



CAP Implementation in India

By -

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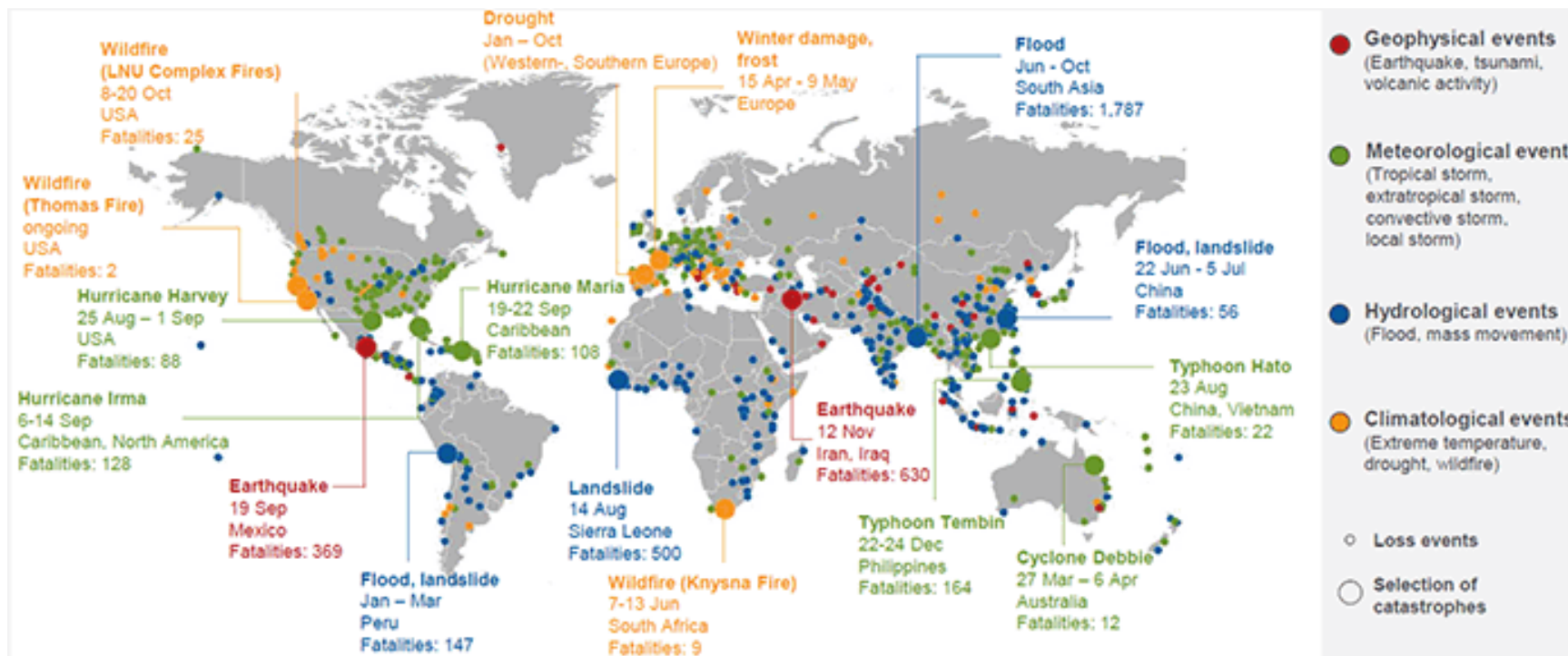
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World Natural Catastrophes, 2017 and Loses



Source: © 2018 Munich Re, Geo Risks Research, NatCatSERVICE. As of January 2018.

Number of relevant events: 710



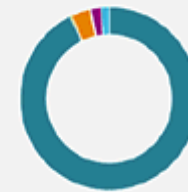
Overall losses: US\$ 330bn



Fatalities: 10,000



Insured losses: US\$ 135bn



- North America, incl. Central America and Caribbean
- South America
- Europe
- Africa
- Asia
- Australia/Oceania

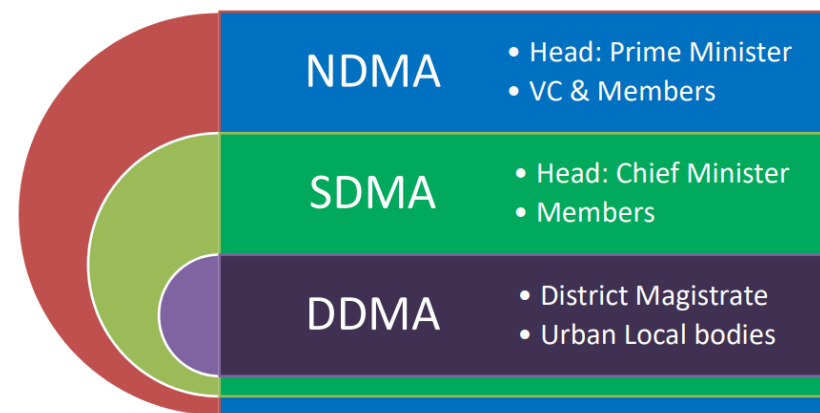
2018: A YEAR of Disaster in India





Initiative for Disaster Resilient India

- ❑ National Disaster Management Authority (NDMA) adopted a comprehensive dynamic National Disaster Management Plan in 2016 incorporating 3 inputs from 3 major International Agreements:
 - Sendai Framework for Disaster Risk Reduction, 2015
 - Sustainable Developmental Goals 2015-30
 - Paris Agreement for Climate Change at the 21st Conference of Parties under UNFCCC
- ❑ State and District Level Disaster Management Plans prepared and Institutional Standard Operating Procedure (SOP) for disaster situations put in place subsequently.
- ❑ Each State Disaster Management Authority prepared hazard profile of State.
- ❑ Collaboration with different ministries for better disaster risk reduction and mitigation
- ❑ Implementation of National Cyclone Risk Mitigation Project (NCRMP), funded by World Bank in Coastal States of India.
- ❑ Provision of Disaster management policies in National Digital Communication Policy (NDCP), 2018 by Ministry of Communication





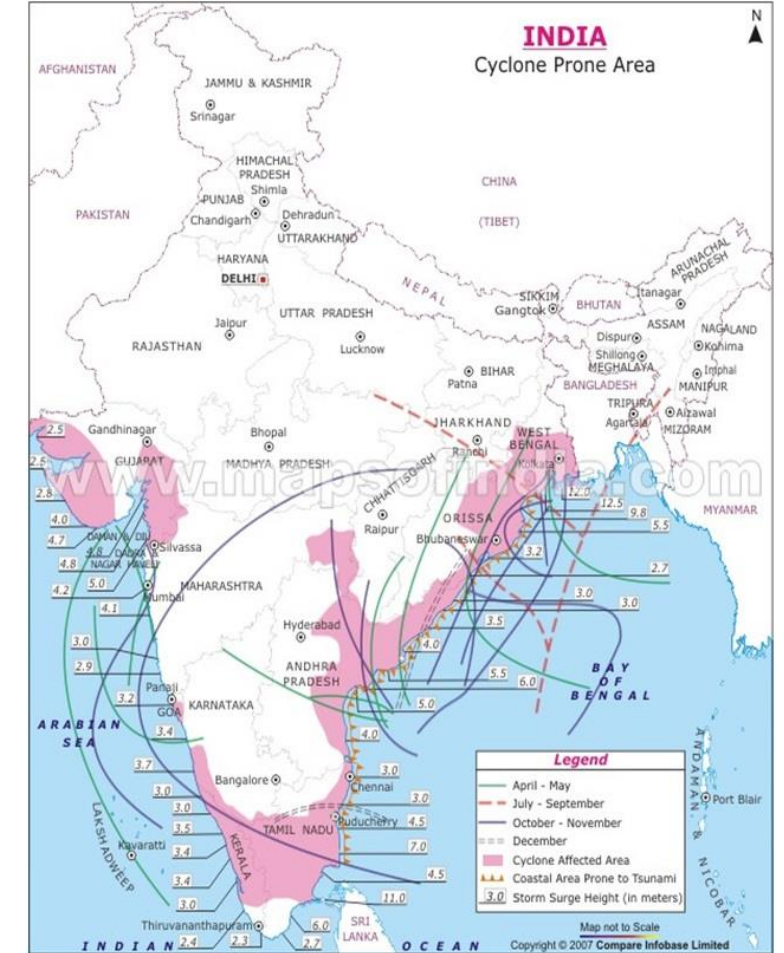
National Cyclone Risk Mitigation Project (NCRMP)

13 cyclone prone States and Union Territories

- **Higher vulnerability States** i.e. Andhra Pradesh, Gujarat, Odisha, Tamil Nadu and West Bengal.
- **Lower vulnerability States** i.e. Maharashtra, Karnataka, Kerala, Goa, Pondicherry, Lakshadweep, Daman and Diu, Andaman and Nicobar Islands.

Main Objectives of the Project was

- **Early warning and communication system by improving the Last Mile connectivity.**
- **Construction and sustainable maintenance of Multi-purpose Cyclone Shelters**
- **Enhanced capacity and capability of local communities to respond to disasters, and Strengthening Disaster Risk Mitigation (DRM) capacity at Central, State and Local levels**





Disaster Management Policies in NDCP-2018

❑ **Strengthening network resilience by:**

- Framing and enforcing standard operating procedures to be followed during disasters and natural calamities
- Establishing institutional framework to promote monitoring of activities, **rapid dissemination of early warning disaster notifications** and better coordination and collaboration between relevant Ministries / Departments, including the National Disaster Management Authority of India

❑ **Developing a Unified Emergency Response Mechanism**

❑ **Enhancing the Public Protection and Disaster Relief (PPDR) plan for India by:**

- Facilitating the establishment of a Pan-India network for Public Protection and Disaster Relief (PPDR)
- Making necessary spectrum available for PPDR including by establishing INSAT satellite-based mobile communication systems
- Implementing global and regional harmonized spectrum Plans for PPDR



PAN India based Institutional Mechanism for Early Warning System



- National Disaster management Authority (NDMA) from the experience of NCRMP envisaged to build an **India wide Integrated Early Warning Platform for Disaster Management** .
- Utilizing the massive telecom infrastructure (i.e. **1,200 million mobile subscribers, 24 million landline subscribers and 432 million internet users**) **IVR Call, SMS and Cell Broadcasting** based early warning system is the de-facto choice.
- For that NDMA approached to **Department of Telecommunications (DoT)** to form regulation and policies for dissemination of Early Warning and enabling Mitigation Resource Management in Disaster situations.
- DoT further involved **Centre for Development of Telematics (C-DoT)**, India's premier telecommunications R&D center, under Ministry of Communication total solutions to architect, design and development of **CAP compliant Integrated Early Warning Platform** along with integrating all forecasting and dissemination agencies and State to local level authorities.



CAP Compliant Integrated Early Warning Platform



□ Mission

- **Modernize and integrate existing** alert and warning systems at the **national, state, territorial, local** levels in a **single, cohesive** platform
- **Implementation of Common Alerting Protocol (CAP)** for crisis information interchange between organizations.
- Forecasting agencies can **address public or the First Responders** of a **specific area** simultaneously cover all media coverage (**SMS, IVR call, TV, Radio, Siren, Road Signage, Railway station announcement system, social media** etc.) in **23 vernacular languages**.
- Facilitate **rescue and recovery operation post disaster** through **GIS based resource planning and unified platform** for disaster response force.



सत्यमेव जयते

Forecasting Agencies



सी-डॉट
C-DOT

Head Quarter in **New Delhi, 13 Regional Meteorological Centers** across India

head quarter at **Hyderabad** with **17 monitoring centers** across India



Avalanche

Snow and Avalanche Study Establishment (SASE)



Flood



Flash Flood



Central Water Commission (CWC)



Tsunami

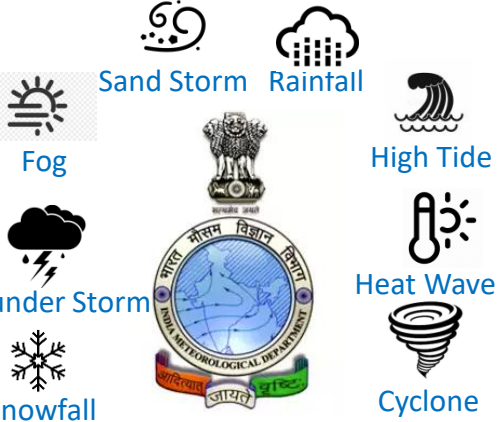


Indian National Centre for Ocean Information Services (INCOIS)



Forest Fire

Ministry of Environment, Forest and Climate Change



India Meteorological Department (IMD)

Head Quarter in **New Delhi, 5 Regional Meteorological Centers** in Chennai, Kolkata, Mumbai, Guwahati and Nagpur and **18 Meteorological Centers** across India



Landslides



Geological Survey of India (GSI)

head quarter at **Kolkata** with **6 Regional Centre** across India



Earthquake



National Centre for Seismology (NCS)

head quarter at **New Delhi** with **82 observatory Centres** across India



Draught

Ministry of Agriculture and Farmers Welfare



Human Epidemic

Ministry of Health and Family Welfare



Project Stakeholders



Forecasting/Early warning Agencies

- IMD
- CWC
- GSI
- INCOIS
- NCS
- SASE
- AERB
- MoEFCC
- MoAFW
- MoHFW



- NDMA
- 36 SDMA
- 707 DDMA

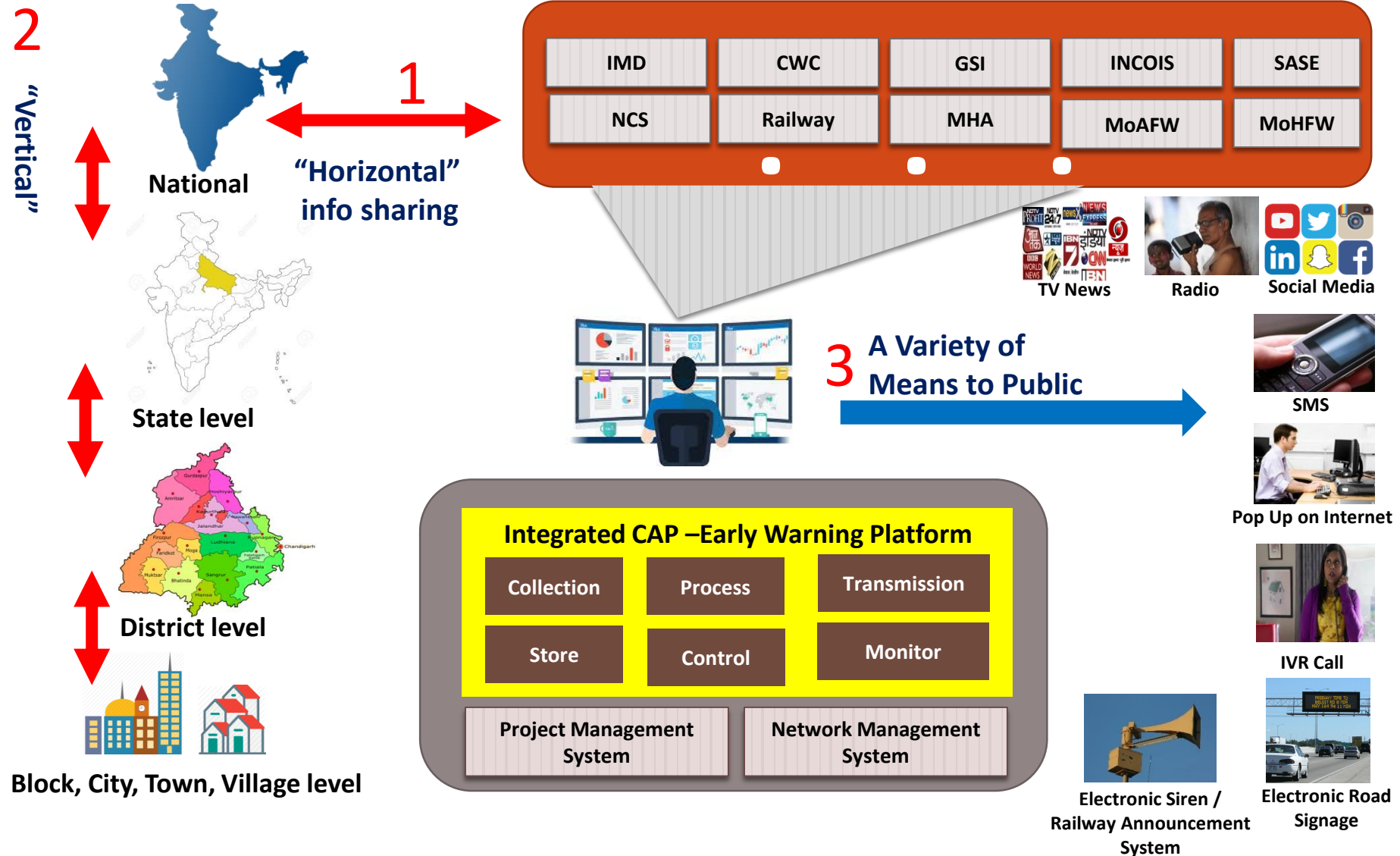
Authority /Controlling Agencies

Dissemination Agencies

- Telecom Service Provider
- All India Radio
- Television
- Public Addressing System
- Electronic Siren
- Electronic Road Signage
- Railway Announcement System
- Social Media

Common Alerting System Working Model

Typical Vertical Horizontal Integration

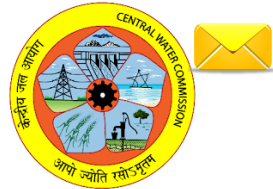




Workflow of Early Warning Platform



Forecasting Agencies

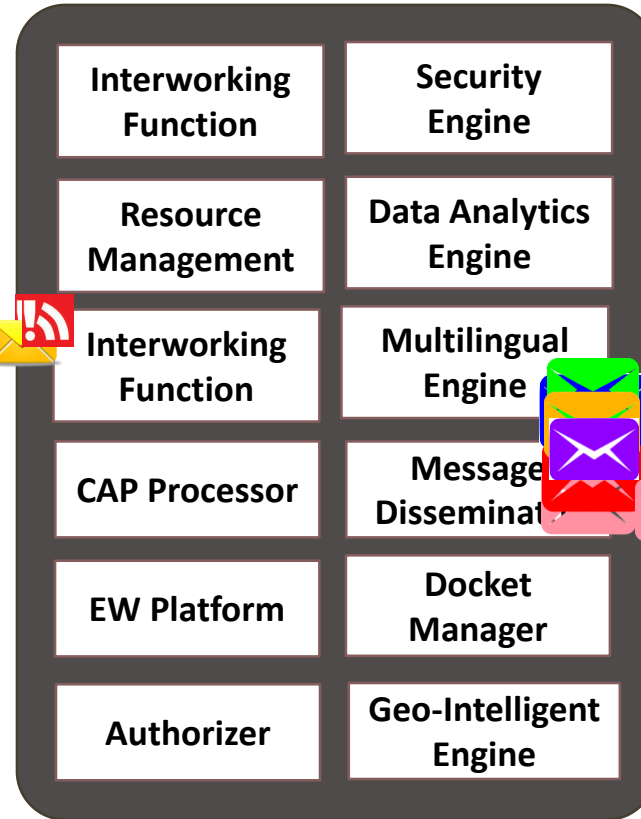


Ministry of Home Affairs



सत्यमेव जयते

EARLY WARNING PLATFORM



Message Dissemination Agencies



NDMA



SDMA

District Level

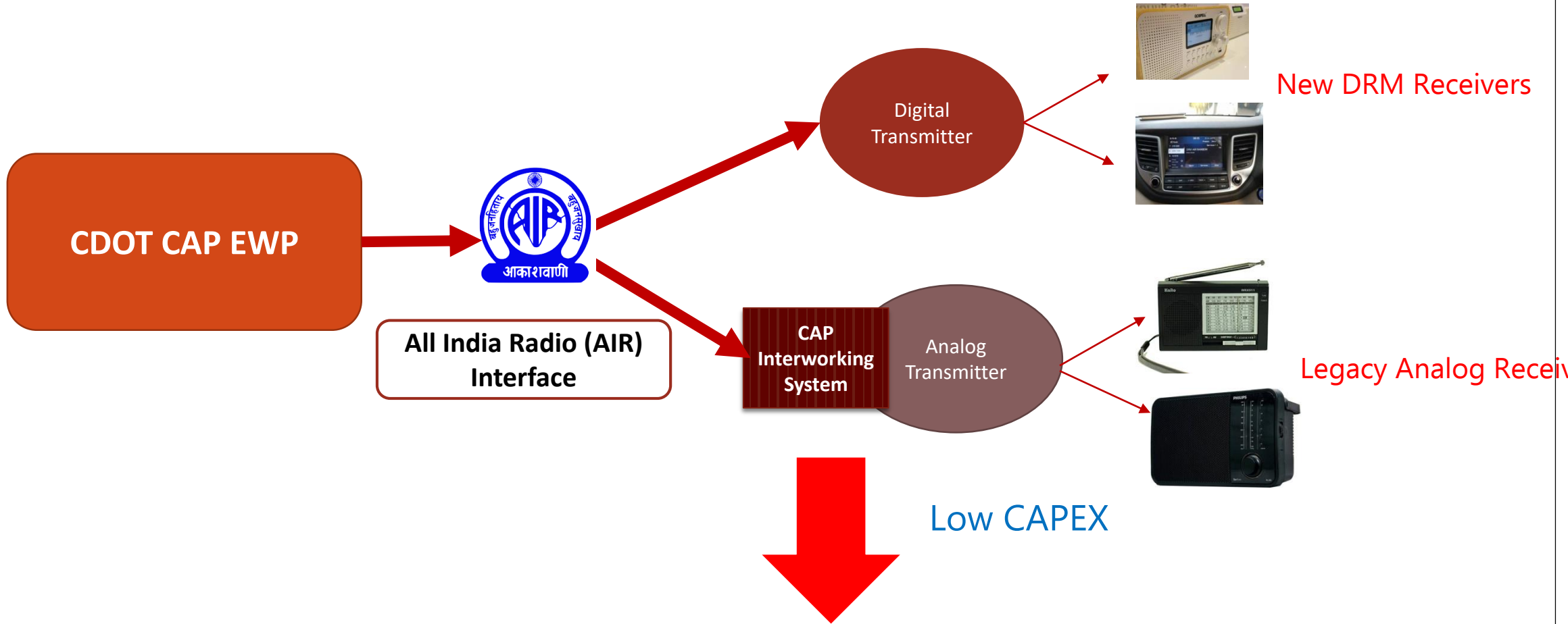


City/Town Level

Authority/ Controlling Agencies



Integration with All India Radio (AIR) Legacy Analog Transmitters





Current Implementation Status



Telecom Service Provider



All India Radio

Successfully integrated with Analog Transmitter

Successfully Integrated with DRM transmitter

In Limited Sites



Field Trial of CAP Platform in 14 States of India

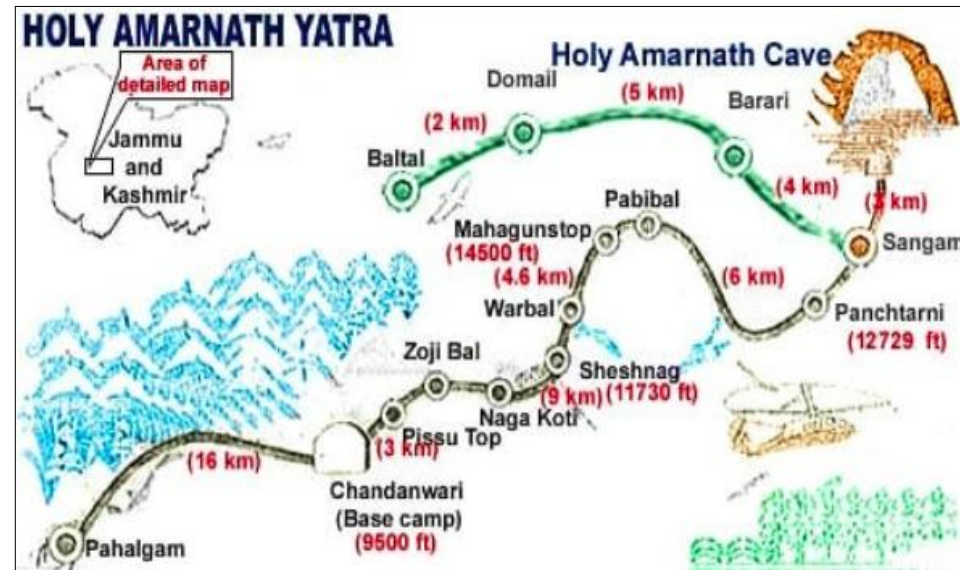


S. No.	State	Area/District	BSNL	Reliance Jio	AirTel	Vodafone-Idea
1	Tamilnadu	Marina Beach area of Chennai	5181			
		Nungambakkam, Chennai	2768			
2	Kerala	Idduki	883			
3	Andhra Pradesh	Vijaywada	4125			
4	Telangana	Hyderabad	3796			
5	Uttarakhand	Dehradun	1386			
6	Jammu and Kashmir	Civil Secretariat, Shaheed Gunj,	59		Cell Broadcasting	
		Amarnath Yatra Route	942			
7	Assam	Assam Secretariat, Dispur	2295			
		Pan Bazar Area , Guwahati	7252			
8	Madhya Pradesh	IHM Bhopal, Shahpura, Bhopal	4474			
	Delhi-NCR	Chattarpur Region	--	--	Cell Broadcasting	
9	Himachal Pradesh	Dharamshala area	15121	17328		
		Nahan area	6932	5214		
		Reckong Peo area	2325	3099		
		Himachal Pradesh Secretariat	5321	1437		
10	Karnataka	Dakshina Kannada	2992	--	--	
		Vidhana Soudha, Bangalore	1011	--	--	
11	Chandigarh	Sector 17, Chandigarh	20307	93322	5400	
12	Odisha	Kendapara area	1659	6220	--	
		Bhubneswar Secretariat Area	6302	3734	--	
		Secretariat Area	6725	4210		5624

More than 2.5 million SMS disseminated

Details of CAP Implementation in India

- Amarnath Yatra first test case of CAP Platform
- 260,000 People participated in pilgrimage for more than 40 days in 2018, it is one of the Holiest Pilgrimage of India
- Casualties due to Tough Terrain and Extreme Weather Condition





Summary Weather Forecasting Through CAP Platform during Shri Amaranth Yatra



S. No.	Date	No. of Recipients
1.	28.06.2018	BSNL:717
2.	29.06.2018	BSNL: 892
3.	19.07.2018	BSNL:21,771 Airtel 2G customers through Cell-Broadcasting
4.	20.07.2018	BSNL: 30185 Jio:40682 Airtel 2G customers through Cell-Broadcasting
5.	23.07.208	BSNL: 27776 Jio:39161 Airtel 2G customers through Cell-Broadcasting
6.	25.07.2018	BSNL: 29151 Jio:40249 Airtel 2G customers through Cell-Broadcasting

More than **200,000** Weather Forecasting SMSs and Cell Broadcasting has been Disseminated along Shri Amarnath Yatra route by J&K State Government

Early Warning and Relief Operations during Kerala Flood

More than **3 Million** SMSs has been disseminated through C-DOT CAP Platform in difficult situations





Challenges Faced in Mass Message Dissemination



- Un-even population distribution. Dense to very dense population huge number of SMS dissemination in a small area.
- A significant percentage of mobile phones do not support Cell Broadcasting
- Ensuring Quality of Service (QoS) in bulk SMS dissemination
- Real time extraction of mobile number in the selected area by analyzing large set of VLR



CAP Implementation Challenges



- Large Population, density varies
- Alerting mechanism is different for different states
- Different Hazard Profile for Different Areas
- Smartphone penetration is less only 30% cell broadcasting so SMS and Cell Broadcasting both options need to implement
- Support for Multilingual Message broadcast as India has 22 major languages
- Large number of Government and Private Organizations need to be integrated with CAP Early Warning Platform through Inter Working Functions, Support for Legacy systems



Future Roadmap of CAP Implementation in India



- **All Radio Transmitters** of All India Radio (420 stations) and Private FM Channels (157 stations)
- **Television** – 16 Doordarshan Channels and 115 Private News Channels
- **Indian Railway** – railway tracks of 121,407 km, more than 8000 stations, In the year ending March 2018, IR carried 8.26 billion passengers and transported 1.16 billion tonnes of freight.
- **Electronic Road Signage** installed across National and State Highways
- **Electronic Sirens** installed at 13 Cyclone Prone States
- Integration with **Social Media**
- **Crowd Sourcing** Mechanism for Targeted Relief and **Recovery of Disaster Affected People**

Yellow alert in eight Kerala districts after MeT warning of rough seas, heavy rains

Laxmi Prasanna | TNN | Sep 27, 2018, 17:39 IST



File photo of heavy rains in Thiruvananthapuram.

THIRUVANANTHAPURAM: After a lull phase, southwest monsoon seems to be gearing up in Kerala due to convective activity. Heavy rains lash parts of the state on Thursday and are expected to continue till September 30. With that, Kerala State Disaster Management Authority (KSDMA) has re-issued yellow alert in eight districts across the state.

“This yellow alert is issued by way of the common access protocol (CAP) with one-liner alerts not to travel in landslide-prone hilly areas during 7pm to 7am. Similarly avoid visiting flood-prone areas, beaches and swimming in rivers and other water bodies. It is supported by the national platform through the Centre for Development of Telecom (C-DOT) and National Disaster Management Authority,” KSDMA’s State Emergency Operations Centre (SEOC) head scientist Sekhar Kuriakose said. He has also advised people to be cautious that children do not venture out to play in water bodies.

BusinessLine

DoT to refine standard operating procedures based on learnings from Kerala’s response to flood

OUR BUREAU

T+ T-

Flood-hit state’s response to be considered ‘best practice’

THIRUVANANTHAPURAM, AUGUST 27

The Department of Telecom (DoT) will consider flood-hit Kerala’s response as ‘a best practice’ and refine the existing Standard Operating Procedure (SOP) for telecom services.

This was stated by Aruna Sundararajan, Telecom Secretary, at a post-floods review meeting held here on Saturday with BSNL, other telecom service providers and telecom infrastructure providers.

EARLY WARNINGS ENABLED

The use of Common Alert Protocol-Early Warning Platform (CAP-EWP) helped the government issue early warnings to the public, the meeting assessed.

The system developed by DoT and CDOT had helped the State Disaster Management Authority (SDMA) issue early warnings to the public through mobiles.

The CAP enabled disaster management professionals to disseminate messages to target the population in select areas quickly, without the intervention of telecom service providers.

This has been implemented using a platform developed by CDOT, interfacing with all telecom networks. This platform would be upgraded to include messages in the vernacular language as well.

DoT will lay out comprehensive Public Protection and Disaster Relief (PPDR) procedures, which can be implemented across India involving all stakeholders, state governments, and various agencies involved to ensure that the effects of the disaster are mitigated substantially.

All resources required for PPDR implementation will be made available through the collective efforts of DoT, the National Disaster Management Authority, the respective state SDMA’s, other agencies and stakeholders.

A standardised common number has been implemented through which customers can get the location of missing family members and friends, for further tracing. This process will also be integrated with common distress numbers such as ‘112’, for which follow-up action will be taken by DoT.

Pilot test of Common Alert Protocol Platform successfully held in Himachal; Alerts were received on over 58,000 cellphones

Source :NewsBharati Date :30-Jul-2018



Shimla, July 30: For the dissemination of early warning and other emergency alert messages for disaster preparedness, the National Disaster Management Authority (NDMA) on Sunday completed the successful pilot test of a new system called Common Alert Protocol (CAP) in Himachal Pradesh.



THE TIMES OF INDIA
CITY

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Weather Hindi News

NEWS / CITY NEWS / DEHRADUN NEWS / STATE TO ROLL OUT LOCATION-BASED SMS DISASTER ALERT

State to roll out location-based SMS disaster alert

TNN | Updated: Jun 19, 2018, 13:17 IST



Representative Image

DEHRADUN: The state government will introduce location-based SMS alerts to warn people in vulnerable areas of impending disasters. The system called Common Alerting Protocol (CAP) has been developed by the National Disaster Management Authority (NDMA).

Under the system, an SMS would be sent to those living

The test messages about rainfall forecast were developed and sent to selected areas of three districts i.e. S Drop, Cover and Hold exercise was also disseminated in Chhotta Shimla area through the CAP platform.

Notably, the pilot testing was successfully done from the State Emergency Operations Centre (SEOC) located more than 58,000 Reliance, JIO and BSNL subscribers in the areas of three districts and Shimla Secretariat

The Common Alert Protocol (CAP) has been developed by the NDMA and department of Telecommunication Secretary (Mitigation) from NDMA personally supervised the pilot testing from SEOC, Shimla. On behalf D.C.Rana coordinated the process of testing the Common Alert Protocol in the State.

near disaster-prone areas when extreme weather events like heavy rainfall or thunderstorm are likely to take place.



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Odisha experiments with mass alert SMSes




STAFF REPORTER

BHUBANESWAR , DECEMBER 20, 2018 00:15 IST
UPDATED: DECEMBER 20, 2018 00:15 IST

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The Odisha State Disaster Management Authority has carried out an experiment of sending mass disaster alert SMSes to mobile users as part of its project of Early Warning Dissemination System.

Leading telecom service providers, including BSNL, Airtel, Vodafone and Reliance Jio, were roped in for sending the messages.

A Common Alert Protocol solution has been developed by the Department of Telecommunication and Centre for Development of Telematics through which disaster management messages can be disseminated to the public by sending mass SMSes to all mobile subscribers in a selected geographical area and those on roaming. Pilot testing of CAP had previously been done in different States. According to OSDMA, the EWDS is being implemented in 6 districts.



**Thank
You!**