SOUTH ASIA HYDROMET FORUM III

OBSERVATIONAL SYSTEMS AND REGIONAL DATA EXCHANGE FOR MONITORING AND PREDICTION OF EXTREMES

- **Leveraging public and private sector engagement to meet SAHF priorities**

Kumar Margasahayam

November 15-18, 2021
Annual Event- Virtual

NEEDS AND CHALLENGES IN PUBLIC PRIVATE SECTOR ENGAGEMENTS

- South Asia is prone to disasters the most common being
  - Lightning – India, Bangladesh, Nepal
  - Flooding and urban floods
  - Heat waves
  - Drought
- Challenges in setting up Public Private Sector Engagement
  - Investment – Public or Private
  - Sustainable infrastructure
  - Data sharing and interoperability

OVERCOMING PPE CHALLENGES- REAL LIFE EXAMPLES

- Odisha State Disaster Management Authority
- Peru – Early Warning Flood System
- Assam State Disaster Management Authority

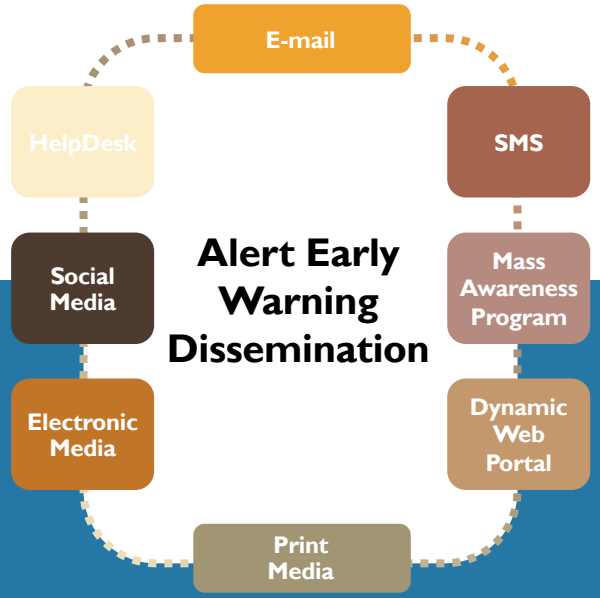
ODISHA STATE DISASTER MANAGEMENT AUTHORITY

Earth Networks Sferic Siren installation in Odisha

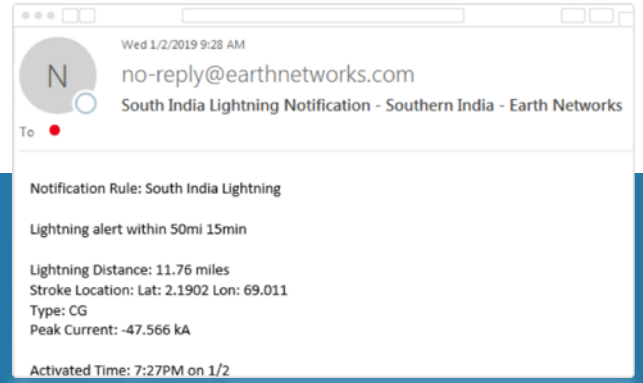
- Storm-tracking and visualization software
- Lightning proximity alerting
- Dangerous Thunderstorm Alerting
- 14 Automated Lightning Warning Systems installed throughout villages
- 4,084,820 Lightning strikes detected in 2019
- 2,788 Dangerous Thunderstorm Alerts issued in 2019

30% REDUCTION IN DEATHS DUE TO LIGHTNING IN ODISHA

ENABLING PUBLIC ALERTS AND WARNINGS IN ODISHA

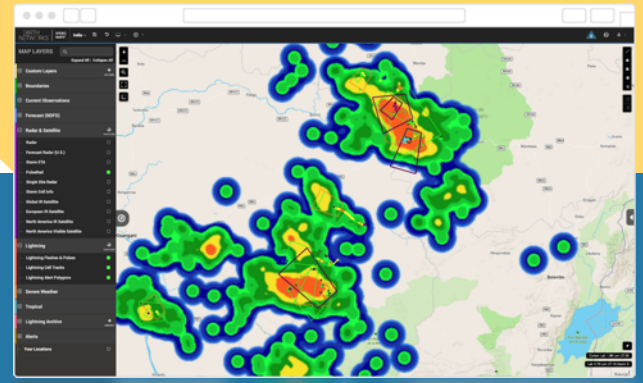


Early Warning Communication: WhatsApp group for "ALERT (Media)" and flash messages/SMS to mobile phone users and via email.



The State Emergency Operation Centre communication: Via WhatsApp messaging system, phone calls, TVs, FM Radio BSNL Near Real Time Location Based Alert System.

Earth Networks Outdoor Alerting System: Warning of lightning within predefined parameters using an audible horn.



Earth Network's Pulse Rad Radar: Identify approaching thunderstorms in regions not suited for adequate radar coverage.

Source: National Disaster Management Authority, Government of India

COLLABORATION WITH RIMES – ODISHA AND TAMIL NADU

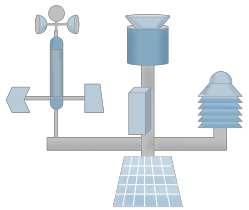
PERU - EARLY WARNING FLOOD SYSTEM

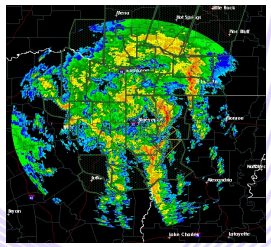
- Project Sponsor – **ARCC -** Autoridad para la Reconstrucción con Cambios (ARCC) is Peru's reconstruction agency, whose mission is to rebuild infrastructure in 13 regions in Peru affected by devasting El Niño floods of 2017. The severe weather events left 162 dead, 300,000+ homeless and destroyed schools, hospitals, roads and electrical and communications infrastructure.
- Key Objectives of the project is to mitigate coastal flooding, Mudslides, flash floods and detect heavy rainfall

- Consortium
  - GCZ Ingenieros is an EPC contractor
  - Telegrafia a. s. is a Slovakian manufacturer and supplier of innovative products and solutions in the field of early warning and notification systems
  - Advanced Radar Company (ARC) is a leading provider of advanced weather radar and software solutions.
  - The Advanced Environmental Monitoring (AEM) family of companies offers reliable and innovative environmental monitoring and analysis solutions

EXAMPLE: PERU ARCHITECTURE NATIONAL DEPLOYMENT

REAL-TIME OBSERVED SENSOR and RADAR DATA





Satellite

Cellular

Radio

DATA COLLECTION, PROCESSING & ANALYSIS

CONTRAIL®

REPLICATION

CONTRAIL®

ALERTS & DATA MANAGEMENT

DATA EXCHANGE API

DAM SAFETY PROGRAM ADMINISTRATION

Modelling Framework FEWS

INDIVIDUAL

USERS AND ADMINISTRATORS

SMS

WATER MANAGEMENT DECISIONS

ENTIRE NETWORK VIEWS, CENTRAL MONITORING, AND ALERTING

CENTRAL OPERATIONS

ASSAM STATE DISASTER MANAGEMENT AUTHORITY – SEVERE WEATHER EARLY WARNING SYSTEM

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HYDROMET FORUM III
2021

PROGRAM TO SUPPORT SOUTH ASIA REGIONAL DEVELOPMENT IN OPERATIONAL FORECASTING AND SERVICE DELIVERY

SAHF Website: https://sahf3event.rimes.int/

YouTube Broadcast:
https://youtu.be/QAAf326wP00