Harimau

GEO Ministerial Summit

Earth Observation for Sustainable Growth and Development

Draft GEO Report on Progress - Annex

Cape Town, 30 November 2007

Table 1. Example Early Achievements by GEO Societal Benefit Area

Disasters: Reducing Loss of Life and Property from Natural and Human and Induced Disasters
- Global Wildland Fire Early Warning System
- Sentinel-Asia
- Standards-based, All-Hazards, All-Media Public Warning
- [redacted]
- Dust and sand storm Saharan monitor

Health: Understanding Environmental Factors Affecting Human Health and Well-Being
- Meningitis Warning System in Africa
- Dust and sand storm Saharan monitor

Energy: Improving Management of Energy Resources
- Solar Data for Developing Countries

Climate: Understanding, Assessing, Predicting, Mitigating and Adapting to Climate Variability and Change
- *TIGGE*
- Seamless Weather/Climate Prediction System
- ClimDevAfrica Initiative

Water: Improving Water Resource Management through Better Understanding of the Water Cycle
- Asian Water Cycle
- North American Drought Monitor

Weather: Improving Weather Information Forecasting and Warning
- Beijing Olympics

Ecosystems: Improving the Management and Protection of Terrestrial, Costal and Marine Ecosystems
- Evaluating African Protected Areas
- *SERVIR*
- *SIGEO*

Supporting Sustainable Agriculture and Combating Desertification
- *SIGEO*
- North American Drought Monitor

Biodiversity: Understanding, Monitoring and Conserving Biodiversity
- Biodiversity Observation Network
- Census of Marine Life

16	[redacted] It is an observation system made of Rain Radars and wind-profilers installed in the Indonesian maritime continent (IMC), to observe IMC-excited global climate variations such as El Nino, with a large potential to prevent hydro meteorological / climatological disasters such as flood not only in IMC but also all over the world Data are openly available on the internet in real time. Collaborating countries are: Japan, Indonesia, Thailand, Vietnam, Myanmar	Three major stations installed and data available.

WCRP/MAHASRI & Asia Monsoon Years (2007-12)

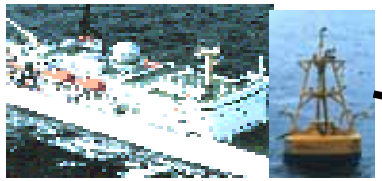
Bali (September, 2007)

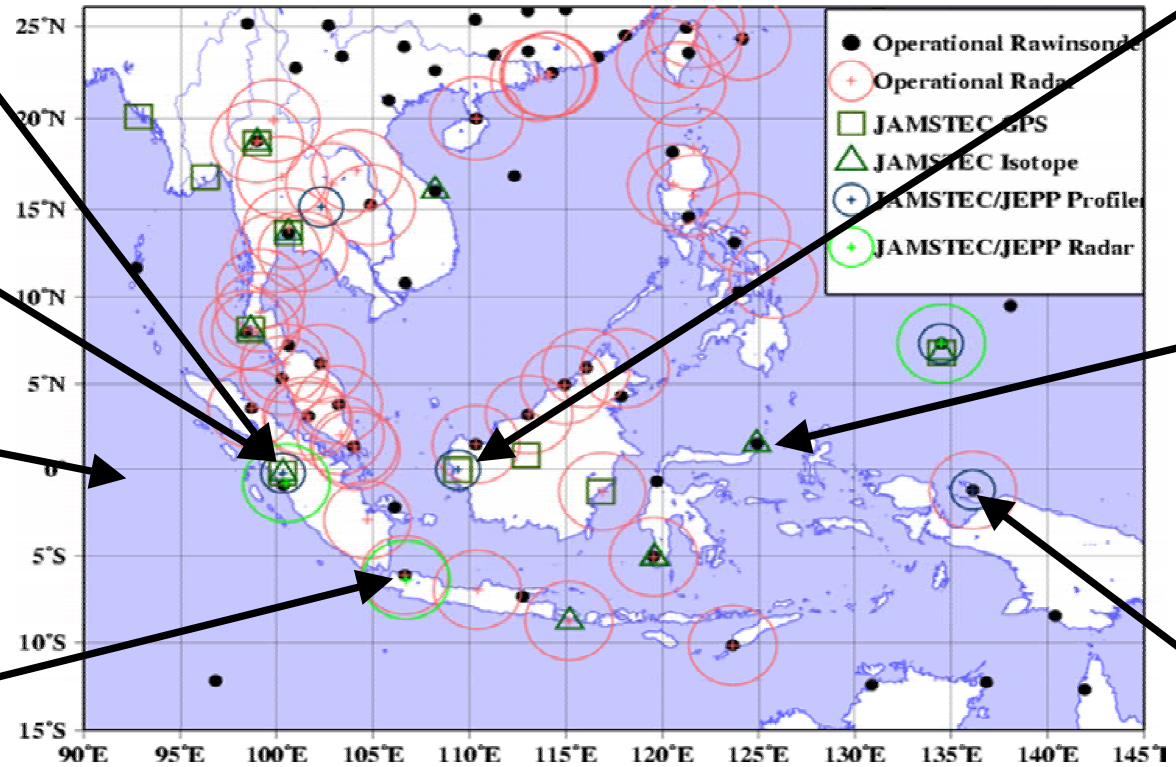
Japan EOS Promotion Program (JEPP) + Indonesian Research/Technology Grant

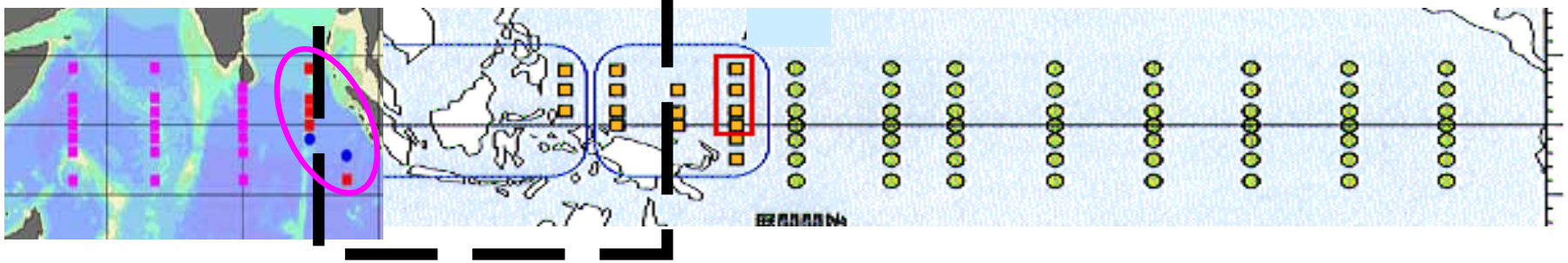
Hydrometeorological Array for ISV-Monsoon Automonitoring (HARIMAU)

http://www.jamstec.go.jp/iorgc/harimau/HARIMAU.html

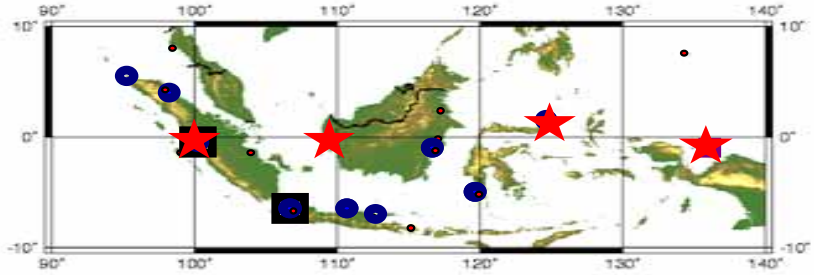
mdy@jamstec.go.jp





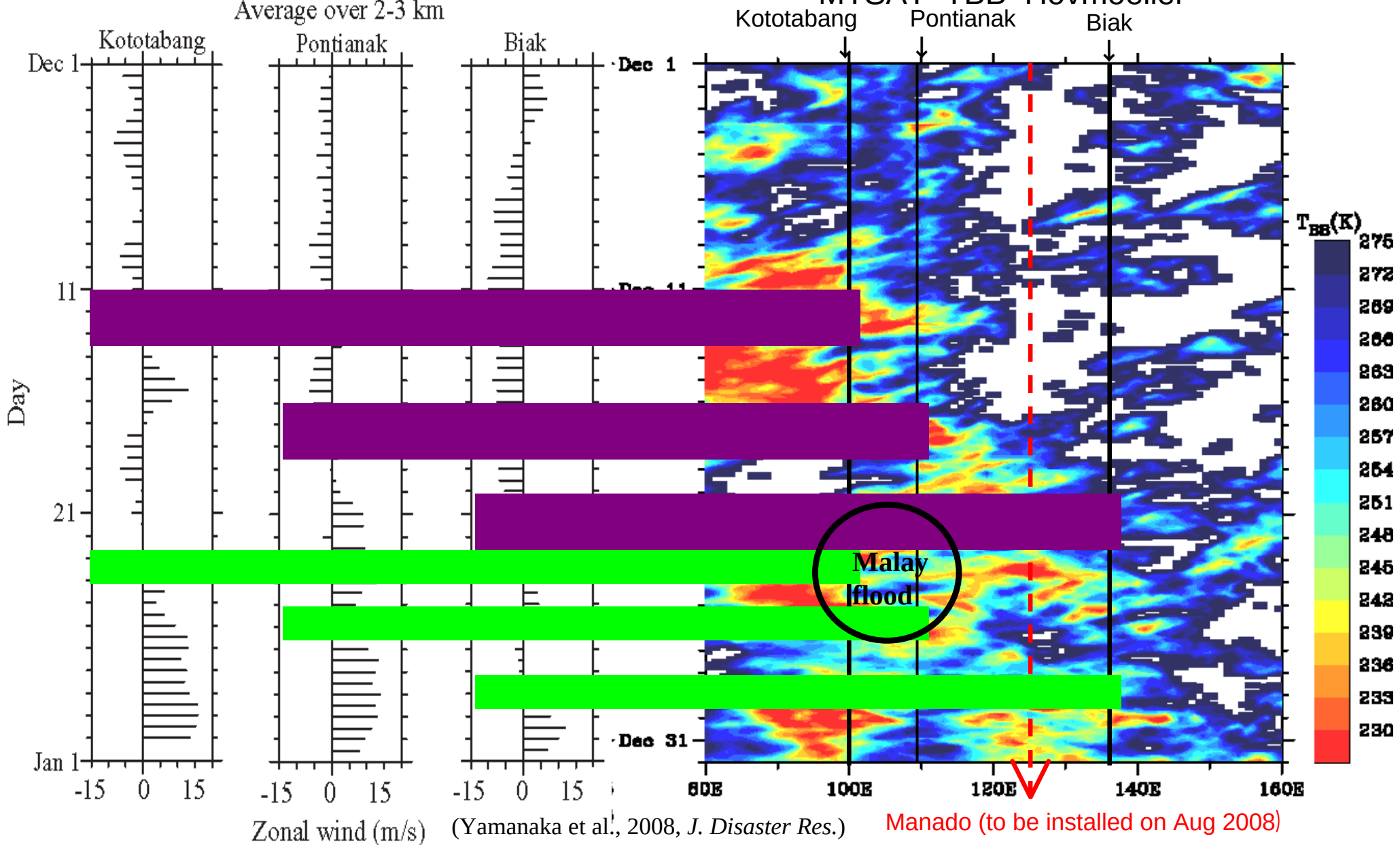


ISVs by WPR network



Average over 2-3 km

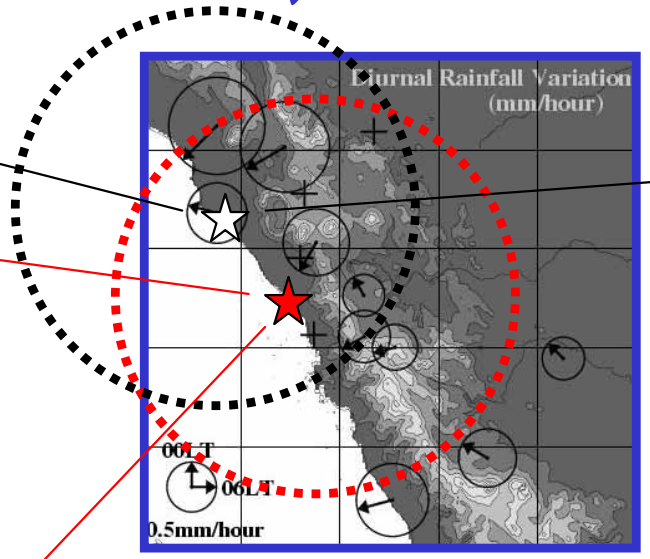
MTSAT TBB Hovmoeller

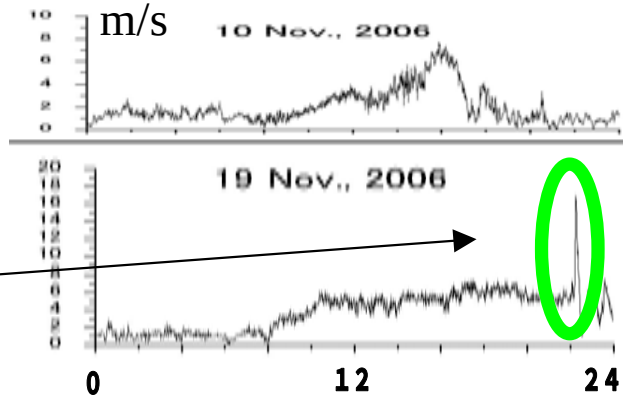


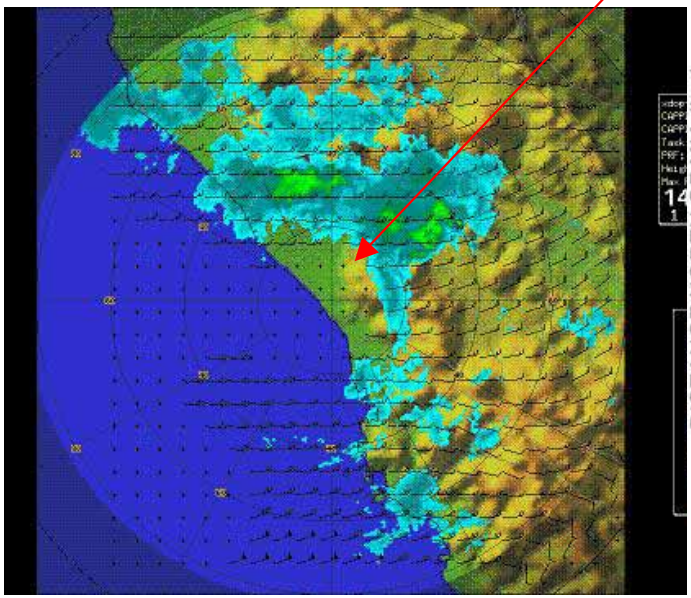
(Yamanaka et al., 2008, *J. Disaster Res.*)

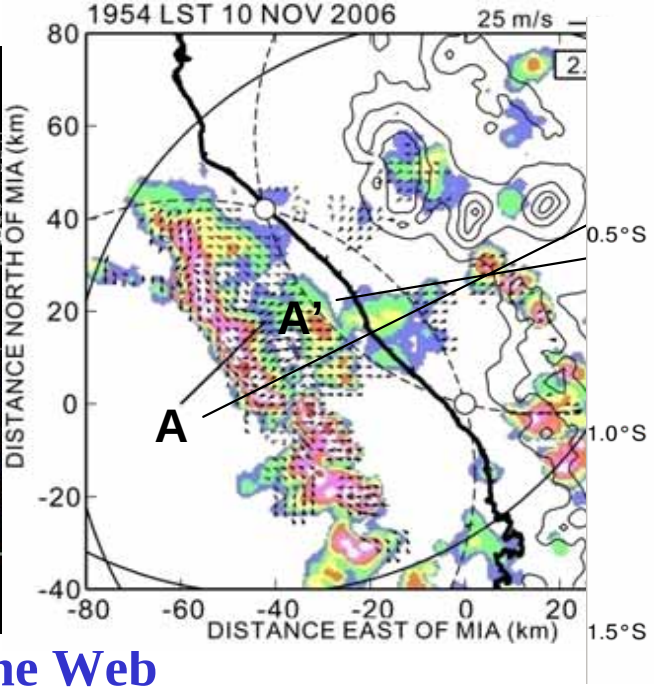
Manado (to be installed on Aug 2008)

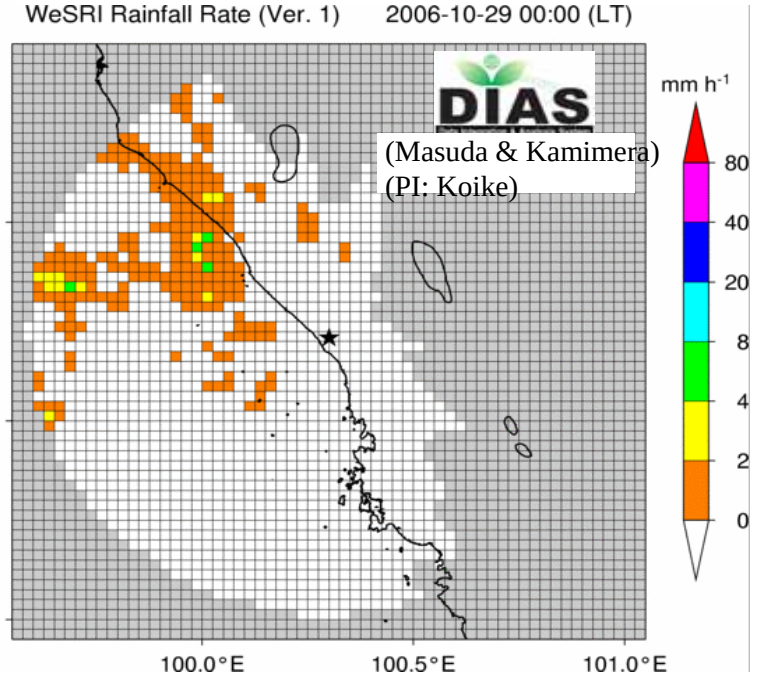
XDRs at MIA & Tiku, Sumatera







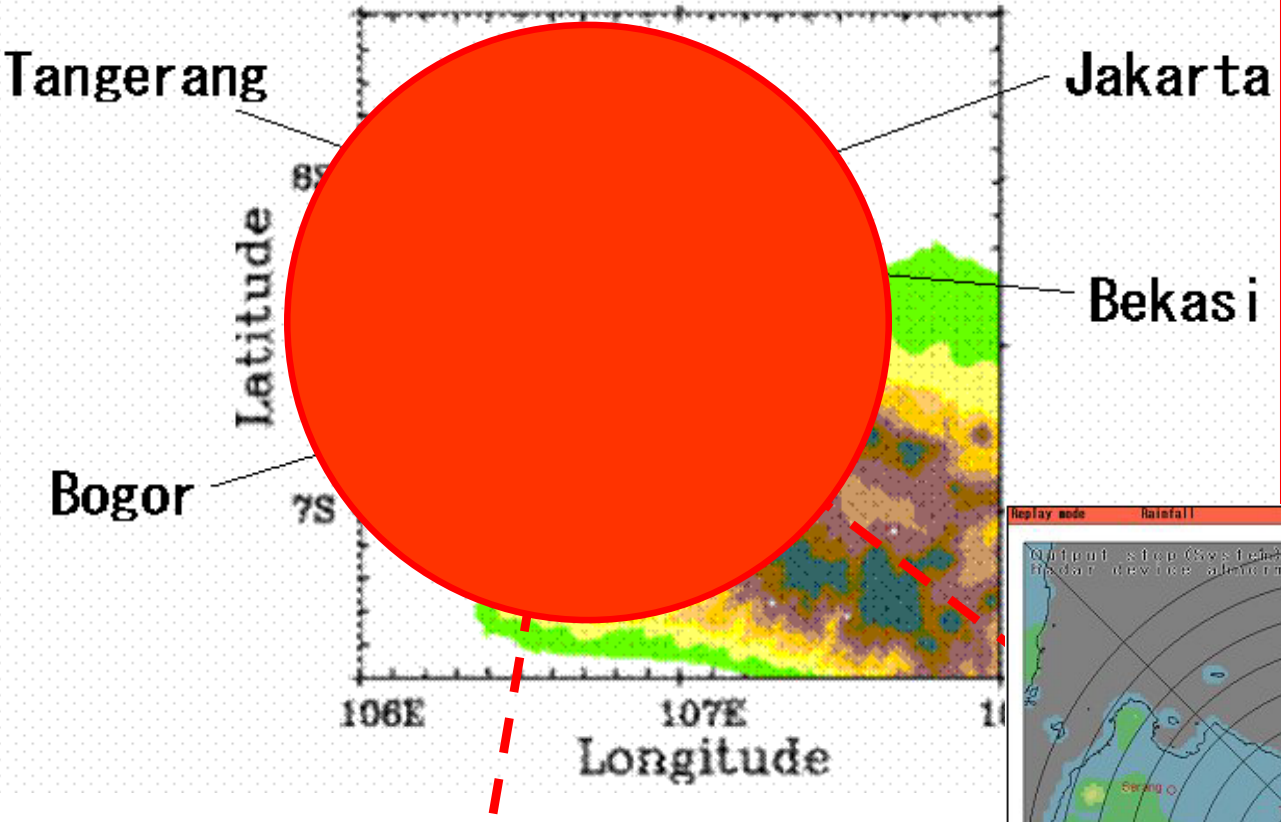


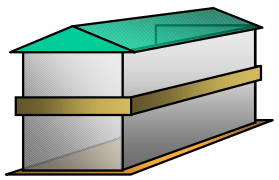


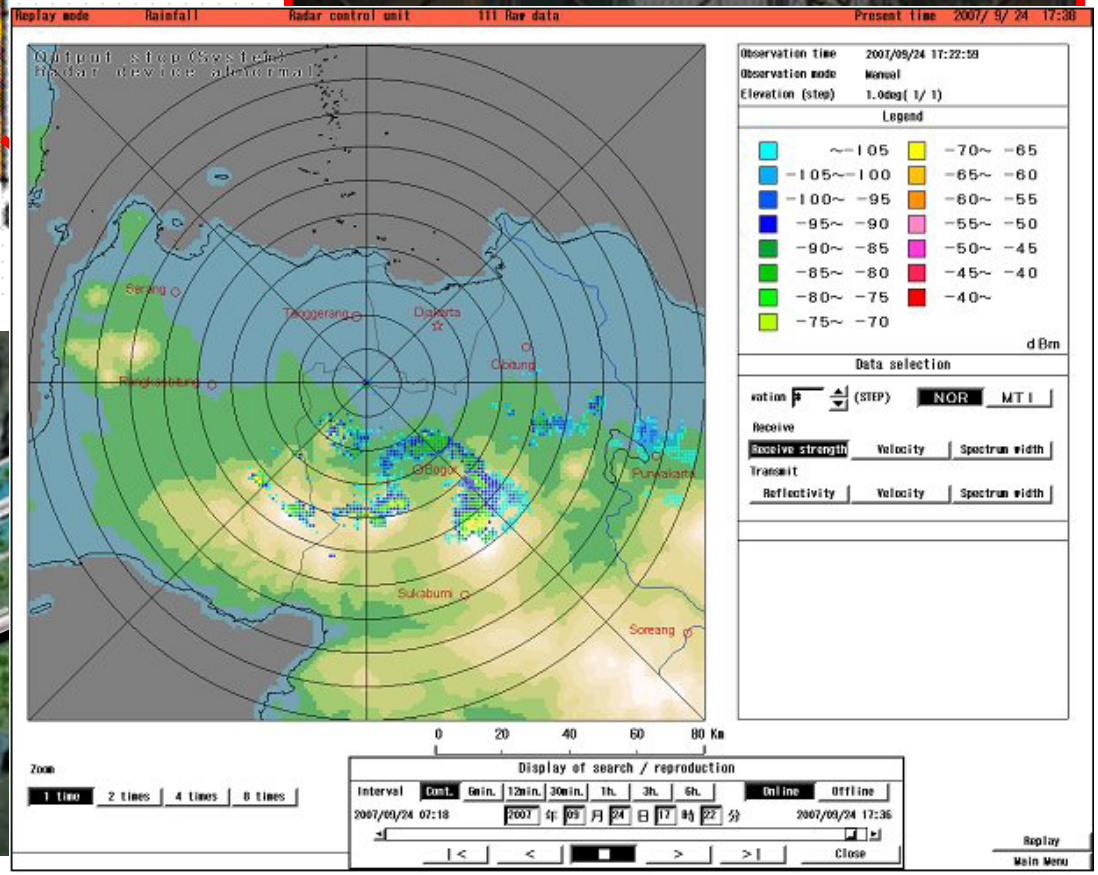
Realtime Display on the Web

http://www.jamstec.go.jp/iorgc/harimau/mia_realtime.html

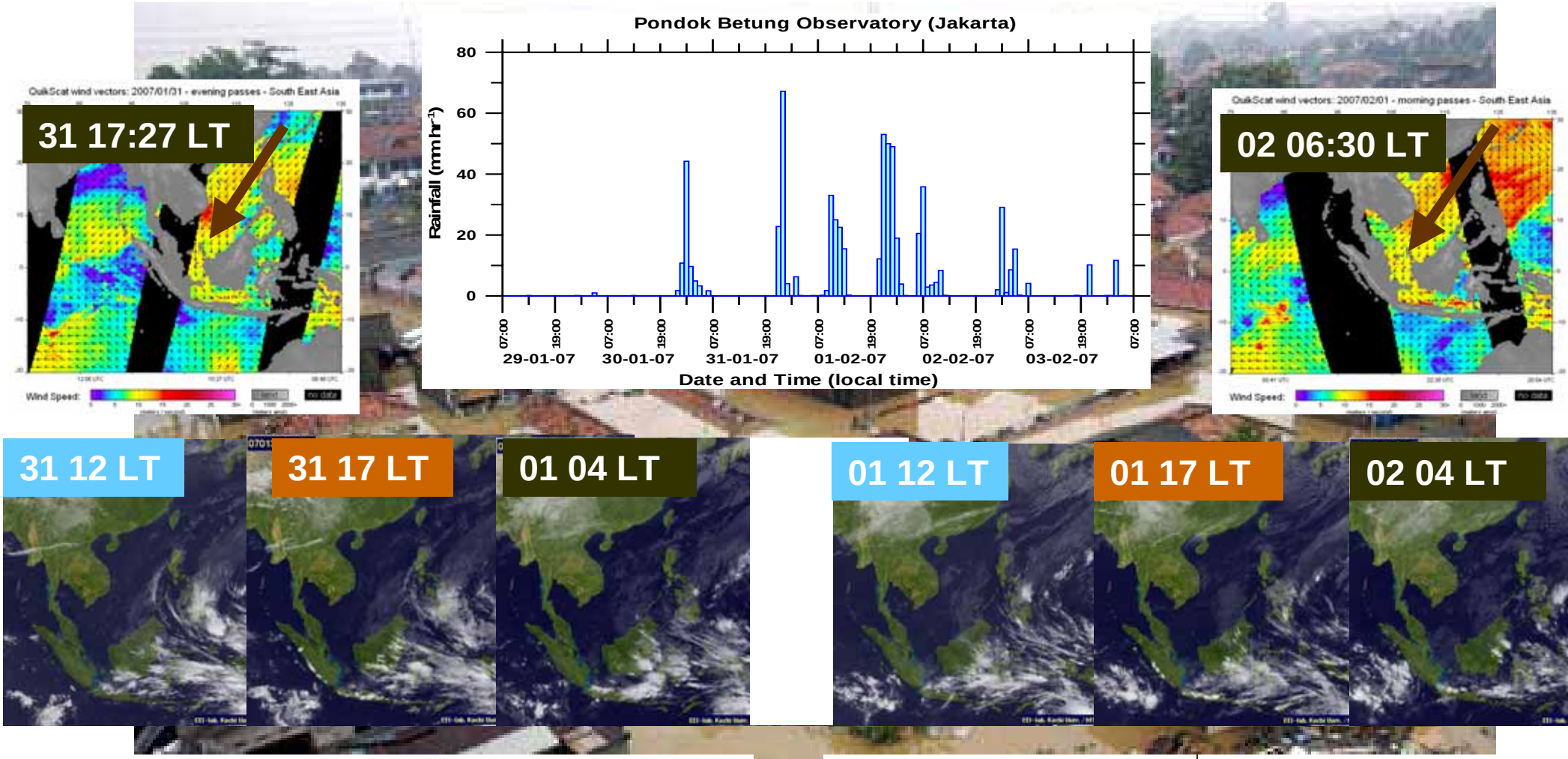
HARIMAU HQ and CDR (Serpong, near Jakarta. West Jawa)





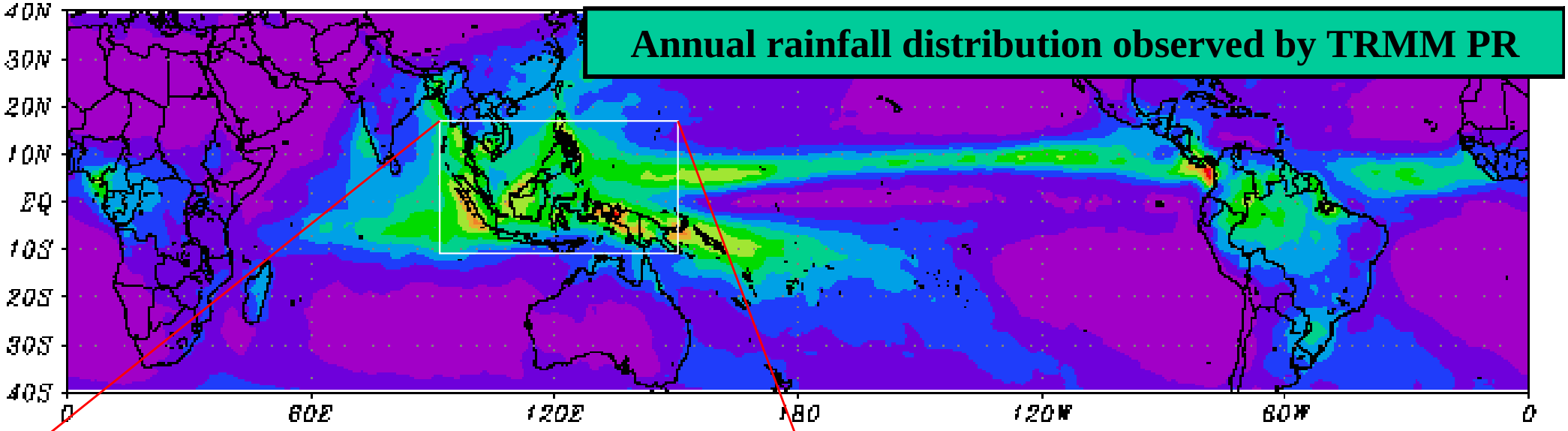


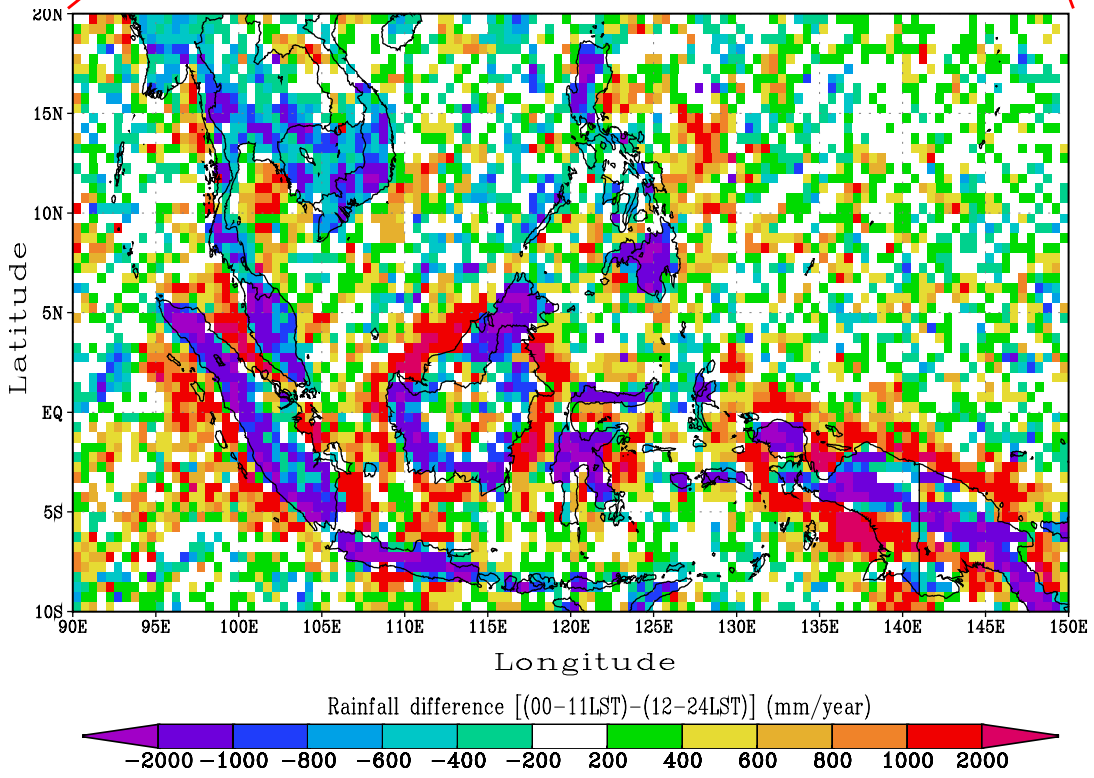
Jakarta Flood in Jan-Feb 2007 by Diurnal cycle + Trans-Equatorial Siberian Monsoon "Cold Surge"



(Wu et al., 2007, *SOLA*)

Importance of diurnal cycle rainfall





(Mori et al., 2004, *Mon wea. Rev.)*

Diurnal cycle rainfall is the major rainfall mechanism in tropical lands.

No “tropical night” in tropics!

Diurnal cycle is enhanced at coastline and mountainside.

IMC is important because the coastlines are longer than real continents.

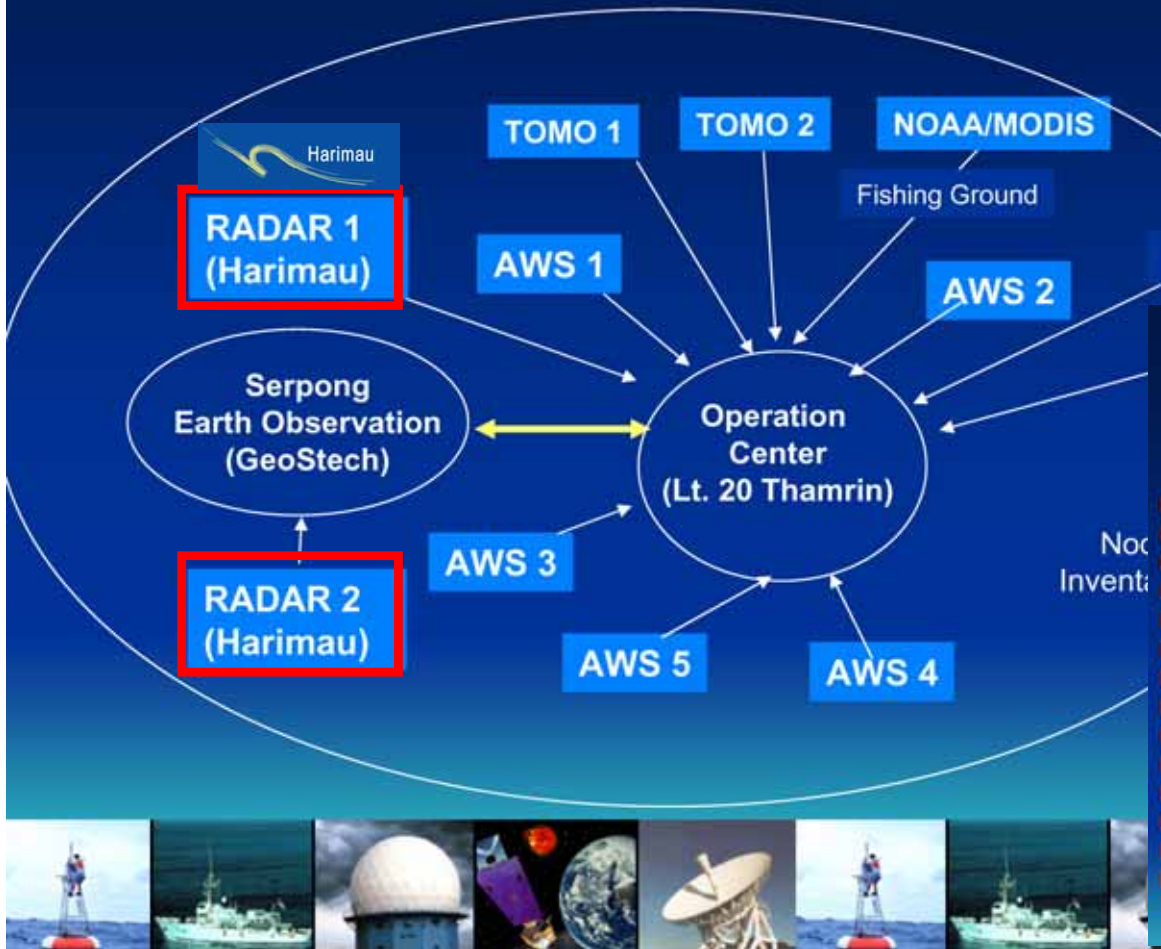
Plan by Indonesian Government

(Financially started in 2008)

Nothing is new in this concept. It's just a different perspective, which hopefully everyone can agree upon....

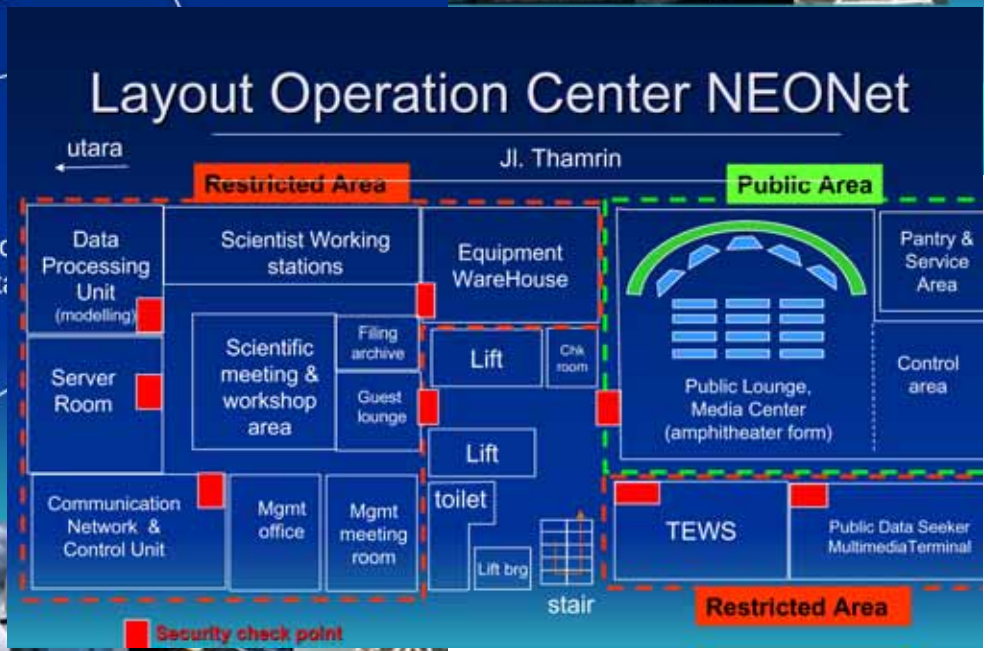
Nusantara Earth Observation Network (NEO-Net)

Skala TPSA/BPPT ☺ (skenario 2007)



...ial, Atmospheric & Oceanic
...g & Mission Control Center:
Technology Node
(was: Laboratorium RS_GIS TISDA)

Layout Operation Center NEONet



“HARIMAU-COE” by a new Japanese governmental policy on Global Issues (FY2008-10)

Japan EOS Promotion Program

Hydrometeorological ARray for Isv-Monsoon AUtomonitoring

(JEPP-HARIMAU)

Meteorological Doppler radars
(Horizontal obs of rain and wind)

Wind Profilers
(Vertical profiles of 3D wind velocities)

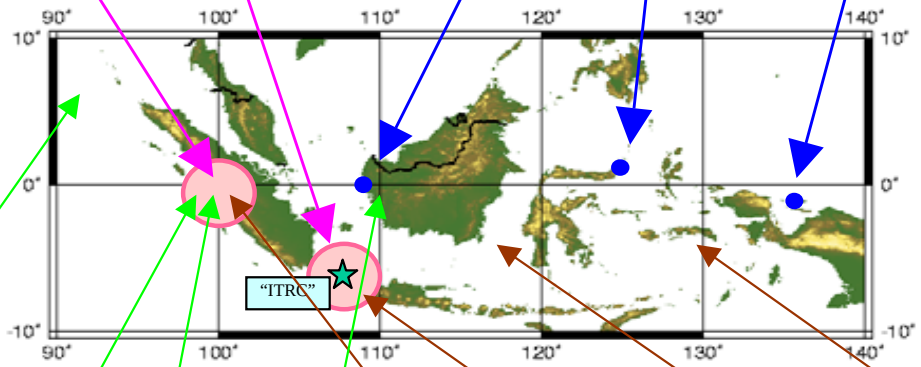

MIA/Padang
(Oct 2006)


Serpong/Jakarta
(Sep 2007)


Pontianak/Kalimantan
(Feb 2007)


Manado/Sulawesi
(FY 2008)


Biak/Papua
(Mar 2007)



<Science promotion>

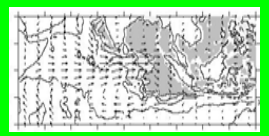
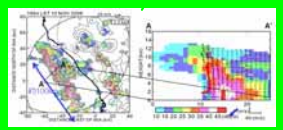
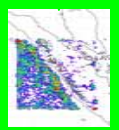
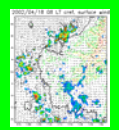
- **Diurnal variation** (DV) self-enhancement through cloud process
- **ISVs (superclusters) and Monsoons** interacting with DV
- **Interannual variations** (such as ENSO, IOD) originated near IMC

<Social benefits>

- **Capacity development** on hydrometeorology and climatology in IMC
- **Disaster prevention** and assessment for abnormal climate in IMC
- **Security for Japanese** (30,000 - 100,000) living/staying in IMC for business/sightseeing

JST/MEXT ⇒ basic research

- Development of next-generation radars/profilers
- Establishment of equatorial (moist & ageostrophic) GFD
- Promotion of interdisciplinary inside/outside of EPS

ODA/JICA/MOFA ⇒ Indonesian side

- Construction of “ITRC” as a COE for tropical sciences
- ”Radar-AMeDAS” like system for IMC
- Collaborative paper production with young scientists