



National Database for Emergency Management (NDEM)

V Bhanumurthy
bhanumurthy_v@nrsc.gov.in

**UN/India Workshop on the Use of EO Data for Disaster Management and
Risk Reduction: Asia Experience
8-10 March, 2016, Hyderabad**

Disasters

NATURAL DISASTER

1. Floods (CWC)
2. Cyclones (IMD)
3. Forest fires (MoEF)
4. Landslides (GSI)
5. Drought (MoA)
6. Spread of epidemics (MoH)
7. Earthquakes (IMD)
8. Tsunami (MEoS)
9. Severe windstorms (IMD)
10. Snow or ice storms (IMD)
11. Severe extremes in (IMD)
temperature (cold or hot) etc

Early Warning available (3)

Type of Emergency

Evacuation, Rescue & Relief
Medical,
Contingency Operations

TECHNOLOGICAL DISASTER / MAN-MADE

1. Fire (State Govt)
2. Explosion ((State Govt, MHA)
3. Building collapse (State Govt)
4. Train/ vehicle accidents (IR, State Govt)
5. Failure of dams (CWC)
6. Major structural failure (State Govt)
7. Spills of flammable liquids (MoEF)
8. Accidental release of toxic substances (MoEF)
9. Deliberate release of hazardous biological
agents, or toxic chemicals (MoEF)
10. Terrorist activities (MHA, State Govt)
11. Riots (MHA, State Govt)
12. Mining accidents (MoM)
13. Loss of electrical power (State Govt)
14. Loss of water supply (State Govt)
15. Loss of communications (State Govt, DoT)
16. Nuclear / Radiological disaster (Nuclear attack,
accidents in nuclear facilities (DoE)

Disaster/Emergency Management Concept

Event Reporting

Real-time Field Info

Situation Assessment

Resource Identification

Mobilization

Nodal Depts
+

Commn Channels
+

Database integration, Visualization
Decision Making, Actions



NDEM Mobile Data Locator - Microsoft Internet Explorer

NDEM Mobile Data Locator

pan tool is active now

Decision Support System

1. Built-in core & Static data
2. Live data reception
3. Scenario visualization
4. Probable options to deal
5. Choosing best option
6. Means to implement
7. Broadcasting capability

Core Database
Facilities database
Dynamic database
Thematic Database

Best Layer: River Bank | Load Layer | Flood Map: 14/67/2010 | Load Layer | Satellite: AWFS | Load Layer

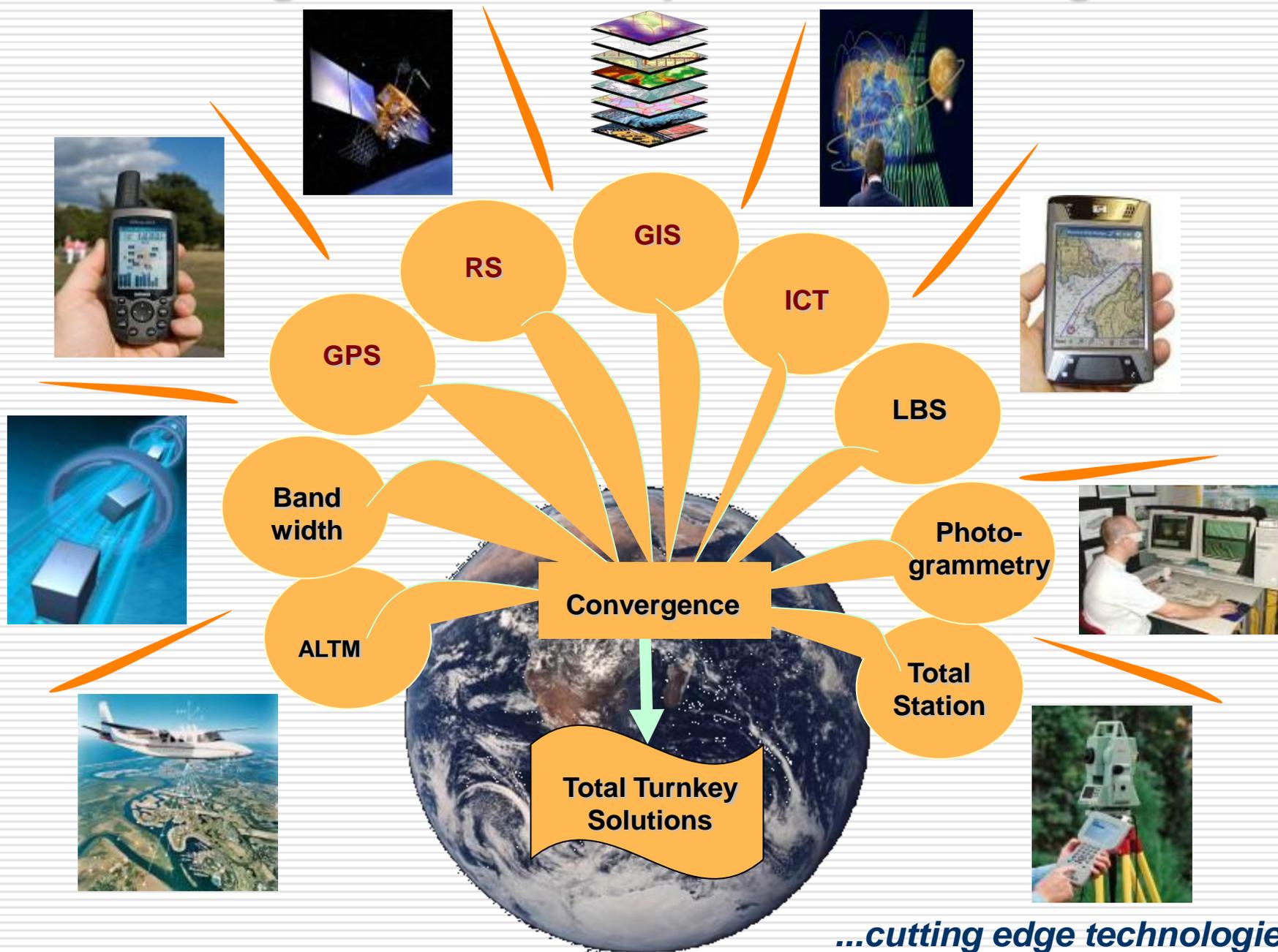
Scale = 1 : 100K
79.6718, 17.3006

Type of Emergency
Evacuation,
Rescue & Relief
Medical,
Contingency Operations

Type of Emergency Plans Required

Evacuation:	<i>Safe guarding against impact</i> Means of Transport, availability, applicability (Air / land / water) Shelter identification, optimal path (path restrictions, traffic density)
Relief Mgmt:	<i>Taking care of victims</i> Air Dropping of essential items, essential needs at shelter (sanitation, lighting etc), survival needs (food, water, medicines etc), relief distribution, clearing debris / ways/ bodies), restoration etc
Medical:	<i>Life support</i>
Limited Causality	Means of Transport, availability, applicability (Air / land / water) Selection of health services (hospital / diagnostics etc)
Mass Causality	Availability & Applicability of mobile health services, Means of Transport, availability, applicability (Air / land / water) Selection of health services (hospital / diagnostics etc), categorization of patients, informing public about status of activities etc
Contingency : Operations	<i>To limit / minimize the extent of impact</i> Event Specific to the event, follow the individual Ministries SoPs for emergency management

Convergence of Geospatial Technologies



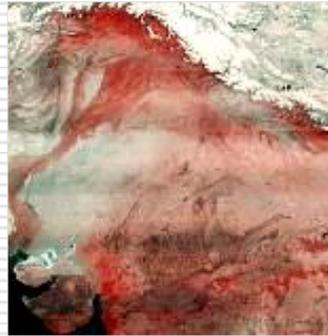
...cutting edge technologies

Space Observations

High temporal resolution
Large swath



Medium temporal resolution
Large swath



Low temporal resolution
Limited swath



Low temporal resolution
Very limited swath



Low spatial resolution
Global level information

Coarse spatial resolution
Regional level information

Medium spatial resolution
Local level information

High spatial resolution
Location specific information

Global to Local

Depends on

- **Phase of the disaster**
- **Type of the disaster**
- **Extent and severity**

....

NDEM Project Conception

Multi-Scale Database Organization: 50k – national level; 10k – 350 MHP dists; 2k – 5 megacities

Appropriate Decision Support Tools Development: for assisting decision maker in dealing with emergency situations

DR site: Mirroring at MHA, New Delhi

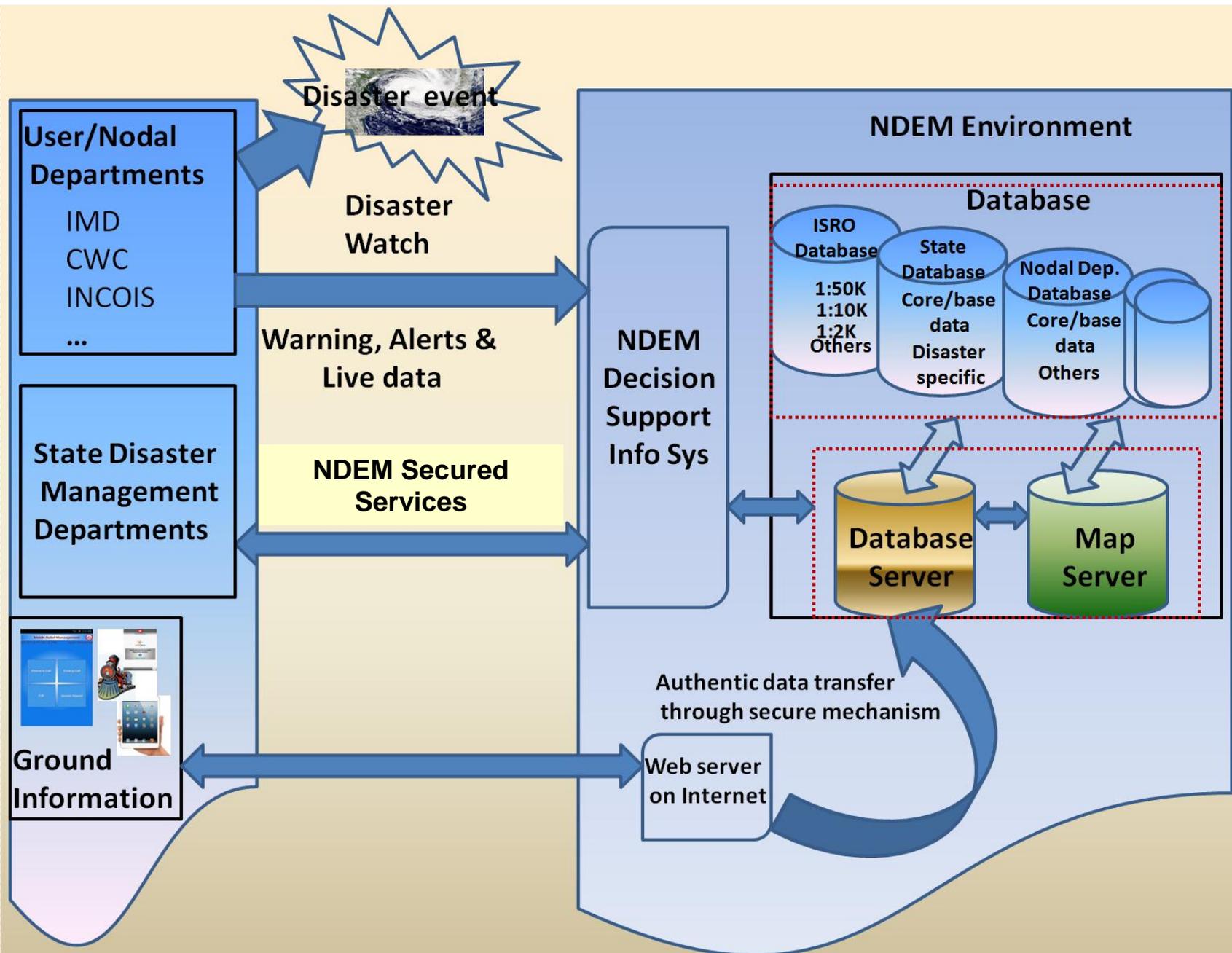
Nodal Ministry: Ministry of Home Affairs

Implementation Strategy: Multi- Institutional Participation, Central / State Depts. Concerned

Implementation Strategy: Multi- Institutional Participation, Central / State Depts. Concerned

Status: Operational

NDEM Data Flow



NDEM Portal Features

News and Alerts

Disaster dashboard highlights current disaster news, disaster warning from available sources, relief manager contact number and portal updates

Active Disaster Details

Shows the details of current disaster occurred with area, geo location on GIS viewer and also available along with reports

Restricted Data Access

For visualization of very high resolution aerial/satellite data for selected disaster situations, restricted access with OTP authentication .

IDRN and Health Database

India Disaster Resource Network (IDRN) is useful for relief & rescue operations. It has been also integrated with health database.

Interaction Portal

Dynamic chat amongst relief/disaster manager for exchange of information and support

Multi State Viewer

Information on Disaster products of each state, highlighting latest disaster event occurred in the State, Access to all State database

Historical Disaster Data

Historical disaster data for better understanding of the present situation for further analysis.

Reports and Maps

Comprehensive outputs of the disaster event in the form of reports and maps for utilization by disaster managers

Mobile Application

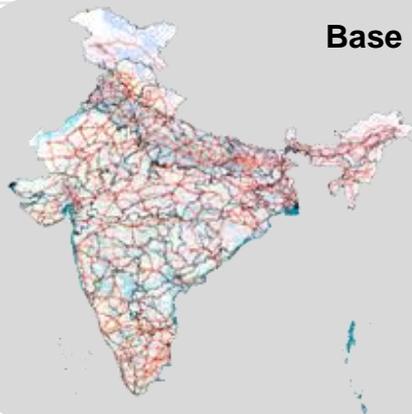
A suite for collecting field data for relief management activities, incident reporting etc.,

Content Management System

Managing the NDEM administrative activities such as uploading layer, add or delete user, managing event, monitoring the logs and etc.

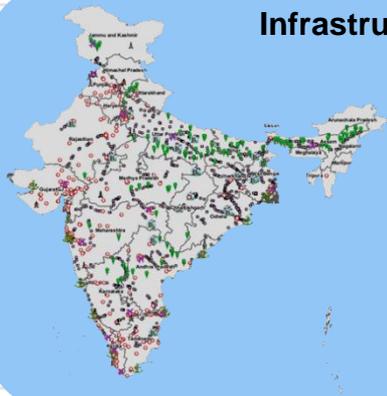
NDEM Database Details

Base Layers



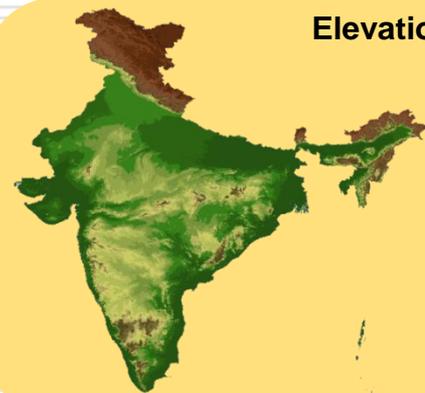
- Admin Boundaries 
- Road 
- Railway Line 
- Drainage 
- Canal 
- Coastline 

Infrastructure Layers



- Point of Interest 
- Airport 
- Ports 
- Gauge Stations 
- Railway Stations 
- Thermal Plant 
- Nuclear Plant 
- Hydro 
- Wind Power 
- Hospitals 

Elevation Map



-  0-100
 -  101-200
 -  201-300
 -  301-400
 -  401-500
 -  500-600
 -  601-700
 -  701-800
 -  801-900
 -  901-1500
 -  1501-3000
 -  3001-4500
 -  4501-6000
 -  6001-8000
- In Meters

State wise at 1:50000 scale

S. No	Layer
BASE LAYERS	
1	State
2	District
3	Taluk
4	Village Boundaries
5	Road
6	Rail
7	Drainage
8	Canal
9	Coastline
10	River
THEMATIC LAYERS	
11	Land use / land cover
12	Settlement-area
13	Mining Area
14	Surface water bodies
15	Forest Boundaries
16	Settlement-Point
17	Slope
18	Meteorological data(Point)
INFRASTRUCTURE	
19	Railway stations
20	Hospitals
21	Airports
22	Helipads
23	Ports
24	River Gauge Stations
25	Ponds & Tanks
26	Dams(Point)
27	Dams(Area)or Reservoir
28	Power plants
29	Point of Interest
DISASTER SPECIFIC LAYERS	
30	Flood
31	Cyclone
32	Forest Fire
33	Earthquake
34	Drought
35	Landslide

RASTER

36	LISS IV MX
37	Carto2 DEM
38	ACE2 DEM
39	SRTM DEM

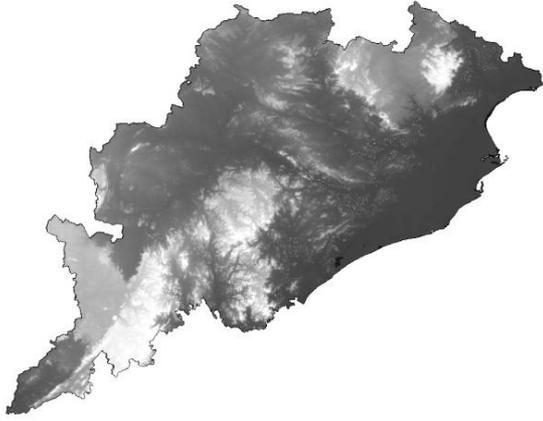
District wise at 1:10000 scale

S. No	Layer
BASE LAYERS	
1	Administrative Boundary
2	Drainage
3	Road
4	Rail
THEMATIC LAYERS	
5	Land cover
6	Surface water body
7	Settlements
INFRASTRUCTURE	
8	Infrastructure
9	Transport nodes
RASTER	
10	Cartosat – 1(2.5m Ortho)
11	Cartosat -1 + LISSIV MX NCC (2.5m)

City-wise at 1:2000 scale

S. No.	Content
1	Urban Specific Database <ul style="list-style-type: none"> • Hyderabad • Bangalore • Delhi • Mumbai • Kolkata
2	Very High Resolution Satellite Imagery (better than 1m)

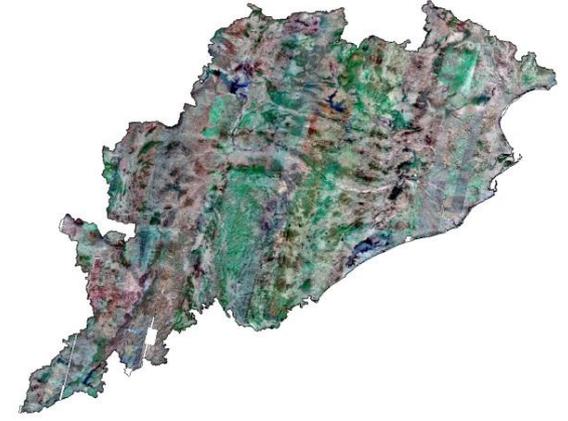
NDEM Raster Database



CARTO2 DEM-30M



IRS LISS IV - 5.8M



CARTOSAT 1 + LISS IV 2.5M



CARTOSAT 1- 2.5M

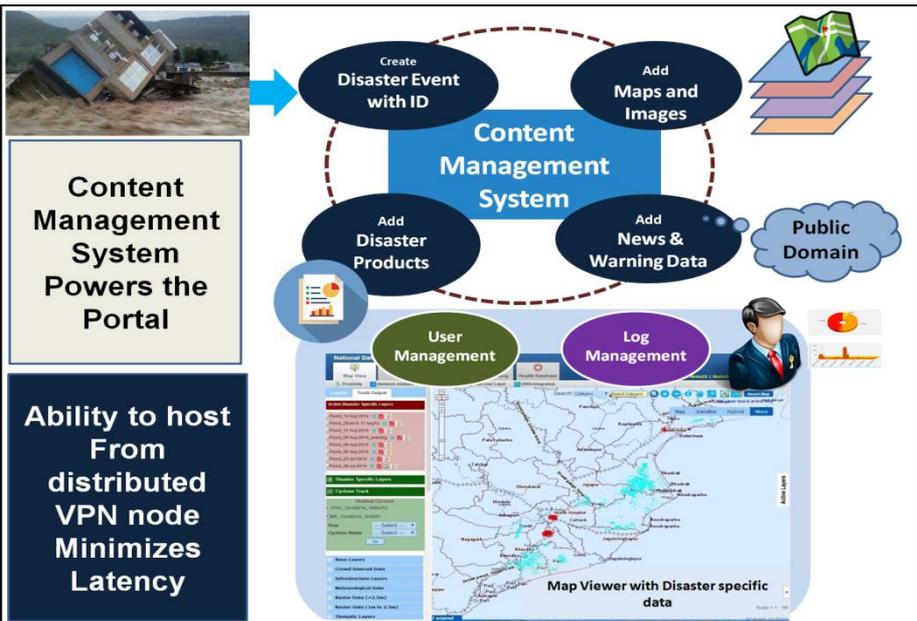


CARTOSAT 2 + LISS IV - 1M



**Very High resolution data < 1M
(from foreign satellites)**

NDEM DSS Tools & Portal Management



Proximity Tool

Layers Tools Output

Proximity Query Result

Print Report

Point of Interest Name
Kathagada Nursery
Shiva Mandir
Indian Gas Cylinder Godown
Regional Institute for Training
Women Hostel Regional Institute for Training
Gents Hostel Regional Institute for Training
Petrol Pump
Kalinga Weavers Cooperative Spinning Mills Ltd
Bus Stand
East India Hotel
Basanta Dhaba
Mahisapat Shiva Temple
DRIT Shopping Complex
Indira Gandhi Field

Proximity Tool

Select Deselect No Click on the Map OR Type lat/long in the area provided

Latitude: 20.49759

Longitude: 85.55966

Buffer distance (in KM): 20 (in KM)

Select Feature: Point of Interest

Go

Map Satellite Hybrid More

Legend

Live Status of NDEM Repository and Services

Disaster Events : State-wise

Andhra Pradesh:12	Kerala:1
Chhattisgarh:6	Madhya Pradesh:8
Haryana:2	Maharashtra:7
Karnataka:1	Manipur:1
Bihar:24	Odisha:33
Jammu Kashmir:4	Assam:40
Haryana:6	Uttaranchal:2
Gujarat:14	Rajasthan:6
Delhi:8	
West Bengal:4	

Disaster Events : Year-wise

2001:12	2013:35
2002:2	2012:18
1999:3	2011:18
2007:15	2010:15
2008:15	2009:15
2011:15	2014:28
2012:15	2015:25

Data Repository: Geo-Spatial

Vector 10K Town Layers:90	Infrastructure Layers:315
Raster Data (>2.5m):102	
Thematic Layers:164	
Raster Data (1m to 2.5m):62	Meteorological Data:108
Crowd Sourced Data:1	Topographic Layers:35
Base Layers:1	Vector 2K Layers:1
	Vector 10K District Layers:32
	Hazard Data:1

Data Repository: Disaster Specific

Drought:78	Flood:198
Rail Accidents:5	
Forest Fire:10	
Cyclone:20	

User Access: Log Report

10/28-7/102	10/28-7/102	17/27-1/25/22	10/28-5/13	10/28-7/102	17/27-1/25/22	17/27-1/25/22
0	500	1000	1500	0	500	1000

Data Repository: Disaster Products

Other Pdf:75	JPEG:77
Report:162	MAP:192

Network Analysis Tool

Layers Tools Output

Network Analysis Query Result (Dijkstra Shortest path Algorithm)

Routes Name	Total Route Length (Kilom)
"State Highway", "National Highway", "Private Road", "District Highway", "Aghag Main Road", "Bhapur Main Road", "Other Highway", "Redhakhol Main Road", "Banks Main Road", "Aghagsh Road"	254.71647

Network Analysis Tool

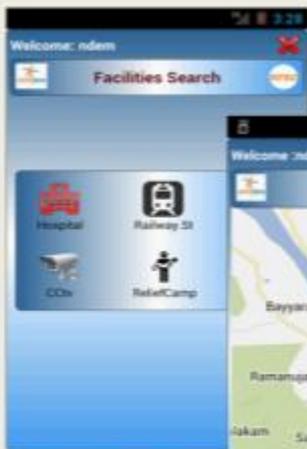
Select a point by clicking on the road network and set as Source point

Then select another point by clicking on the road network and set as Target point

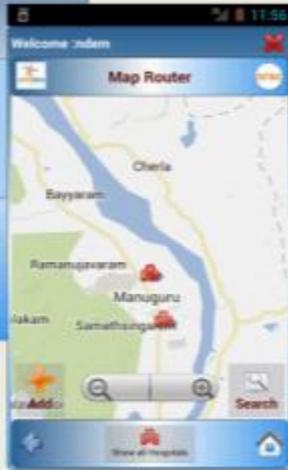
Map Satellite Hybrid More

Scale = 1 : 1M

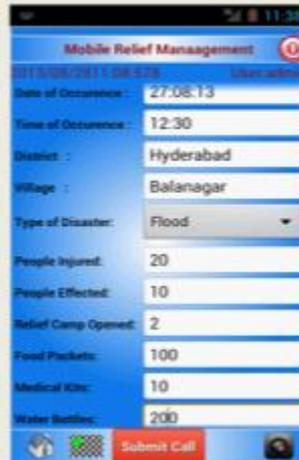
Mobile Apps



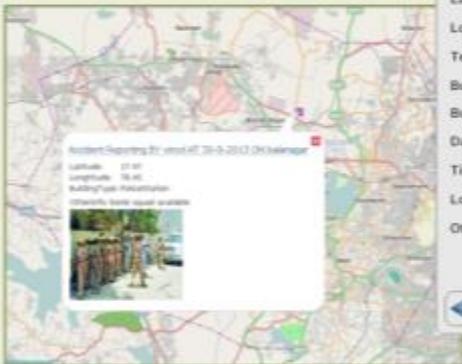
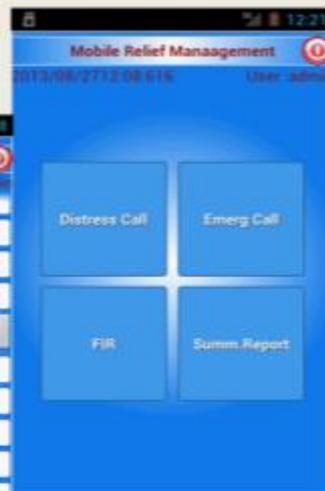
Attribute Collection



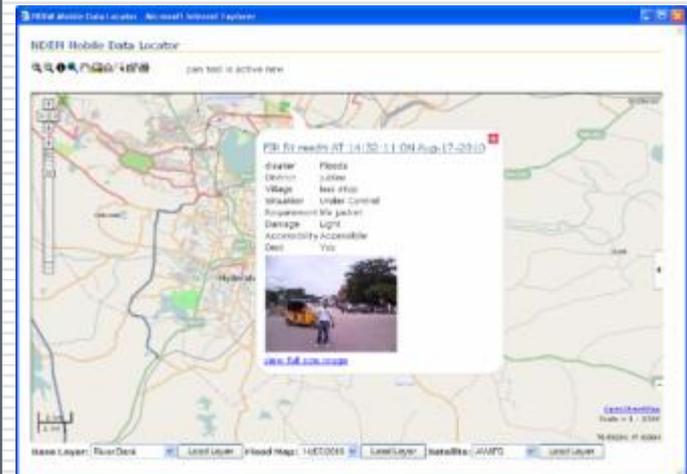
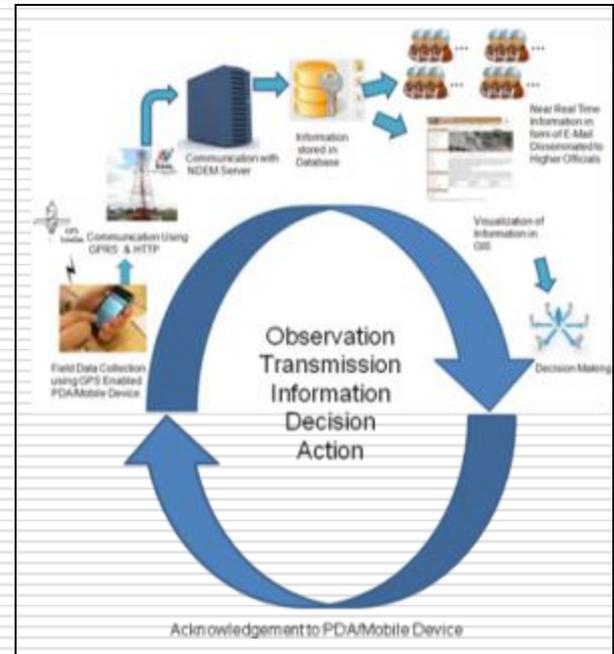
Mobile Applications



Relief Management



Geo Tagging of Emergency Facility





National Database for Emergency Management (NDEM)

- Map View
- Report
- Interaction Portal
- NDEM Catalog
- Health Database
- Mobile Apps
- Disaster Statistics

Welcome Guest

- Login
- Statewise Geospatial
- Andaman And Nicobar Islands
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh
- Chandigarh
- Daman Diu
- Delhi
- Dadra And Nagar Haveli
- Goa
- Gujarat
- Himachal Pradesh
- Haryana
- Jharkhand
- Jammu Kashmir
- Karnataka
- Kerala
- Maharashtra

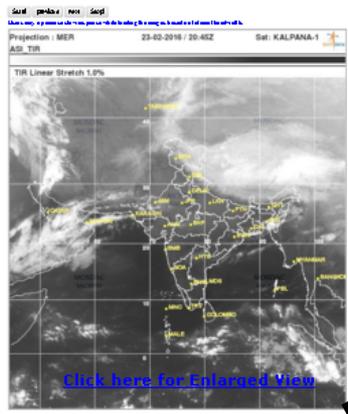
DashBoard

- Flood
- Cyclone
- Forest Fire
- Earthquake
- Landslide
- Tsunami
- Rail Accident

Android Based Mobile Application Downloads: [NDEM Relief](#) NEW / [DataCollection](#) NEW / [Geotagging](#) NEW / [User Manual](#) NEW

Disaster Statistics Report NEW Username: Password: Login

- MOSDAC Cloud
- TRMM Rainfall
- IMD Rainfall
- CWC Water Levels
- Live News
- Historical News



[Click here for Enlarged View](#)

29-02-2016 : 0 Disaster News reported today

Portal Updated as on : 29 February 2016

To get NDEM Login Credential, Please fill [User Authorization \(Annuxure-1\)](#) Form and send it to ndem_admin@nrsc.gov.in

Home Page

an tool is active

Meghalay

Tripura

Mizoram

Active Layers

Scale = 1 : 11M

National Database for Emergency Management (NDEM)

Pending Message(13) | Mails(0) | Welcome MHA | Logout

Map View Report Interaction Portal NDEM Catalog Health Database Mobile Apps Disaster Statistics

Proximity Network Analysis Layer Analysis Add your Layer IDRN Integration Print

Layers Tools Output Jammu and Kashmir Search: Category Select Category Reset Map Pan tool is active

State Data & Services Detail

Disaster Statistics Report **NEW**

Andaman And Nikobar G.L: 35 D.S.L: 0 Mail: 0	Andhra Pradesh G.L: 52 D.S.L: 38 Mail: 0	Arunachal Pradesh G.L: 41 D.S.L: 0 Mail: 0	Assam G.L: 54 D.S.L: 47 Mail: 0	Bihar G.L: 50 D.S.L: 51 Mail: 8	Chandigarh G.L: 35 D.S.L: 0 Mail: 0
Chhattisgarh G.L: 44 D.S.L: 6 Mail: 0	Dadra And Nagar Haveli G.L: 36 D.S.L: 0 Mail: 0	Daman Diu G.L: 36 D.S.L: 0 Mail: 0	Delhi G.L: 41 D.S.L: 2 Mail: 0	Goa G.L: 45 D.S.L: 0 Mail: 1	Gujarat G.L: 64 D.S.L: 11 Mail: 0
Haryana G.L: 50 D.S.L: 6 Mail: 0	Himachal Pradesh G.L: 47 D.S.L: 0 Mail: 0	Jammu And Kashmir G.L: 57 D.S.L: 25 Mail: 0	Jharkhand G.L: 44 D.S.L: 6 Mail: 0	Karnataka G.L: 49 D.S.L: 11 Mail: 0	Kerala G.L: 47 D.S.L: 1 Mail: 0
Lakshdweep G.L: 29 D.S.L: 0 Mail: 0	Madhya Pradesh G.L: 45 D.S.L: 8 Mail: 0	Maharashtra G.L: 60 D.S.L: 12 Mail: 0	Manipur G.L: 42 D.S.L: 3 Mail: 0	Meghalaya G.L: 41 D.S.L: 1 Mail: 0	Mizoram G.L: 40 D.S.L: 0 Mail: 0
Nagaland G.L: 40 D.S.L: 3 Mail: 0	Odisha G.L: 54 D.S.L: 28 Mail: 6	Pondicherry G.L: 39 D.S.L: 0 Mail: 0	Punjab G.L: 47 D.S.L: 1 Mail: 1	Rajasthan G.L: 42 D.S.L: 6 Mail: 0	Sikkim G.L: 42 D.S.L: 0 Mail: 0
Tamilnadu G.L: 47 D.S.L: 19 Mail: 0	Telangana G.L: 45 D.S.L: 0 Mail: 0	Tripura G.L: 45 D.S.L: 0 Mail: 0	Uttar Pradesh G.L: 51 D.S.L: 25 Mail: 0	Uttarakhand G.L: 47 D.S.L: 1 Mail: 0	West Bengal G.L: 48 D.S.L: 12 Mail: 0

VPN Active State (15) VPN Available State (20) VPN Unavailable State (16) Active Disaster State (1)

G.L: Geospatial Layer D.S.L: Disaster Specific Layer

* Select the State Checkbox to view Geo-spatial Layers in Left Panel. Click on State Image to view State page.



National Database for Emergency Management (NDEM)

Pending Message(13) | Mails(0) | Welcome MHA | Logout

- Map View
- Report
- Interaction Portal
- NDEM Catalog
- Health Database
- Mobile Apps
- Disaster Statistics

- Proximity
- Network Analysis
- Layer Analysis
- Add your Layer
- IDRN Integration
- Print

- State Legend
- Taluk Legend
- Village Legend
- Gauge Station Legend
- Drainage Legend
- Railway Line Legend
- Surface Water Legend
- District Legend

- ### Infrastructure Layers
- Dam Legend
 - Railway Station Legend
 - Hospital Legend
 - Airport Legend
 - Power Plant Legend
 - Ponds & tanks Legend
 - Helipad Legend
 - Reservoir Legend

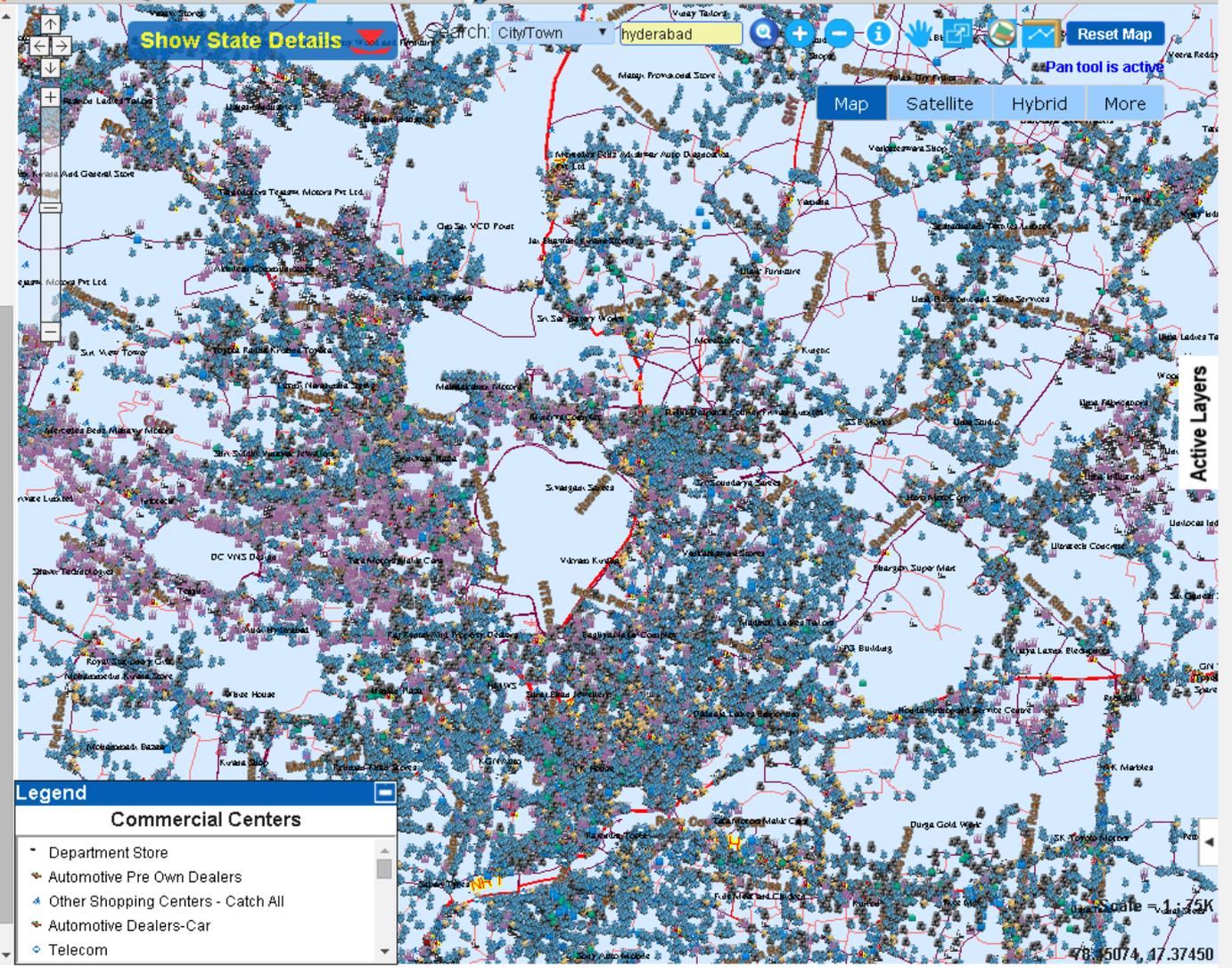
- ### Point of Interest
- Warehouses Legend
 - Commercial Centers Legend
 - Community Centres Legend
 - Financial Services Legend
 - Health Services Legend
 - Hotels Legend
 - Recreation Legend
 - Residential Places Legend
 - Tourist Spots Legend
 - Transportation Services Legend

- ### Raster Data (>2.5m)
- CARTOSAT-DEM 30m
 - ACE-2 DEM 30m
 - IRS LISS-IV 5.8m

- ### Raster Data (1m to 2.5m)
- CARTOSAT-1 2.5m
 - LISS-IV MX & CARTOSAT-2 Merged 1m
 - LISS-IV MX & CARTOSAT-1 Merged 2.5m

- ### Thematic Layers
- Land Use Land Cover Legend
 - Forest Area Legend
 - Hydrology Legend
 - Temperature Legend
 - Rainfall Legend
 - Settlement Point Legend
 - Settlement Area Legend
 - Mining Area Legend
 - Slope Legend

Vector 2K Layers



Legend

Commercial Centers

- Department Store
- Automotive Pre Own Dealers
- Other Shopping Centers - Catch All
- Automotive Dealers-Car
- Telecom



NDEM Products & Services during Tamilnadu floods

Gmail | National Database for Emergency Management (NDEM) | ndmcc.nrsc.gov.in/central/viewer.php

Apps | IRCTC Online Pass... | Google | HDFC Login | WELCOME TO BEA... | Downloads | Moto G - Transferri... | HPGAS | YouTube | BSNL Portal | Value... | Other bookmarks

National Database for Emergency Management (NDEM)

Home | Pending Message(40) | Mails(0) | Welcome Tamilnadu | Logout

Map View | Report | Interaction Portal | NDEM Catalog | Health Database | Mobile Apps

Proximity | Network Analysis | Layer Analysis | Add your Layer | IDRN Integration | **Tamilnadu Population in Flood Inundation Areas - An Experimental Product NEW**

Layers | Tools Output

- Taluk Wise Rainfall Maps NEW
- Current Disaster Specific Layers

1:50,000 Scale

Base Layers

<input type="checkbox"/> Canal	Legend
<input type="checkbox"/> Coastline	Legend
<input checked="" type="checkbox"/> District	Legend
<input type="checkbox"/> Drainage	Legend
<input type="checkbox"/> Railway Line	Legend
<input type="checkbox"/> River	Legend
<input type="checkbox"/> Road	Legend
<input type="checkbox"/> Surface Water	Legend
<input checked="" type="checkbox"/> Taluk	Legend
<input checked="" type="checkbox"/> Village	Legend

Thematic Layers

Infrastructure Layers

Point of Interest

Topographic Layers

Raster Data (>2.5m)

Historical Disaster Specific Layers

Map | Satellite | Hybrid | More

Current Updates

- Tamilnadu Flood_08 Dec 2015 Layer Updated on 09/12/2015 NEW
- Tamilnadu Flood_07 Dec 2015 Layer Updated on 07/12/2015 NEW
- Tamilnadu Flood Recession Layer Updated on 07/12/2015 NEW
- Tamilnadu Flood_06 Dec 2015 Layer Updated on 06/12/2015 NEW

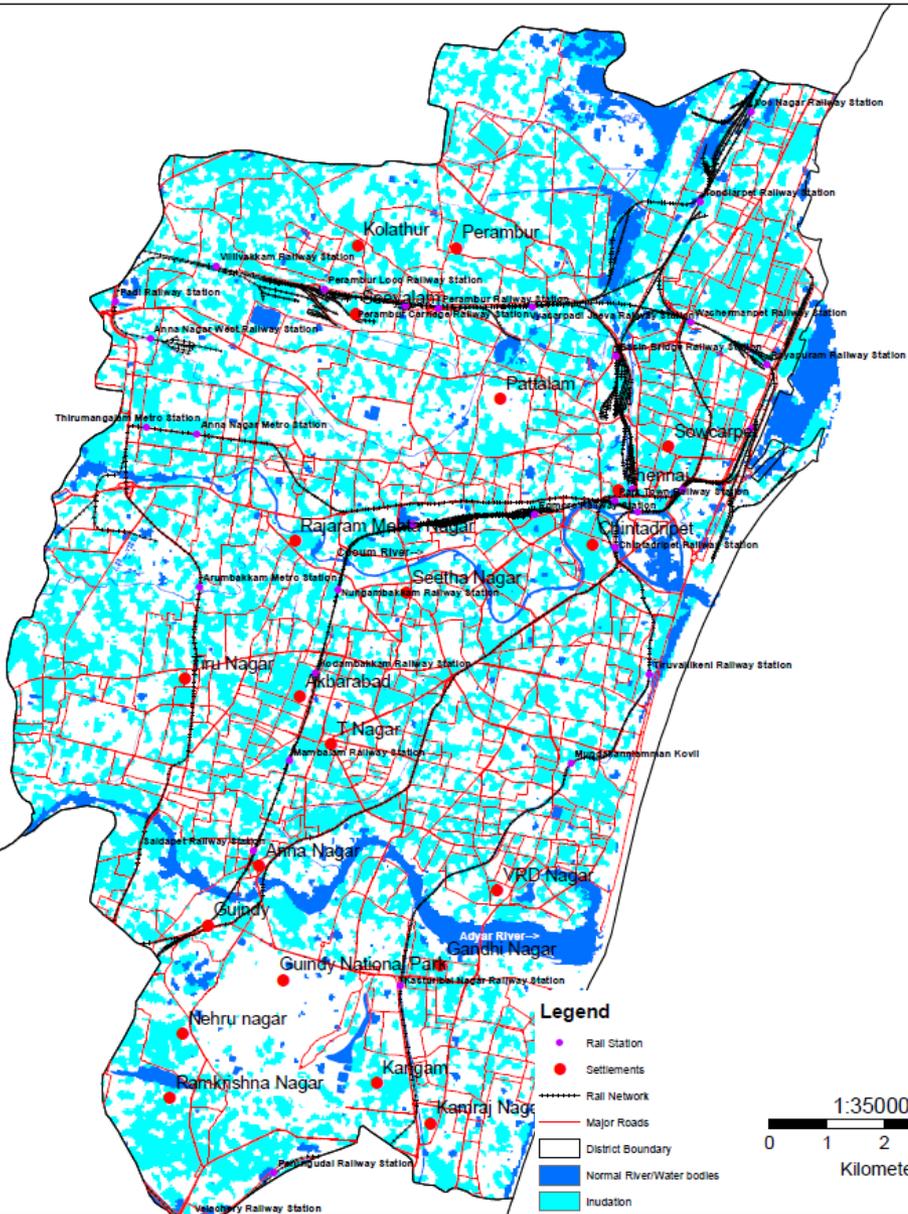
Active Layers

Map | Legend | Copyright @NRSC Hyderabad | Service Agreement | Contact Directory | Feedback | Contact Us | User Manual

23:15 | 26-12-2015

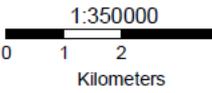
Heavy Rains in Tamilnadu State Inundated areas in Chennai District

Based on the analysis of RISAT-1 data of 03, 04 & 06th December, 2015



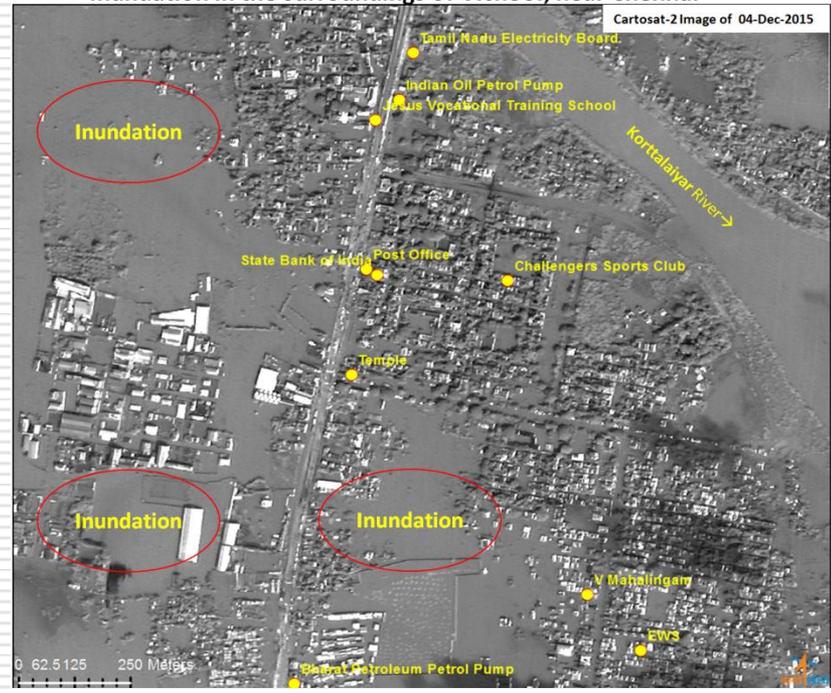
Legend

- Rail Station
- Settlements
- Rail Network
- Major Roads
- District Boundary
- Normal River/Water bodies
- Inundation



Note: When publishing this map as part of any report, source may be indicated as * NRSC (2015) - Inundated areas in Chennai District, Tamilnadu State (as on 03, 04 & 06th December 2015) dated 08.12.2015 DSC/NDEM Map no : 2015/27, NRSC/ISRO, Hyderabad

Inundation in the surroundings of Vichoor, near Chennai



Inundation in the surroundings of Kanniyammam Pettai, near Chennai



Dharahara Tower, Kathmandu (Plaeides 27.04.2015)



Capacity Building

MHA access to all States products & Services



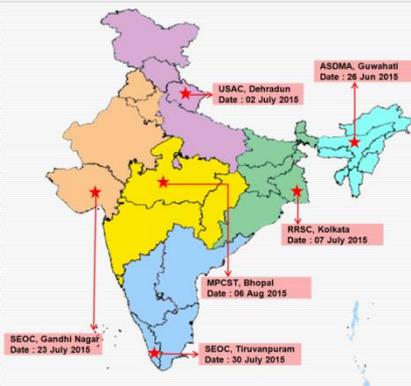
Exclusive Training Programme to 11 NDRF Bns



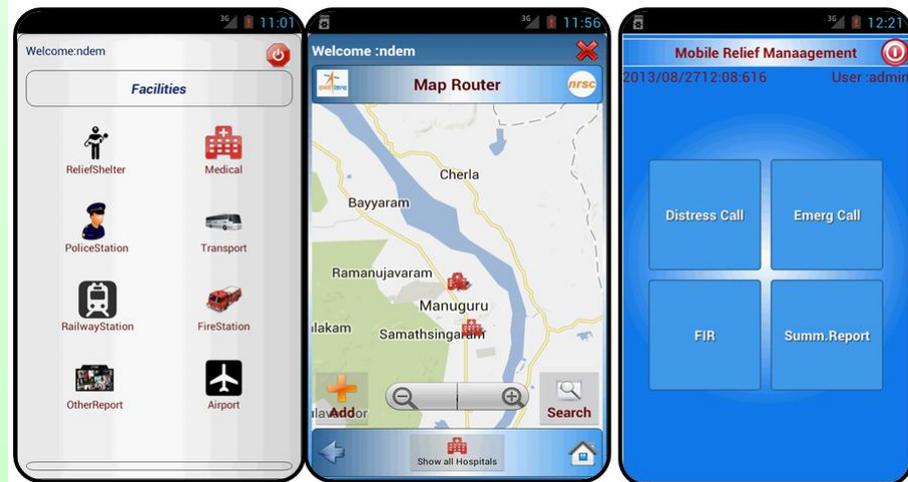
MoUs with NDRF & SDRF, MP for capacity building and customization of services

Disaster Products	2013	2014	2015
Event layers	73	125	65
Maps	108	92	111
Reports	65	116	90

Six Regional Training Progs & one Central training prog during Jun-Aug 2015



Mobile apps Developed

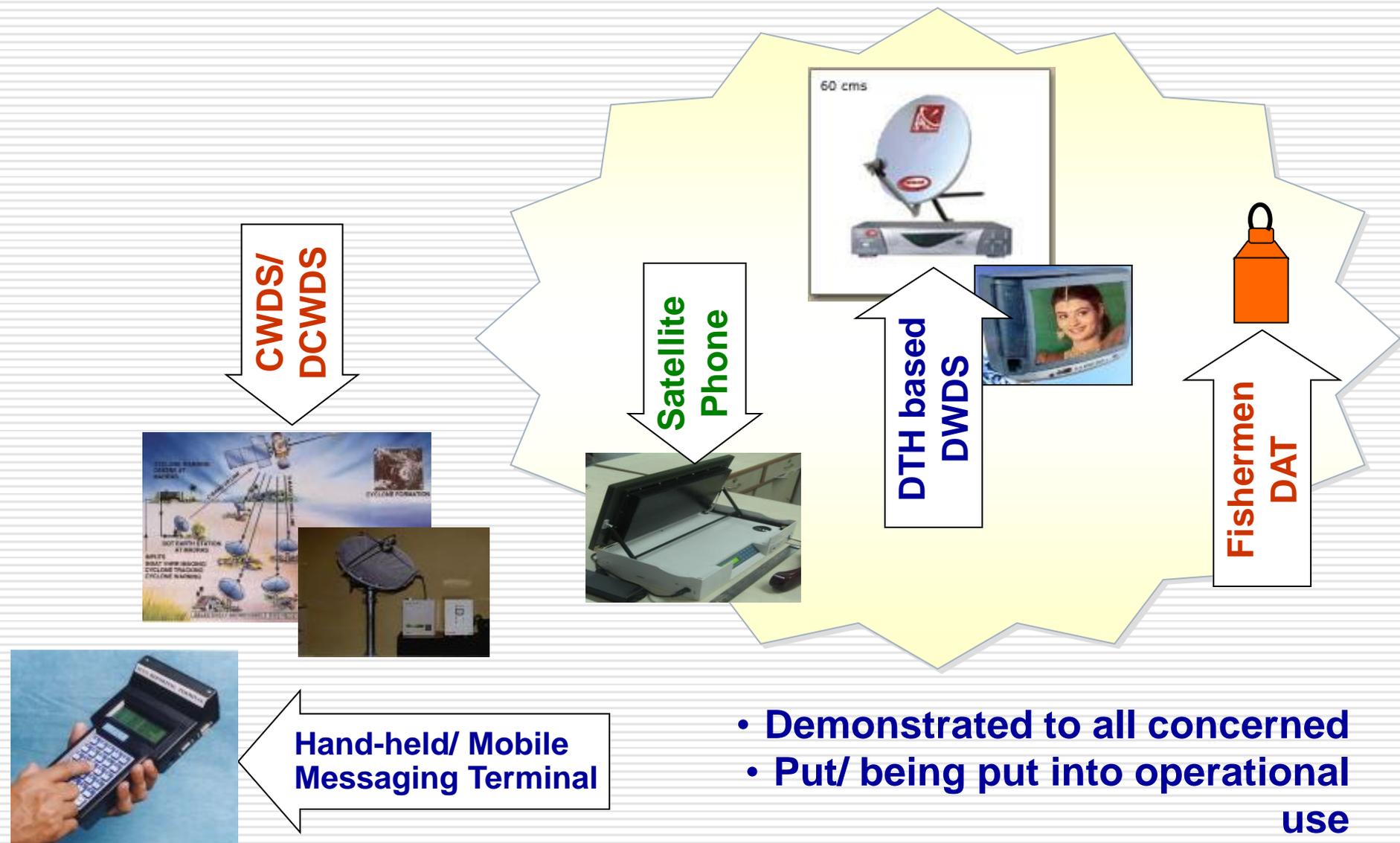


Geospatial Data Collection

Geo tagging of Emergency Facilities

Relief Management

Satellite (INSAT) based Emergency Communication Systems



International Association

Sentinel Asia

Emergency requests responded during 2014

- Tonga, Tropical Cyclone, Jan 2014
- Indonesia Floods, Jan 2014
- Indonesia Volcanic Eruption,- Mt Kelud Feb 2014
- Indonesia Volcanic Eruption,- Mt Sinabung Feb 2014
- Solomon Islands Floods, Apr 2014
- Tajikistan Landslides & Mudflow, Apr 2014

Disaster Charter

UN SPIDER
UNOOSA

Sentinel Asia

Support to Charter Activations - 2014

5 April	Flood in the Solomon Islands
2 April	Tsunami in Chile
21 March	Flood in north region of Brazil
11 March	Missing Malaysia Airlines jet Mount Kelud volcanic eruption in Indonesia
13 February	Flood in Bolivia
12 February	Flood and landslide in Burundi
11 February	Snowfall in South Korea
7 February	Floods in Zimbabwe
6 February	Flood in south-west England
5 February	Forest fire in Mt. Japfu, India
21 January	Flood in Huancavelica, Peru
7 January	Volcano in Indonesia
6 January	Flood in England, UK
1 January	Cyclone in La Réunion Island

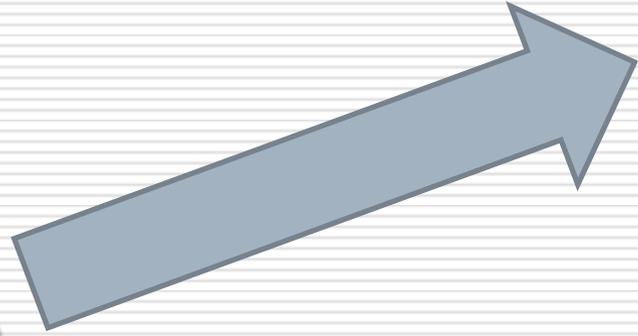
Visualization on Bhuvan portal Data support to International disasters

The screenshot shows the Bhuvan portal interface. On the left, there is a list of disaster events with search filters for 'Indonesia'. The list includes:

- Indonesia: Volcano on 17-Feb-2014 (KISAT-1, 1 Scenes)
- Indonesia: Volcano on 06-Feb-2014 (KISAT-1, 1 Scenes)
- Indonesia: Flood on 19-Jan-2014 (ResourceSat-2, 1 Scenes)
- Indonesia: Volcano on 11-Nov-2013 (KISAT-1, 3 Scenes)
- Indonesia: Forest Fire on 27-Jul-2013 (ResourceSat-2 AIRFS, 1 Scenes)

A pop-up window for 'Sri Lanka' shows a 'Flood on 19-Jan-2011' with 'ResourceSat-2 AIRFS' and '1 Scenes'.

Way Forward



Info on Micro Blogs ...

This information helps in assessing the impact of the event for further monitoring. Visualisation of information on spatial map viewer for further analysis.

localhost:81/twitter/final/input.php

RT @thetmalayer: Official death toll crosses 3300. #Nepal #nepalquake 27.4.2015 08:58

Sunshine and snow ☐ #nepal #annapurna #survive #wamth #trek @ Annapurna Himalayan Range [instagram.com/p/2ASiM01dk/](#) 28.4.2015 09:30

so more harm please :(#NepalEarthquake #prayfornepal #nepalquake #nepal 28.4.2015 08:17

Fighting the waves of earthquake... "TOGETHER" #nepalearthquake #nepal #family (P.S. we... [instagram.com/p/2ACmumMlVx/](#) 28.4.2015 07:16

should we evacuate the valley?? all are rushing out? #nepal #kathmandu #NepalEarthquake @shan_kan 28.4.2015 06:42

RT @arjunepal: After 3 hours of last aftershock #nepal had another one at 5:07 am. @arjunet @WTVOA 28.4.2015 04:56

After 3 hours of last aftershock #nepal had another one at 5:07 am. @arjunet @WTVOA 28.4.2015 04:55

RT @katminsky: #NepalEarthquake #nepal #earthquake pic.twitter.com/OBk5pxD5tE 28.4.2015 03:28

help #nepal @twitter @FarOutAkhbar @SirBachchan @jamerik @rachel_r @BeingSalmanKhan @asmi_jhau #NepalEarthquake 28.4.2015 03:14

@ManUtd please pray for the ppl suffering in this hour if need. #prayfornepal #NepalEarthquake @AnderHerrera @felamim @D_DeGee #nepal 28.4.2015 02:24

n A young girl brought to triage by an indian army helicopter Tuesday #nepal #earthquake pic.twitter.com/ArNv5qinb 28.4.2015 15:56

This temple is now ruined. #prayfornepal #nepal #dharbarguare #backpackingaddicts #nepaltourism @... [instagram.com/p/2A132cACc/](#) 28.4.2015 14:43

Monument now remain memories #prayfornepal #NepalEarthquake #Nepal @ Ratipokhari, Jamal [instagram.com/p/2Aa-u_xb7W/](#) 28.4.2015 14:26

Survived but not the ones. #earthquake #nepal #nepal #india #nepal #india #nepal 28.4.2015

Twitter Samvad to keep the govt.-citizen conversation going

Curated tweets, text messages to reach cellphone users daily



Prime Minister Narendra Modi with Twitter CEO Dick Costolo in New Delhi on Tuesday.

The Hindu
25 Mar 2015

Yathika Bhargava

NEW DELHI: The Union government launched a new platform with direct communication among tweets and text messages, helping boost e-governance plans.

To start with, the service has 16 partners, including Prime Minister Narendra Modi, the Chief Ministers of Andhra Pradesh, Gujarat, Uttar Pradesh and West Bengal, Chandrababu Naidu, Anandiben Patel, Akhilesh Yadav and Mamata Banerjee, respectively; the Railway Ministry, and the Bengaluru City Police.

"Based on Indian technological innovation, Twitter Samvad is dedicated (to) and specially built, for the largest democracy of the world. As part of the Prime Minister's Digital India initiative, this tweet-powered service enables citizens to be the first to know about the govern-

ment's actions by receiving political content in real-time on their mobile devices anywhere in the country," said Dick Costolo, chief executive officer of Twitter, who met Mr. Modi on Tuesday.

Through Twitter Samvad, a set of curated Tweets will be delivered every day from the accounts of the government and the leaders to mobile-phone users across the country as text messages.

The service can come handy during emergencies as government agencies can share live updates, even time-sensitive information on law and order or rescue.

Twitter Samvad is based on a platform provided by

the accounts of the government and the leaders to mobile-phone users across the country as text messages.

The service can come in handy during emergencies as government agencies can share live updates, even time-sensitive information on law and order or rescue.

Twitter Samvad is based on a platform provided by

Name (User)	User	Date
RT @...

Tweet Visualisation

Location Based Services



The Hindu
04 Jun 2015

Smart maps for smart cities

Study says their use will help save \$8 billion

Sanjay Vijayakumar

NEW DELHI: The use of smart maps in Prime Minister Narendra Modi's ambitious smart cities project will lead to \$8 billion in savings and value in a year, according to a study by Dalberg Global Development Advisors, a strategy and policy consulting firm. This also needs a strong policy and regulatory framework, it said.

The firm's report, "Smart maps for smart cities: India's \$8 Billion+ opportunity", said India was expected to see the greatest migration to cities of any country in the world in

BIGGER & BETTER WITH TECHNOLOGY

SMART MAPS	POTENTIAL TO SOLVE PROBLEMS
<ul style="list-style-type: none"> Aim to provide tools, data to inform decision-making and enable citizens to develop their potential Will help search for places of interest, pinpoint addresses, optimise routing, communicate better and understand neighbourhoods 	<ul style="list-style-type: none"> Ambulances lose up to 25% of response time locating addresses. Smart Maps will save 13,000 lives by reducing emergency response time One in 4 urban workers spends 90 minutes commuting each day. Save \$1.6 bn in productive time, fuel, and 1 mn metric tonnes of CO₂ emissions Only 20% of local map searches for businesses convert into an in-person purchase, compared to 73% in the U.S. Raise revenues to local retailers by \$2.2 billion and save users 12 million hours in lost time
<ul style="list-style-type: none"> 73% of women scout neighbourhoods on devices before they go out, and send messages for help when they feel unsafe 	

The Hindu 24 April 2015

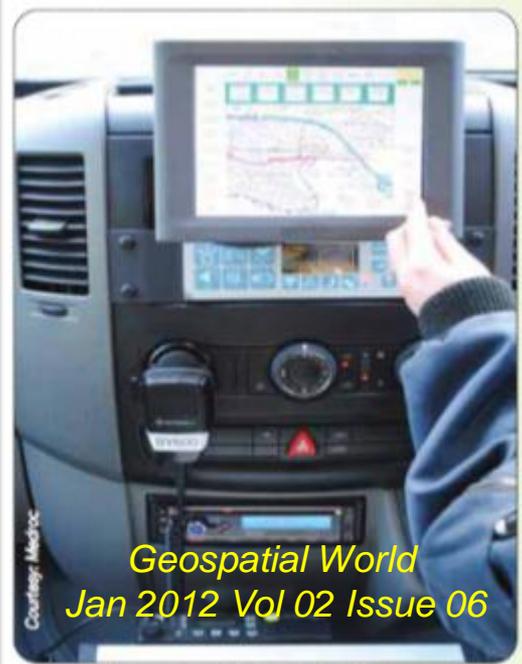
V Bhnaumurthy
Flat No: XXX
Building Name
Locality, Street name
Opp XXXX
Hyderabad – 500 048



Can we replace this address with simpler one?

Ambulances lose up to 25% of response time locating address

Smart Maps will save 13000 lives by reducing emergency response time

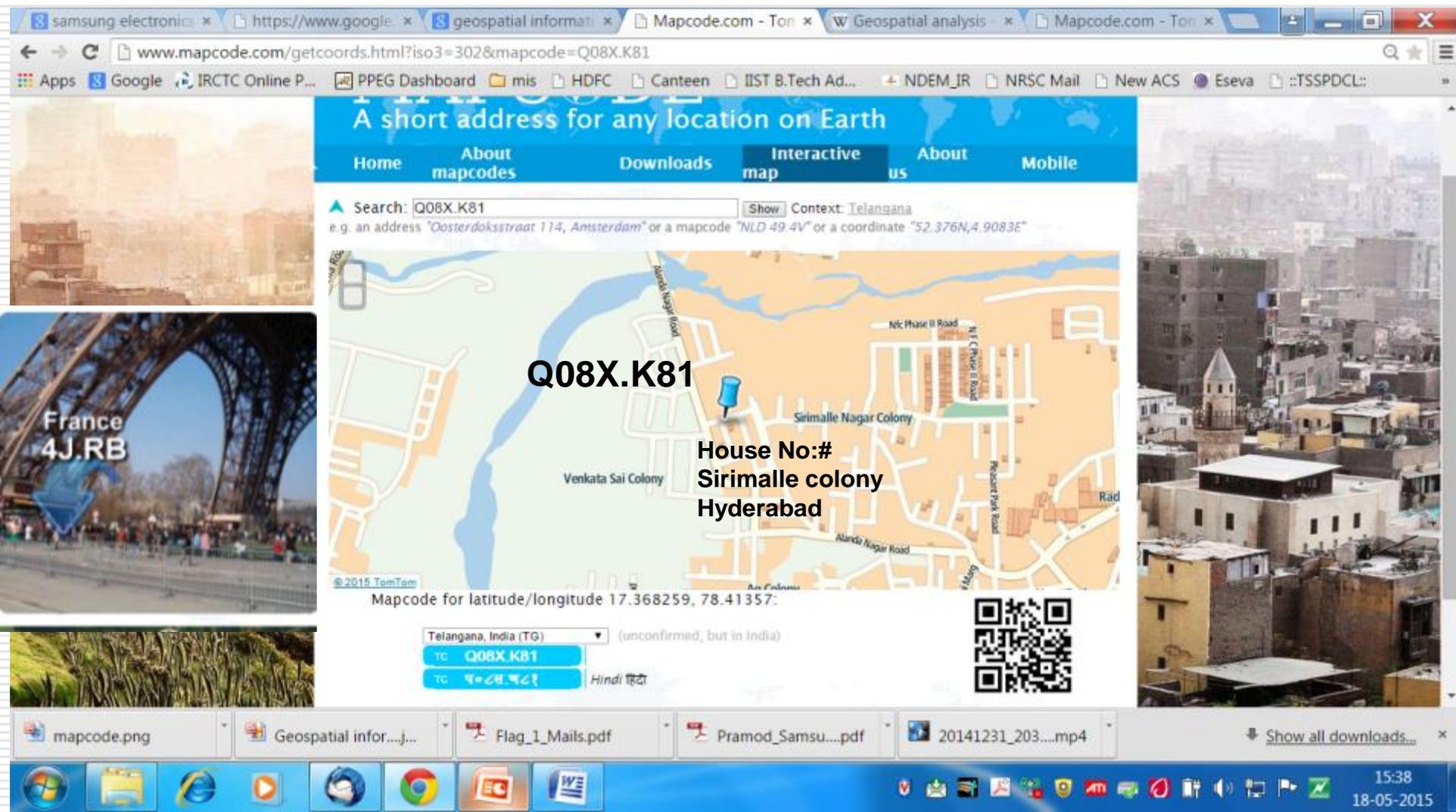


Geospatial World
Jan 2012 Vol 02 Issue 06

Governments have a responsibility to provide essential services to its citizens. For example, in-car vehicle navigation for emergency services enables ambulances to reach their destination as quickly as possible

MAPCODE...

A mapcode represents a location. Every location on Earth can be represented by a mapcode. Mapcodes were designed to be short, easy to recognise, remember and communicate. They are precise to a few meters, which is good enough for every-day use.



The screenshot displays the Mapcode website interface. The browser's address bar shows the URL: `www.mapcode.com/getcoords.html?iso3=302&mapcode=Q08X.K81`. The page header features the text "A short address for any location on Earth" and navigation links for Home, About mapcodes, Downloads, Interactive map, About us, and Mobile. The search bar contains the mapcode "Q08X.K81" and the context "Telangana". Below the search bar, a map shows the location of "Q08X.K81" in Hyderabad, India, with a blue pin. The map labels include "Venkata Sai Colony", "Sirimalle Nagar Colony", "Nlc Phase II Road", and "Alanda Nagar Road". A QR code is visible on the right side of the map. The Windows taskbar at the bottom shows various open applications and the system clock displaying 15:38 on 18-05-2015.

Challenges in Operational Services for DM

Timeliness:

Most Crucial

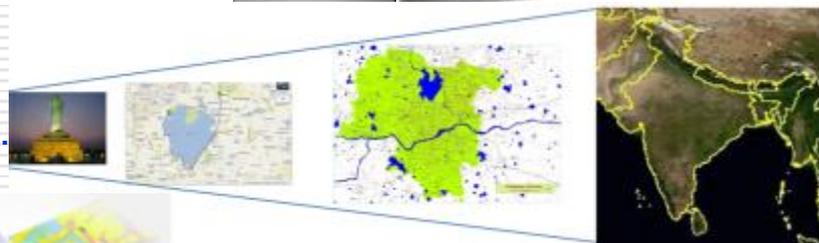
Minutes, Hours, Days, Months ...



Contents:

Extent of detail

Regional, Local, location specific ...



Product

Usability

Soft, Hard Copy, GIS Layer .



Transmission

Mode

Post, e-mail, ftp, web service, Mobile app ...



Technology :

Applicability

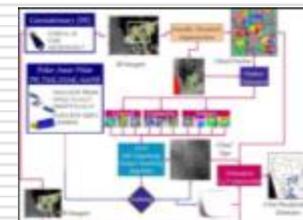
Limitations, unusual, constraints ...



Automation :

Applicability

Automatic feature extraction, Pattern recognition

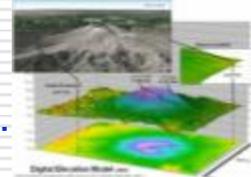


Domain:

Understanding

Knowledge

Process, modelling, forecasting, accuracy...



Implementation:

On ground

Feasibility, acceptability, Adoptability, funds



Thanks...