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InaTEWS

Indonesia Tsunami Early Warning System



InaTEWS

Indonesia Tsunami Early Warning System



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BAKOSURTANAL



BPPT



MENKOKESRA



LIPI



ESDM



BNPB



BAPPENAS



DEPKOMINFO



TNI



DEPDAGRI



DEPLU



DKP



KLH



LAPAN



ITB



POLRI



GERMANY



CHINA



JAPAN



FRANCE



USA

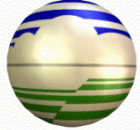




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InaTEWS Launching by the President of Indonesia, 11 November 2008





Institution Arrangement of InaTEWS

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SENSOR INSTALLATION AND SEISMIC MONITORING

SEISMOGRAPH

Planned : 160; Installed : 132 (to 2008)

ACCELEROGRAPH

Planned : 500; Installed: 109 (to 2008)

REQUIREMENT

- ✓ Soil layer
- ✓ electricity
- ✓ Security
- ✓ Noise disturbance
- ✓ Access Road
- ✓ Land Use (Local Gov't)

2. SEA MONITORING

- Tide Gauge (BAKOSURTANAL)
- GPS – Buoy (BPPT)

2. CRUSTAL DEFORMATION

- GPS (BAKOSURTANAL)

DATA PROCESSING

DISSEMINATION INFORMATION

1. AUTOMATIC PROCESSING

- Epicenter location,
- Time,
- Magnitude
- depth



Earthquake Information

2. CROSS CHECK

- Magnitude?
- Location ?
- Tsunami ?



Tsunami Warning

3. DATA BASE

- Historical of Tsunami
- Pre-calculation
- Tsunami Simulation



- Disast Manag Agency
- Plice HQ
- ARMY HQ
- Dept Home Affairs
- LOCAL GOV'T
- DEPT. OF HEALTH
- TV – RADIO STA.
- Dept Comm n Info Tech
- PORT RADIO
- PROVIDER GSM/ CDMA

Emergency Response
MITIGATION & REHABILITATION

- Disast. Manag Agency
- Dept. Intr Affair
- Dept Public Work
- Agency for Rehab and Recon.
- Food & Water (Min. of Public Welfare; Dept. of Social)
- Health, Sanitary (Dept. of Health)
- Risk Management (Dept. of Defense)
- Others (Nat'l Coord Agency for Disaster Mitigation)



Capacity Building

Min. of RT, Universities, Research Institution)



Modelling Database

Research & Development

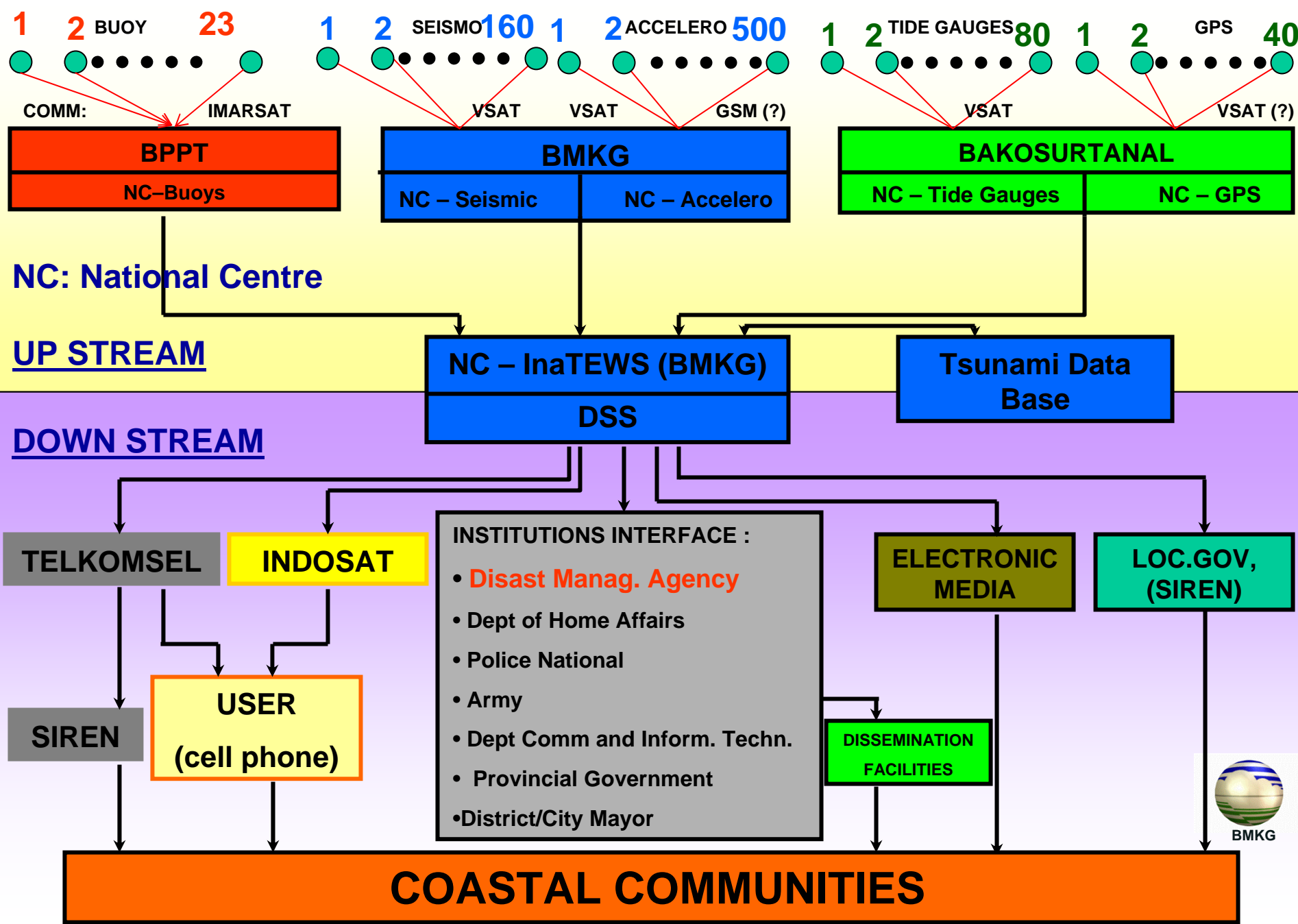
Public Education

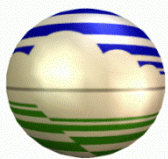
(Min. of RT, Dept. of Education, Indonesia Agency for Science)

Awareness
- Tsunami Evacuation Drill



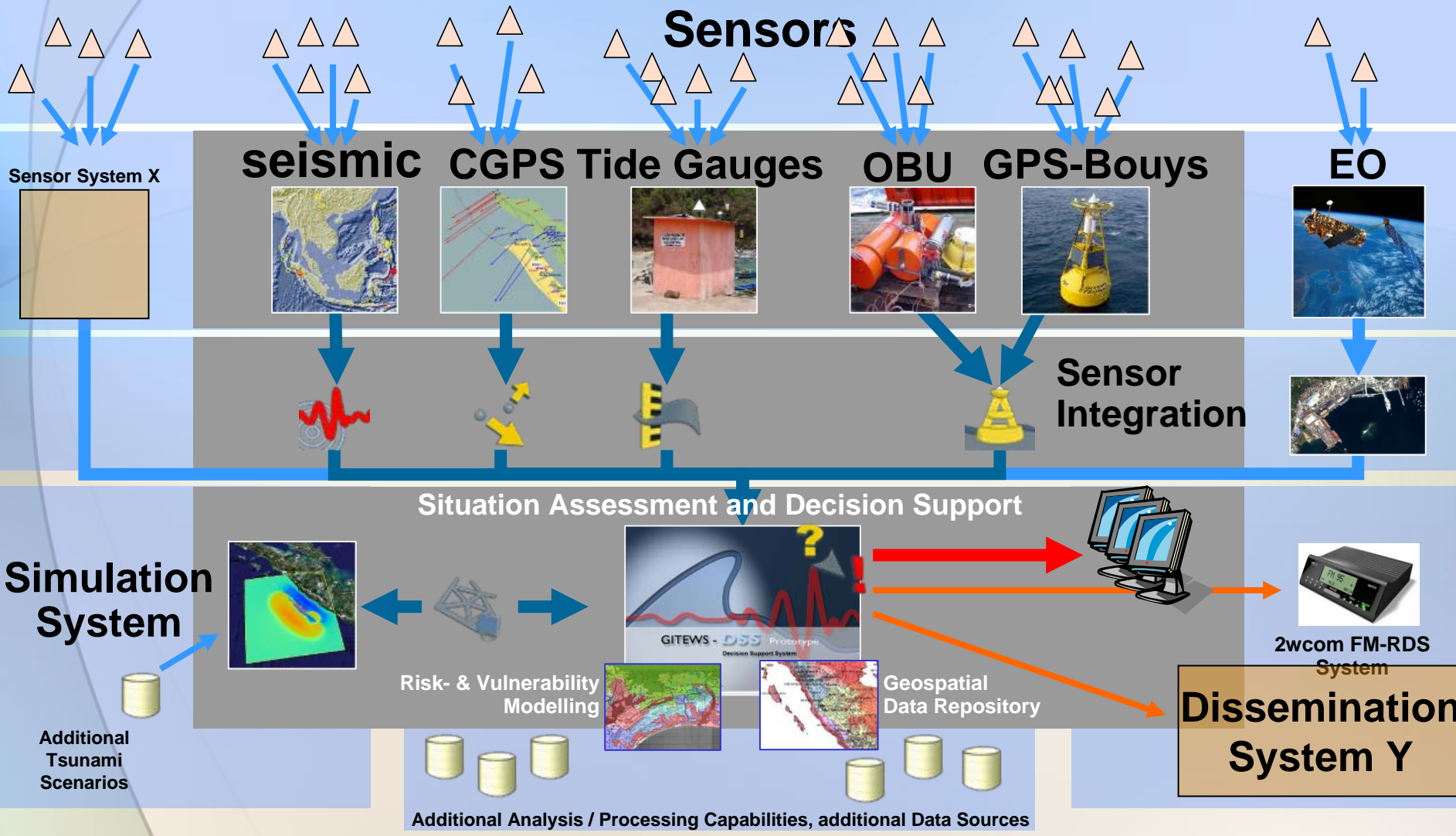
Operation of InaTEWS





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Decision Support System (DSS)



The D-day: Bali, 26 December 2006



Evacuation of 15,000 participants



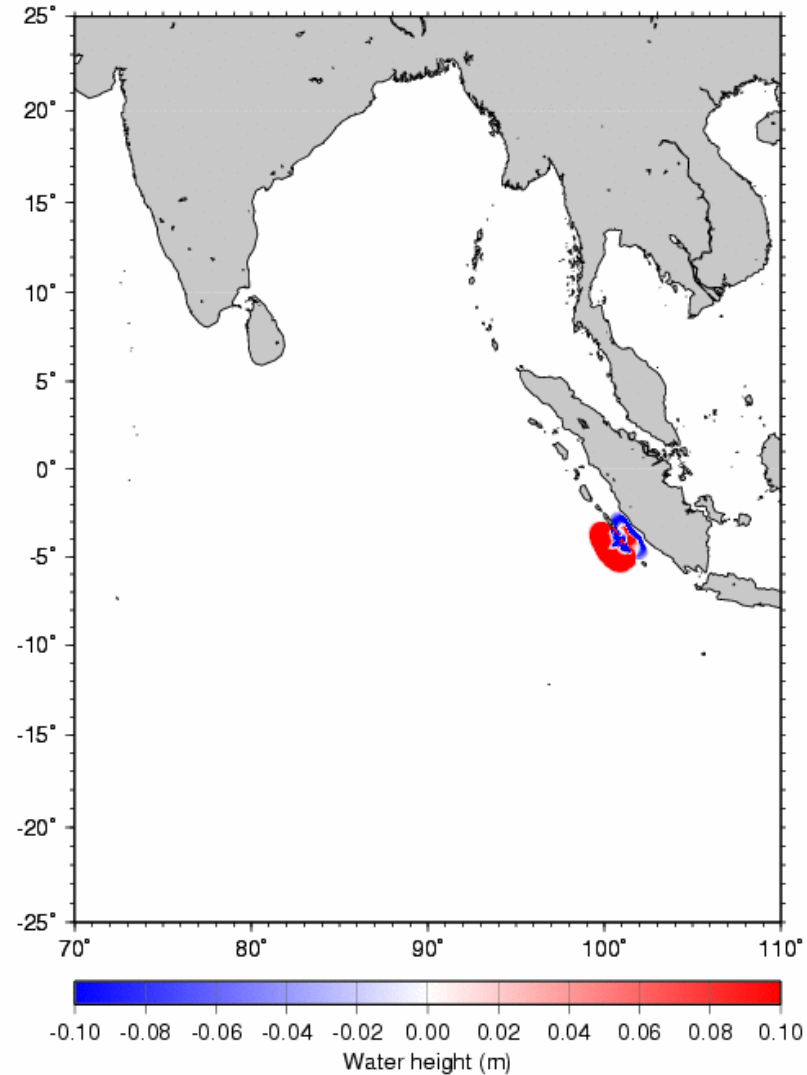
Rescue and “victims”

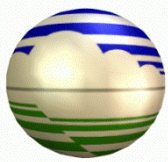




Tsunami Simulation Of Bengkulu Earthquake 2007

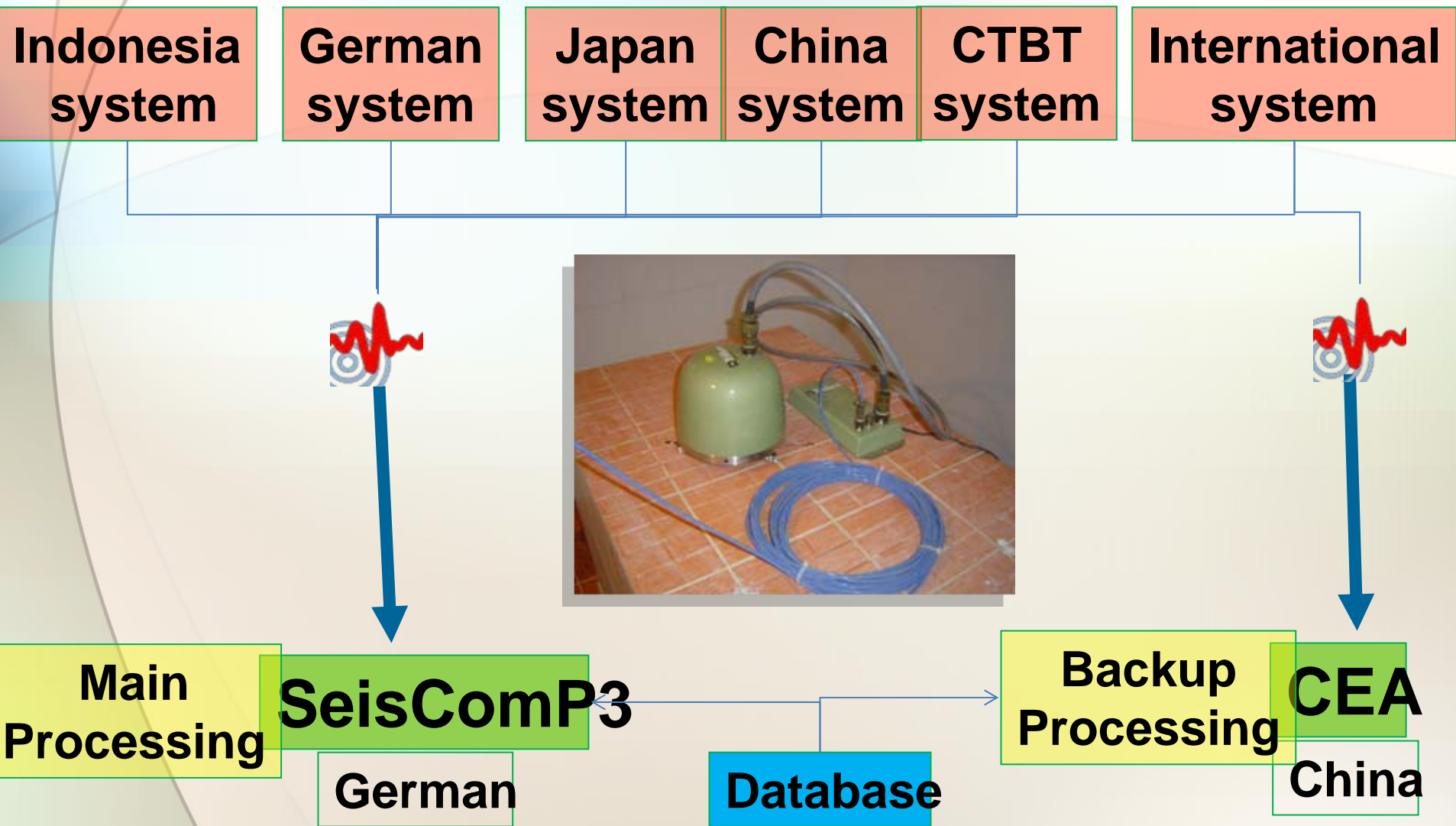
2007 Bengkulu Earthquake 0010 min





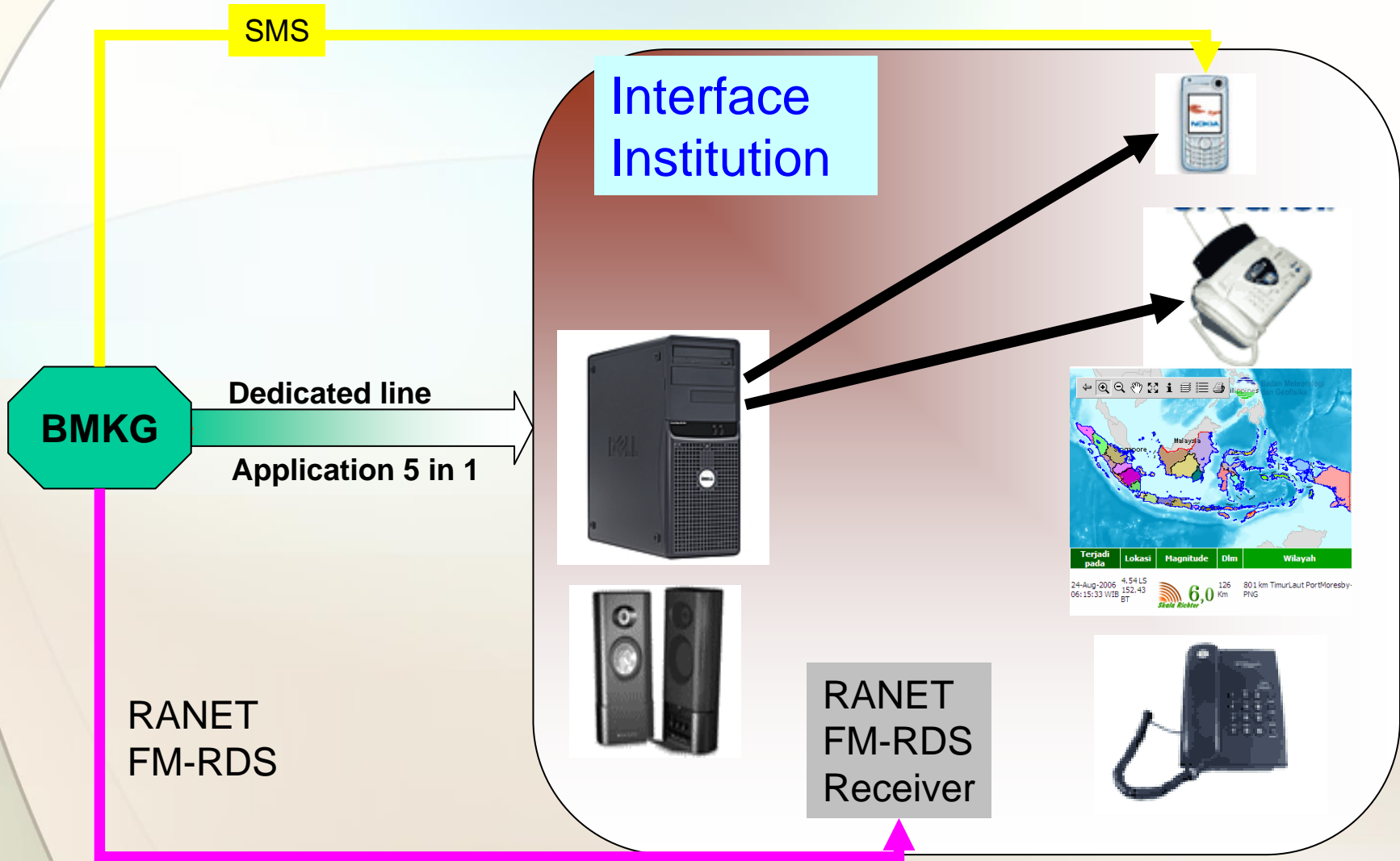
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Seismic Integration System of InaTEWS





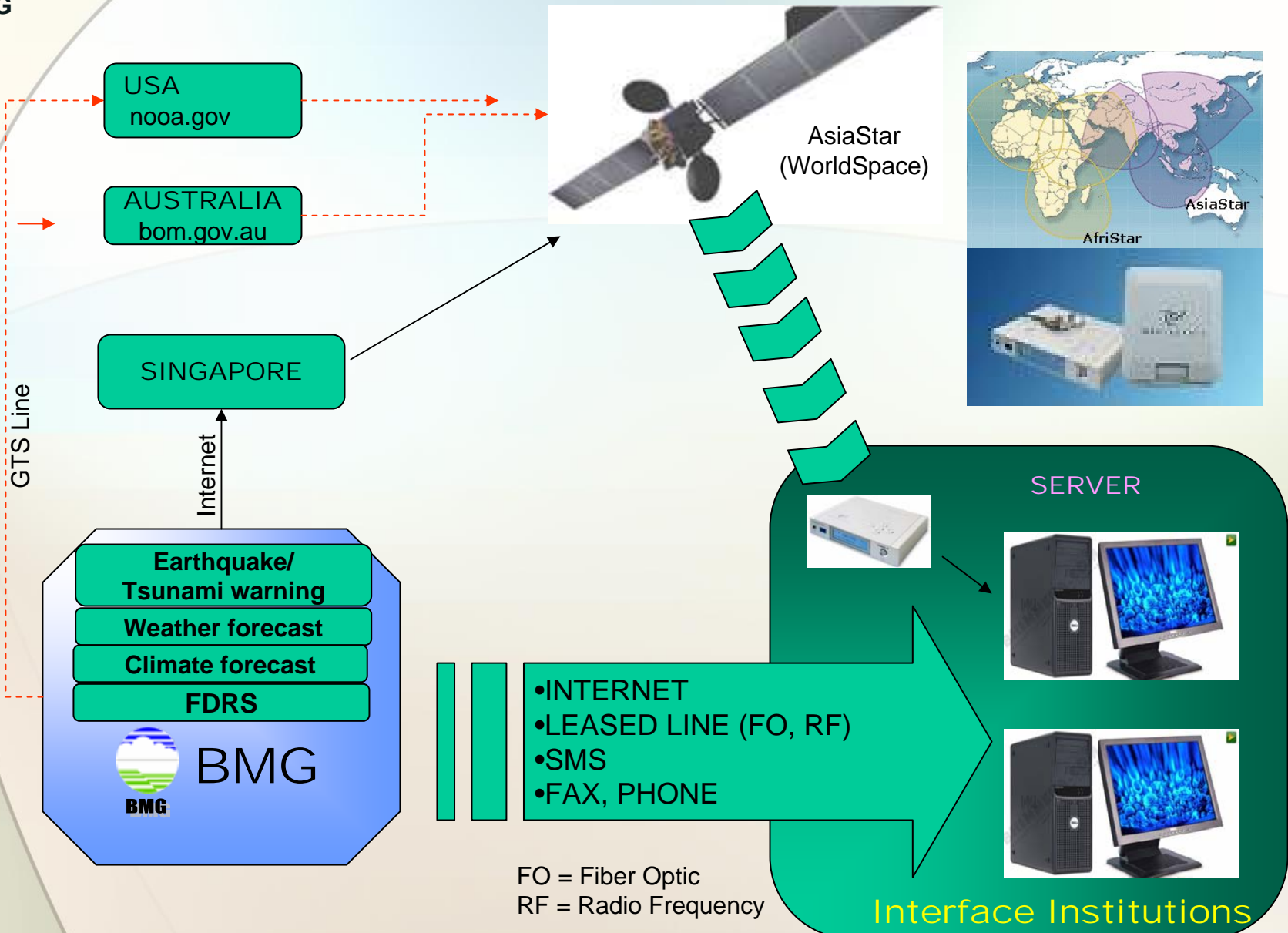
5 in one INFORMATION Dissemination





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MULTI MODA INFORMATION DISSEMINATION



USA
noaa.gov

AUSTRALIA
bom.gov.au


SINGAPORE

Earthquake/
Tsunami warning

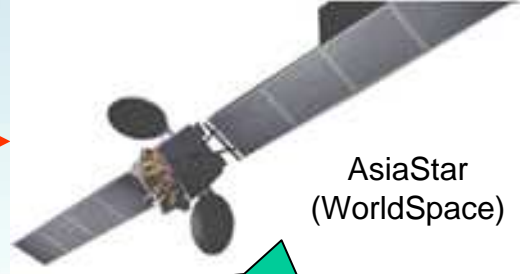
Weather forecast

Climate forecast

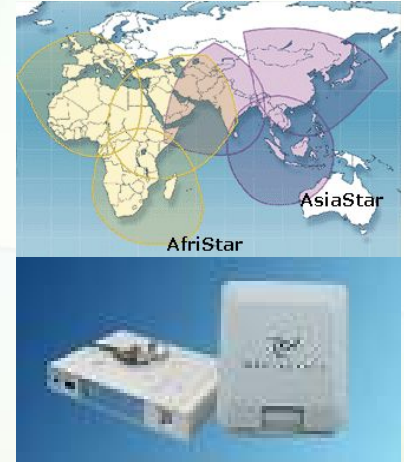
FDRS




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AsiaStar
(WorldSpace)



SERVER



Interface Institutions

- INTERNET
- LEASED LINE (FO, RF)
- SMS
- FAX, PHONE

FO = Fiber Optic
RF = Radio Frequency

GTS Line

Internet



National Warning FLOW to the Public

INTERNET NEWS

Tools
GSM
Phone/Fax/sat phone
GTS
RANET
FMRDS/ALERTUS
Dedicated line
Internet
TV/Radio
HF Radio

Interface Institution
Police HQ
Army HQ
MHA
DMO
Prov. Gov.
District Gov.
MCIT
Media

Public Alerting
Siren
TV/Radio
SMS
FMRDS ALERTUS receiver
email
Speakers
Police siren

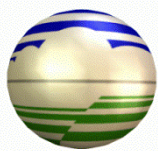
PUBLIC

TIMELY MANNER



Issues on Sustainability Operation and Maintenance

- Funding
- Expertise
- Quality
- Security
- Evaluation



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THANK YOU VERY MUCH
FOR YOUR KIND ATTENTION

METEOROLOGICAL CLIMATOLOGICAL AND GEOPHYSICAL AGENCY
(BMKG)

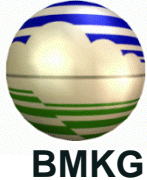


JL. ANGKASA I NO. 2 KEMAYORAN
JAKARTA PUSAT – INDONESIA

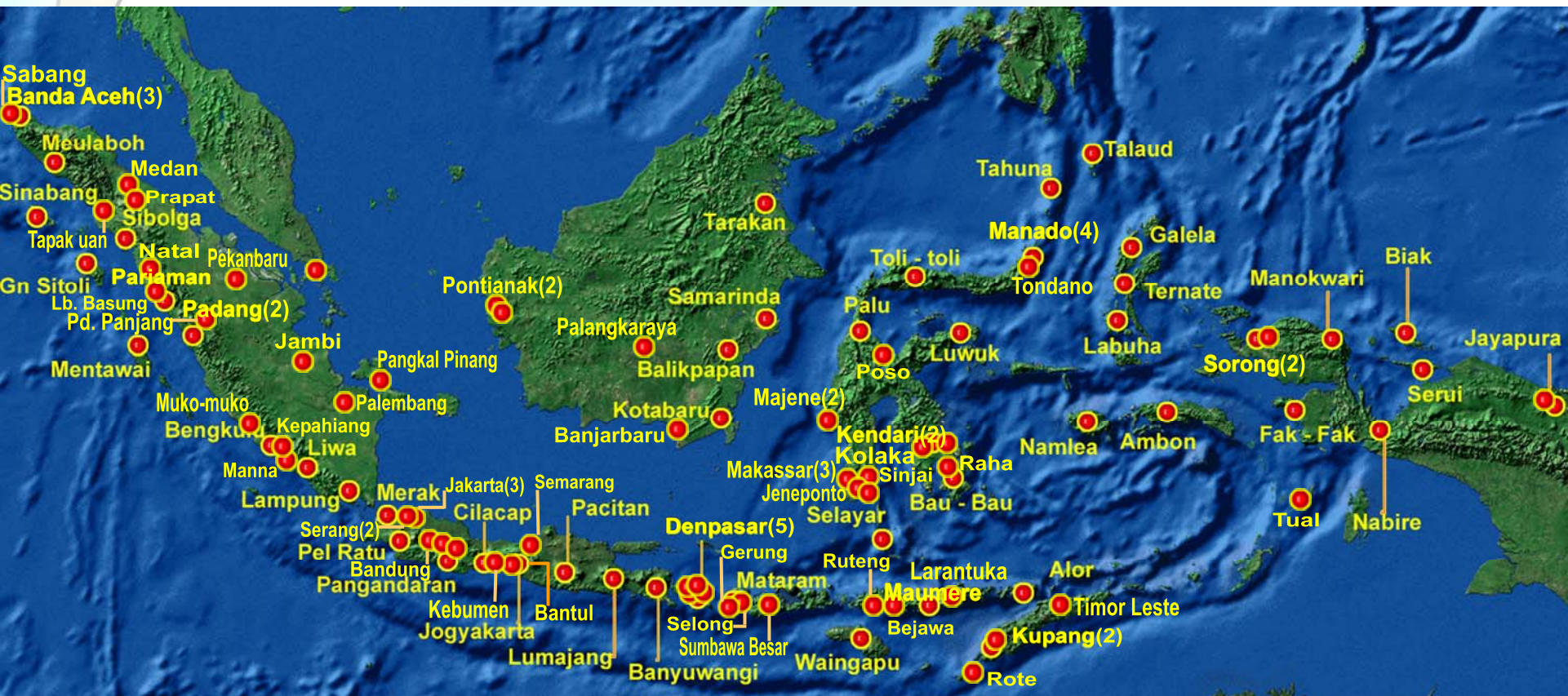
TEL/ FAX. 62 21 6542983

<http://www.bmg.go.id>








NETWORK OF RADIO INTERNET FOR INFORMATION DISSEMINATION 2008 (140 Sites)

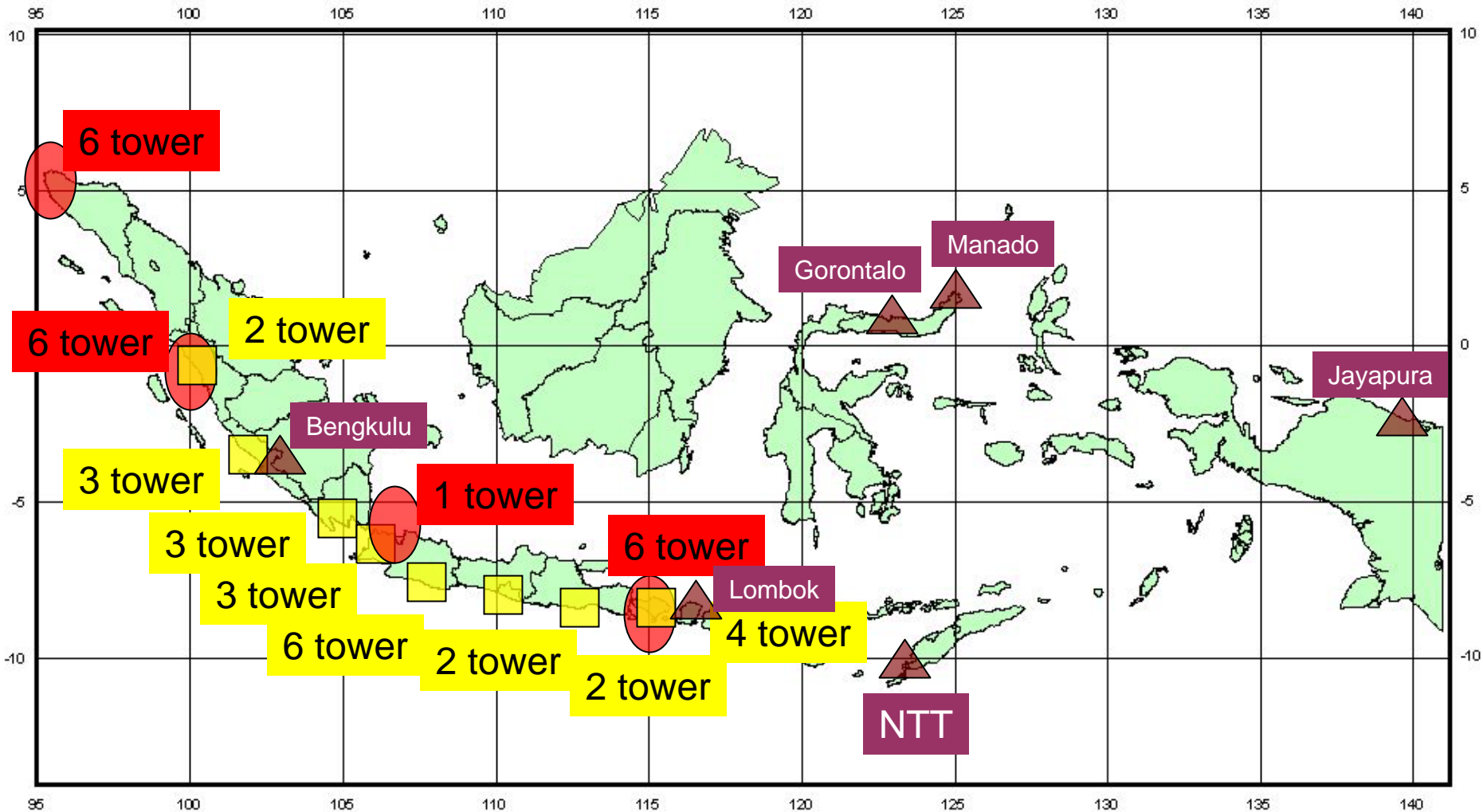




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Sirine Network

-  Sirine Federal Signal
-  Sirine Sanken/Milano (TELKOMSEL)
-  Plan 2009



SIRENS IN BALI



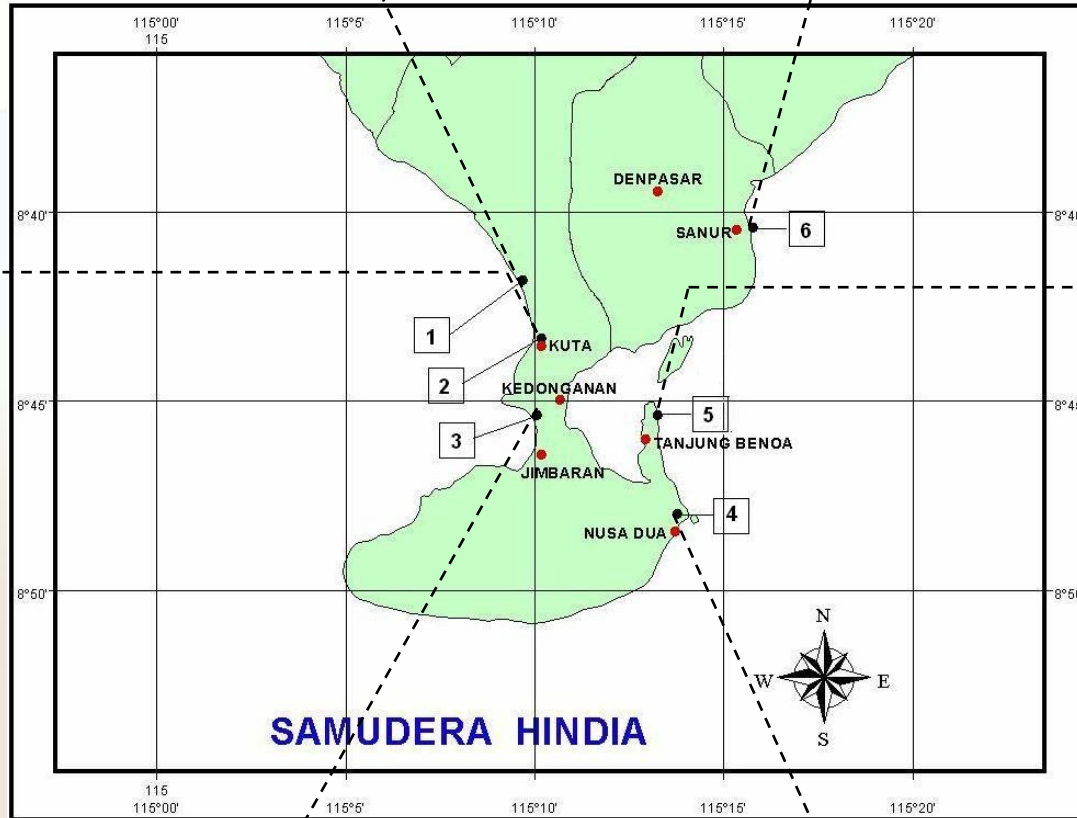
SEMINYAK



SANUR



KUTA



TANJUNG BENOA



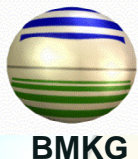
KEDONGANAN



BTDC



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Legal Framework on EWS

LAW	DESCRIPTION
Law No. 24 / 2007	Disaster Management Responsibility of Disaster Management Authority at Nat'l and Regional Scale
Governmental Decree No. 21 / 2008	Disaster Management
Governmental Decree No. 22 / 2008	Funding and Management of Disaster Assistance Operations
Governmental Decree No. 23 / 2008	Participation of International Institutions and Foreign Non Government Organizations in Disaster Management
Presidential Decree No. 8 / 2008	National Disaster Management Agency
Presidential Degree No. 61 / 2008	Reaffirmation of name from BMG onto BMKG (Agency for Meteorology Climatology and Geophysic)
Ministry of People Welfare Decree	Inauguration of InaTEWS



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Seismic stations for ASEAN real time data exchange

