISHA
1062	Chandrabhaga,ODISHA
1063	Kajalpatia(Khandiapatna),ODISHA
1064	Tondahar,ODISHA
1065	Anakona&Dalukani,ODISHA
1066	Astaranga,ODISHA
1067	Balipantala,ODISHA
1068	Sudhikeswar(Talia),ODISHA
1069	NuagarhFH(Astaranga),ODISHA
1070	Nuagar,ODISHA
1071	Bandar,ODISHA
1072	Magarkhia,ODISHA
1073	Saharabedi,ODISHA
1074	Kaliakana,ODISHA
1075	Noliasahi,ODISHA
1076	Nuagan,ODISHA
1077	Jamuka,ODISHA
1078	ParadeepFH,ODISHA
1079	Paradip,ODISHA
1080	Atharabanki,ODISHA
1081	Chumuhani,ODISHA
1082	Kharnasi,ODISHA

1083	FalsePoint,ODISHA
1084	Kharinasi,ODISHA
1085	Jambu,ODISHA
1086	Jmboo,ODISHA
1087	Barunie,ODISHA
1088	Sasanpeta(Tantiapal),ODISHA
1089	Gajarajpur,ODISHA
1090	Hariharpur,ODISHA
1091	Satbhaya,ODISHA
1092	Ahirajpur,ODISHA
1093	Talchua,ODISHA
1094	Dhamra,ODISHA
1095	Chandinipal,ODISHA
1096	DhamaraFH,ODISHA
1097	Kaithakhola,ODISHA
1098	Karanjamal,ODISHA
1099	Baincha,ODISHA
1100	Karanpalli,ODISHA
1101	Kasianala,ODISHA
1102	ChudamaniBoatJetty,ODISHA
1103	Chudamani,ODISHA
1104	Panchubisa,ODISHA
1105	Godaisagar,ODISHA
1106	Janipur,ODISHA
1107	Mahisali,ODISHA
1108	Chandipur,ODISHA
1109	Balaramgadi(ChandipurFLC),ODISHA
1110	Balaramgadi,ODISHA

1111	Bahabalapur(KasafalSouth),ODISHA
1112	Bahabalpur,ODISHA
1113	Bindha,ODISHA
1114	Hansakura,ODISHA
1115	Kasafala,ODISHA
1116	Choumukh,ODISHA
1117	Dagara,ODISHA
1118	Kirtania,ODISHA
1119	Chandeneswar,ODISHA
1120	Talasari,ODISHA
1121	DighaMohanaF.F.T.A.(Digha),WESTBENGAL
1122	Shankarpur,WESTBENGAL
1123	SankarpurF.F.T.A.(Sankarpur),WESTBENGAL
1124	TajpurJaldha,WESTBENGAL
1125	Digha,WESTBENGAL
1126	Junput,WESTBENGAL
1127	Petuaghat(Dariapur),WESTBENGAL
1128	LightHouseGangasagarGP, WESTBENGAL
1129	DiamondHarbourJettyGhatinfrontofSDOOffice, WESTBENGAL
1130	DiamondHarbour, WESTBENGAL
1131	Kakdwip, WESTBENGAL
1132	Namkhana, WESTBENGAL
1133	Sagar, WESTBENGAL
1134	Frasergunje, WESTBENGAL
1135	FrezerganjFH, WESTBENGAL
1136	LothianIsland, WESTBENGAL
1137	Landfall, ANDAMAN
1138	Narcondam, ANDAMAN

1139	Diglipur,ANDAMAN
1140	LaxmipurDiglipur,ANDAMAN
1141	ArealBayDiglipur,ANDAMAN
1142	Durgapur,ANDAMAN
1143	KalipurDiglipur,ANDAMAN
1144	KalighatDiglipur,ANDAMAN
1145	Pokadera,ANDAMAN
1146	Mayabunderproper,ANDAMAN
1147	WebiMayabunder,ANDAMAN
1148	TugapurMayabunder,ANDAMAN
1149	Betapur(RRO),ANDAMAN
1150	RangatBay,ANDAMAN
1151	KaushalyaNagar,ANDAMAN
1152	Dashratpur,ANDAMAN
1153	Yerrata,ANDAMAN
1154	LongIsland,ANDAMAN
1155	ElphinstoneHr,ANDAMAN
1156	Uttara,ANDAMAN
1157	Oralkatcha,ANDAMAN
1158	Barren,ANDAMAN
1159	Havelock,ANDAMAN
1160	MiddleStrait,ANDAMAN
1161	ShoalBay,ANDAMAN
1162	Wrightmyo,ANDAMAN
1163	NeilIsland,ANDAMAN
1164	PortBlair,ANDAMAN
1165	Bambooflat,ANDAMAN
1166	Haddo,ANDAMAN

1167	HopeTown,ANDAMAN
1168	Dunduspoint,ANDAMAN
1169	PhoenixBay,ANDAMAN
1170	Junglighat,ANDAMAN
1171	Dignabad,ANDAMAN
1172	MtHaughton,ANDAMAN
1173	Lohabarrack,ANDAMAN
1174	Chouldari,ANDAMAN
1175	Wandoor,ANDAMAN
1176	Chidiyatapu,ANDAMAN
1177	Rutland,ANDAMAN
1178	CinqueIsland,ANDAMAN
1179	Tambe-e-bul,ANDAMAN
1180	VivekanandpurLittleAndaman,ANDAMAN
1181	RamaKrishnaPur,ANDAMAN
1182	Kwate-tu-Kwage,ANDAMAN
1183	HarminderBay,ANDAMAN
1184	Machidera(Hutbay),ANDAMAN
1185	Benyaboi,ANDAMAN
1186	Tula,ANDAMAN
1187	Tochangeou,ANDAMAN
1188	KeatingPt(CarNicobar),NICOBAR
1189	MusCarNicobar,NICOBAR
1190	Sawai(CarNicobar),NICOBAR
1191	TeetopCarNicobar,NICOBAR
1192	PassaCarNicobar,NICOBAR
1193	Arrong(CarNicobar),NICOBAR
1194	MalaccaCarNicobar,NICOBAR

1195	BattiMalv,NICOBAR
1196	Chowra,NICOBAR
1197	Aoang,NICOBAR
1198	Laksi,NICOBAR
1199	Bampoka,NICOBAR
1200	Kai-Hoa,NICOBAR
1201	Takaroach,NICOBAR
1202	TrinketNancowry,NICOBAR
1203	KamortaNancowry,NICOBAR
1204	HituiNancowry,NICOBAR
1205	ChampionNancowryIsland,NICOBAR
1206	BalubastiNancowryIsland,NICOBAR
1207	AttabiakNancowryIsland,NICOBAR
1208	TapongNancowryIsland,NICOBAR
1209	CapeConnaught,NICOBAR
1210	KapangaKatchall,NICOBAR
1211	KatchalEastBay,NICOBAR
1212	Jansin,NICOBAR
1213	KatchalWestBay,NICOBAR
1214	SombreroPt,NICOBAR
1215	PuloPatia,NICOBAR
1216	KabraPt,NICOBAR
1217	Tenlaa,NICOBAR
1218	RosenPt,NICOBAR
1219	CampbellBay,NICOBAR
1220	VijoyNagar,NICOBAR
1221	IndiraPt,NICOBAR
1222	Kokeon,NICOBAR

1223	PuloKunji,NICOBAR
1224	Minicoy,LAKSHADWEEP
1225	KalpeniI,LAKSHADWEEP
1226	AndrothI,LAKSHADWEEP
1227	Valiykara,LAKSHADWEEP
1228	Suheli,LAKSHADWEEP
1229	Cheriyakara,LAKSHADWEEP
1230	KavarattiI,LAKSHADWEEP
1231	AgattiI,LAKSHADWEEP
1232	Tinnakara,LAKSHADWEEP
1233	BangaramI,LAKSHADWEEP
1234	Perumalparreef,LAKSHADWEEP
1235	AminiI,LAKSHADWEEP
1236	KadmathI,LAKSHADWEEP
1237	Kiltani,LAKSHADWEEP
1238	ChetlatI,LAKSHADWEEP
1239	BitraI,LAKSHADWEEP
1240	Byramgore,LAKSHADWEEP
1241	Cheriyapanireef,LAKSHADWEEP
1242	Valiyapanireef,LAKSHADWEEP

ANNEXURE 4- INCOIS Tsunami warning message

The message structure for tsunami warning message is as given below:

Table 1: Sub frame data structure

1	9	26	27	28	30	31	37	257	263	287
TLM	TOWC	RESERVED				MESSAGE ID	DATA	Satellite ID	CRC	Tail
8 BITS	17 BITS	5 BITS				6 BITS	220 BITS	6 BITS	24 BITS	6 BITS

The message format of the 220 bits of Tsunami warning data is as given below.

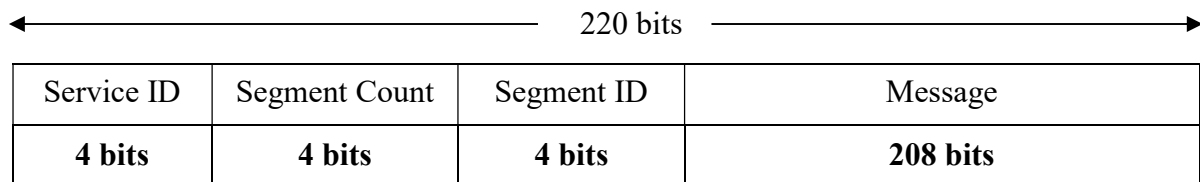


Figure 1: Tsunami warning alert structure (220 bits)

Message (208 bits):

Service ID	Seg count	Seg ID	Total bytes	Bulletin advisory No	Date	Threat Status	Time	Magnitude	Lat.	Long.	Spare	Destination
4 bits	4 bits	4 bits	5 bits	8 bits	16 bits	3 bits	11 bits	7 bits	20 bits	21 bits	5 bits	112 bits

Figure 2: Tsunami warning message format (208 bits)

The services IDs for different types of Tsunami warning messages are defined as follows:

Table 2: Service ID and Type

Service Name	Service Type	Service ID
Tsunami	Type 1: Earthquake information	0001
	Type 2: Potential Tsunami	0010
	Type 3: Confirmed Tsunami	0011
	Type 4: Final Bulletin	0100

Segment Count represents no of segments (ranging from 1 to 10) in the complete message and segment ID represents the number of the current segment (ranging from 1 to 10).

Tsunami Alert Message

The Tsunami alert / warning message broadcasted by INCOIS contains information regarding Bulletin advisory number, Date & Time, Threat status, Magnitude, Lat-Long, probable destinations etc.

The details of message structure are given below.

Total bytes in the block: 5 bits, to signify number of total bytes in each block

Date: DDMMYY

Table 3: Date Format

DD/MM/YY	Binary Code
Dates (1-31)	5 bits
Months(1-12)	4 bits
Year(up 99)	7 Bits

Threat status: 3 Bits to specify whether it is general Earth quake information, Warning, Watch, All clear etc;

Table 4: Threat status

Threat status	Binary code
Earth Quake info	000
No Threat	001
Alert	010
Watch	011
Warning	100
All Clear	101

Time: HHMM

Table 5: Time Format

Time	Bits
Hour(0-24)	5
Minutes(0-60)	6

Magnitude:

Maximum 10.0M : 7 Bits

Latitude and Longitude

Latitude: 0-90 degree, converted to Seconds and represented in 19bits with additional 1 bit as MSB to denote N as '1' and '0' as South.

Hence 2.4 N in 20 bits is represented as 10000010000111000000

Longitude: 0-180 degree is converted to seconds and represented in 20bits , with one additional bit in MSB to represent E as '1' and W as '0' . 93.07 E in 21 bits represented as 101010001110011001100

	Decimal	Deg Min Sec	Seconds	Binary form	No of Bits
Latitude	2.4 N	2° 23' 60"	8640	10000010000111000000	20
Longitude	93.07 E	93° 4' 12"	335052	101010001110011001100	21

Destination: Each State/District is represented as 8 Bits Binary code and it is mapped at the receiver. In a single segment, the no of destinations are 14 Nos. If more it follows in the next segment with the same frame structure.

States

State Name	Hex code
ANDAMAN & NICOBAR	01
ANDHRA PRADESH	02
GOA	03
GUJARAT	04
KARNATAKA	05
KERALA	06
LAKSHADWEEP	07
MAHARASHTRA	08
ORISSA	09
TAMIL NADU	0A
WEST BENGAL	0B

Districts

KOMATRA ISLAND	0C
KATCHAL ISLAND	0D
NORTH SENTINEL ISLAND	0E
BARREN ISLAND	0F
RANGATH BAY	10
FLAT ISLAND	11
LITTLE ANDAMAN	12
WEST ISLAND	13
LANDFALL ISLAND	14
DIGLIPUR	15
PORT BLAIR	16
CAR NICOBAR	17
INDIRA POINT	18
HAVELOCK	19
NARCONDAM ISLAND	1A
NELLORE	1B
PRAKASAM	1C
KRISHNA	1D
EAST GODAVARI	1E
VISHAKHAPATNAM	1F
SRIKAKULAM	20
GUNTUR	21
NORTH GOA	22
JUNGADH	23
BHAVNAGAR	24
AMRELI	25
VALSAD	26
NAVSARI	27
PORBANDAR	28
JAMNAGAR	29
KACHCHH	2A
UTTAR KANNAND	2B
UDUPI	2C

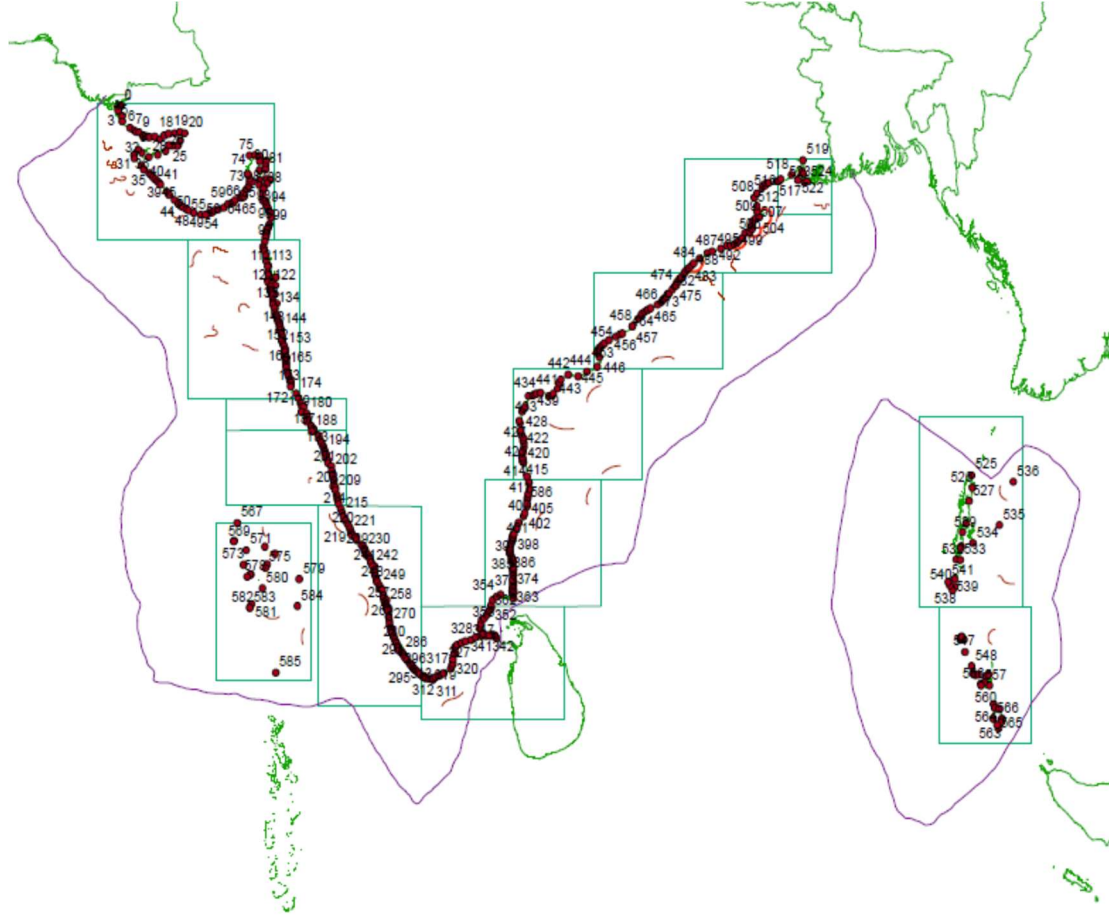
DAKSHIN KANNAD	2D
ALAPPUZHA	2E
ERNAKULAM	2F
THRISSUR	30
KOZHIKODE	31
KASARAGOD	32
THIRUVANANTHAPURAM	33
KOLLAM	34
MALAPPURAM	35
KANNUR	36
MINICOY	37
AGATTI	38
ANDROTH	39
AMINI	3A
KAVARATTI	3B
RATNAGIRI	3C
SINDHUDURG	3D
THANE	3E
RAIGARH	3F
GREATER BOMBAY	40
GANJAM	41
BALESHWAR	42
BHADRAK	43
KENDRAPARA	44
JAGATSINGHPUR	45
PURI	46
KANNIYAKUMARI	47
THOOTHUKUDI	48
NAGAPATTINAM	49
CUDDALORE	4A
KANCHEEPURAM	4B
RAMANANTHAPURAM	4C
CHENNAI	4D
THIRUVALLUR	4E

PUDUCHERRY	4F
VILLUPURAM	50
KARAIKAL	51
NAGAPATTINAM	52
THANJAVUR	53
TIRUNELVELI KATTABO	54
SOUTH 24 PARGANAS	55
KOMATRA ISLAND	56

There should be a provision to add or delete or update these district/zones to suit future needs of Tsunami Service.

ANNEXURE 5- INCOIS Potential fishing zone message

The Potential Fishing Zone message contains the following information: Latitude, Longitude, Ref ID & Step ID. The no.of zones can be maximum upto 800 zones. The sample forecast area definition given by INCOIS is as below:



IRNSS message structure (220 bits) is as given below:

1	9	26	27	28	30	31	37	257	263	287
TLM	TOWC	RESERVED				MESSAGE ID	DATA	Satellite ID	CRC	Tail
8 BITS	17 BITS	5 BITS				6 BITS	220 BITS	6 BITS	24 BITS	6 BITS

The message ID allocated for PFZ message is '20'. Total message length can vary from 220 bits (1 segment) to 2200bits (10 segments). The transmission time will vary 12 sec to 120 sec (2 minutes) respectively.

Each location's Latitude & Longitude can be represented bits 12 bits each with two digit decimal point (Lat variation 29.00N to 4.00S & Long variation 61.00-98.80). Each location with this option can be represented by 12+12 = 24bits. Out of 800 PFZ locations the 9 locations can be served in single 220 bit message segment. The data structure for this is as given below:

The data structure for this is as given below:

← 220 bits →						
Tuna/ Non Tuna	Last Subframe for PFZ	spare	Location 1 Information	Location 2 Information		Location 9 Information
1 bits	1 bits	2 bits	24 bits (12 bits lat + 12 bits long)	24 bits (12 bits lat + 12 bits long)		24 bits (12 bits lat + 12 bits long)

Assuming 10 segment message total 90 PFZ locations can be served in total 120 sec (2 minutes). Again the same message ID data will be overwritten and transmitted for another 10 segments. Total transmission for all 800 Zones may take ≈60 minutes including message formatting delay, ground segment delay etc.

Decoding Scheme:

- Decoding the subframe data completely.
- Tuna fish locations will be indicated by 1 in "Tuna/ Non tuna" field. In this field 1 indicates all the mentioned 9 locations are indication for tuna fish. Check for Tuna/ non Tuna field and indicate the location of tuna and non tuna to fisherman
- Last Subframe for PFZ represented by "1", otherwise this will be "0". Last subframe may not be having 9 locations; In the last frame for a particular location if all 24 bits (Lat, Long) are zeroes , consider as no further location data.
- Spare bit is reserve for future use.
- Convert lat information given in binary to decimal (4 digit). Place the decimal point after second digit. Subtract 4 from the value. E.g. Lat 00.00 will represent -04.00 i.e. 4 S. This will cover from 4S to 29N and beyond.

- Convert long information given in binary to decimal (4 digit). Place the decimal point after second digit. Add 61 from the value. E.g. Long 01.00 will represent 62.00 E. This will cover from 61E to 98.8E and beyond.
- Overlapping the lat long information on to a graphical map by App.
- Identifying the fisherman's device location and showing the PFZ location the receiver by App.



ACRONYMS

BPSK	Binary Phase Shift Keying
CDMA	Code Division Multiple Access
CRC	Cyclic Redundancy Check
dB	Decibel
FEC	Forward Error Correction
ICD	Interface Control Document
IRNSS	Indian Regional Navigation Satellite System
ISRO	Indian Space Research Organization
MCPS	Mega Chips Per Seconds
MLFSR	Maximum Length Feedback Shift Register
NavIC	Navigation Using Indian Constellation
PRN	Pseudo Random Noise
RHCP	Right Hand Circularly Polarization
SIS	Signa-in-Space
SPS	Standard Positioning Service
SV	Space Vehicle
TLM	Telemetry
TOW	Time of Week
TOWC	Time of Week Count