P-DAN Report
University of Tokyo (UT), Japan

4th Joint Project Team Meeting for Sentinel Asia STEP3

The University of Tokyo, Japan

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Our Targets—More Social Impacts

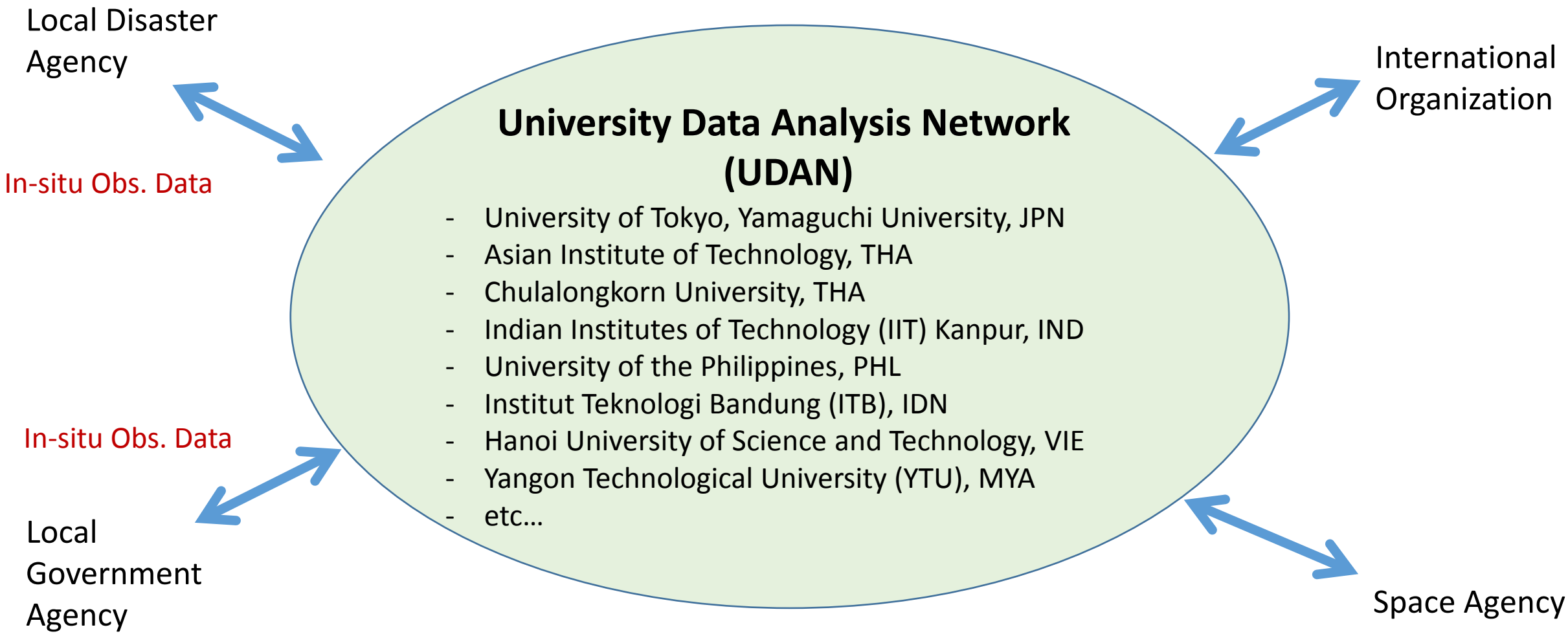
- More usable information to be delivered in a timely manner
  1. Deliver **more satellite images** to society in disasters.
  2. Deliver **more value added products (VAPs)** in disasters.
  3. Help **better informed decision making** by organizations/people.
  4. Achieve **less damages, smoother recovery, and more resilience**.
- More institutions, experts and citizens to participate.
  1. Promote how useful space technologies are ← Lectures
  2. Share how to use space technologies ← Lectures
  3. Demonstrate how benefit from space technologies ← tools & platforms
  4. Operate space technology for disaster risk management

1. Establishment of University Data Analysis Network (UDAN)

- Establishment of **University Data Analysis Network (UDAN)** in Asia, data analysis network based on:
  - University networks and
  - Young researchers

➔”Special sessions of SA” in international conferences to share achievements and to nurture a community.

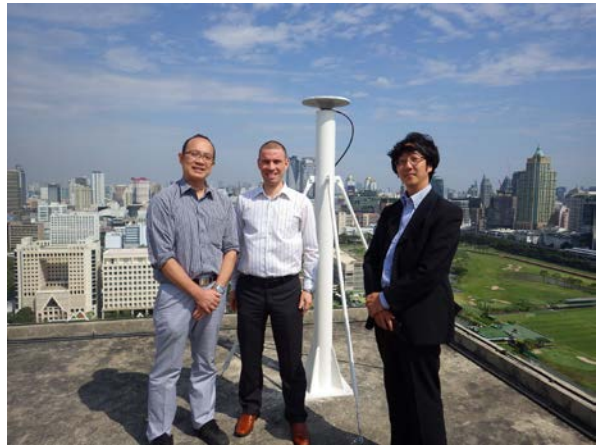
Potential networks for UDAN



University CORS* Network Activity

*Continuously Operating Reference Stations (CORS)

Chulalongkorn University, Bangkok



University of The Philippines, Manila

National University of Laos

GESTISS

http://gestiss.org/en/

University of Indonesia, Jakarta

Joint Experiment and Training

UAV Experiment
with Low-cost GNSS

Bus route monitoring

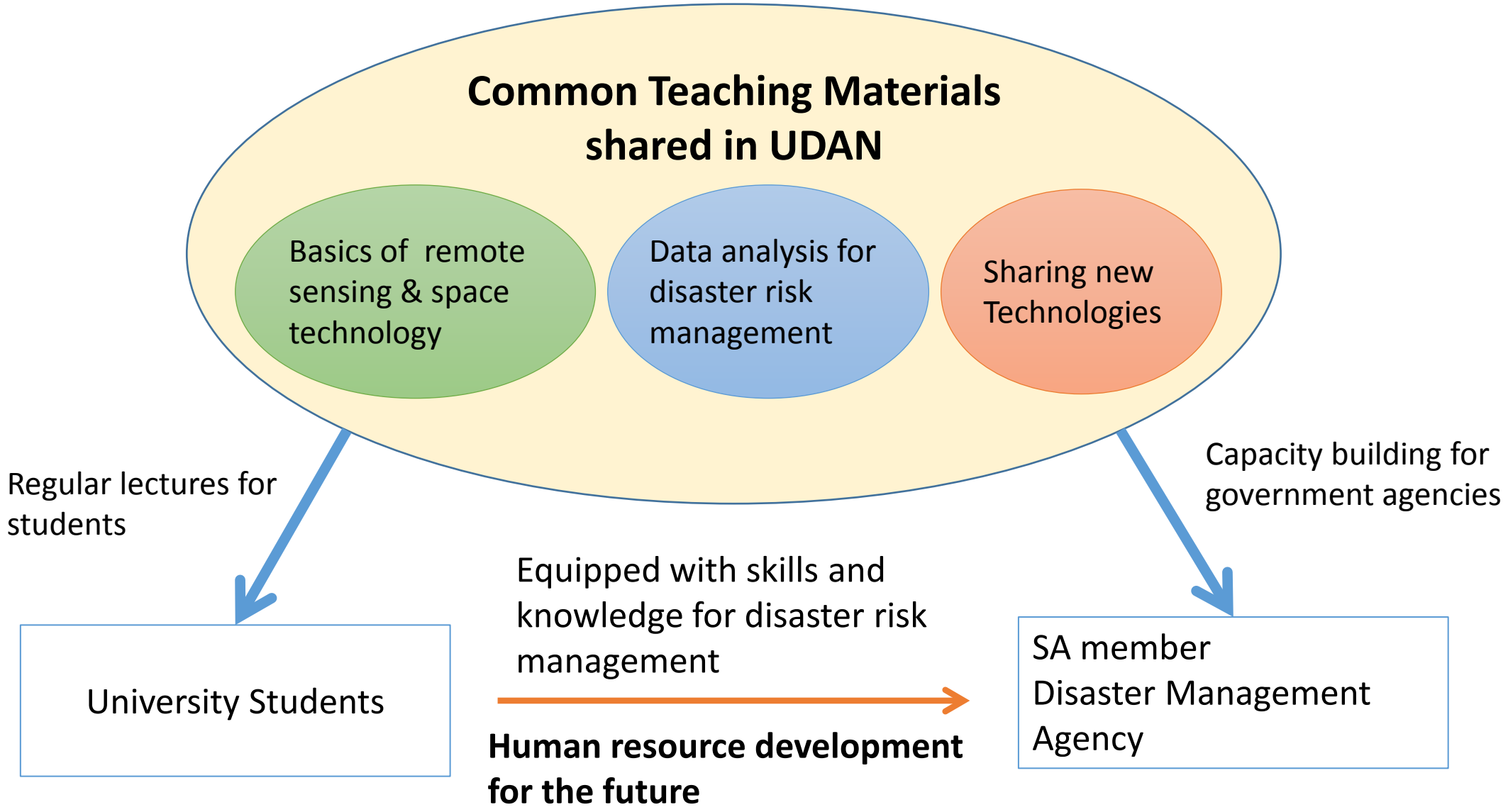
Precise DEM construction

UAV Experiment for
precise mapping

Workshop for studnets

2. Capacity Building with Academia

- Capacity building organized by UDAN
  - For each country (government agencies etc.)
  - For international community (e.g. GIC/AIT)
- Capacity building of skills and knowledge provided by UDAN and partners.
- Development of e-learning material.


Common Teaching Materials shared in UDAN
Basics of remote sensing & space technology
Data analysis for disaster risk management
Sharing new Technologies
Regular lectures for students
Capacity building for government agencies
University Students
Equipped with skills and knowledge for disaster risk management
Human resource development for the future
SA member Disaster Management Agency

3. Collaboration with OSM (OpenStreetMap)

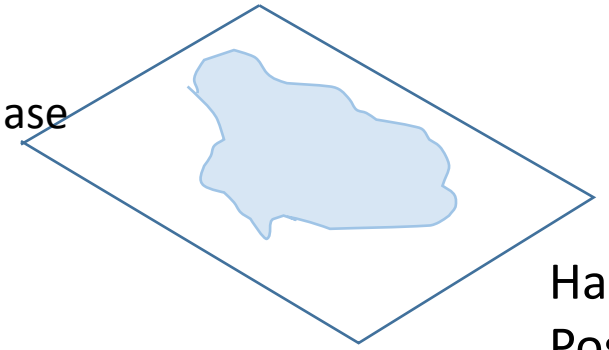
- Collaboration with OSM in response phases.
- Sentinel Asia for damage area detection and OSM for base-GIS map.
- Preparation of base-GIS Data set by OSM.

OSM

SA-DAN

Precise GIS data
in Pre-disaster

Precise GIS data
For Preparedness Phase



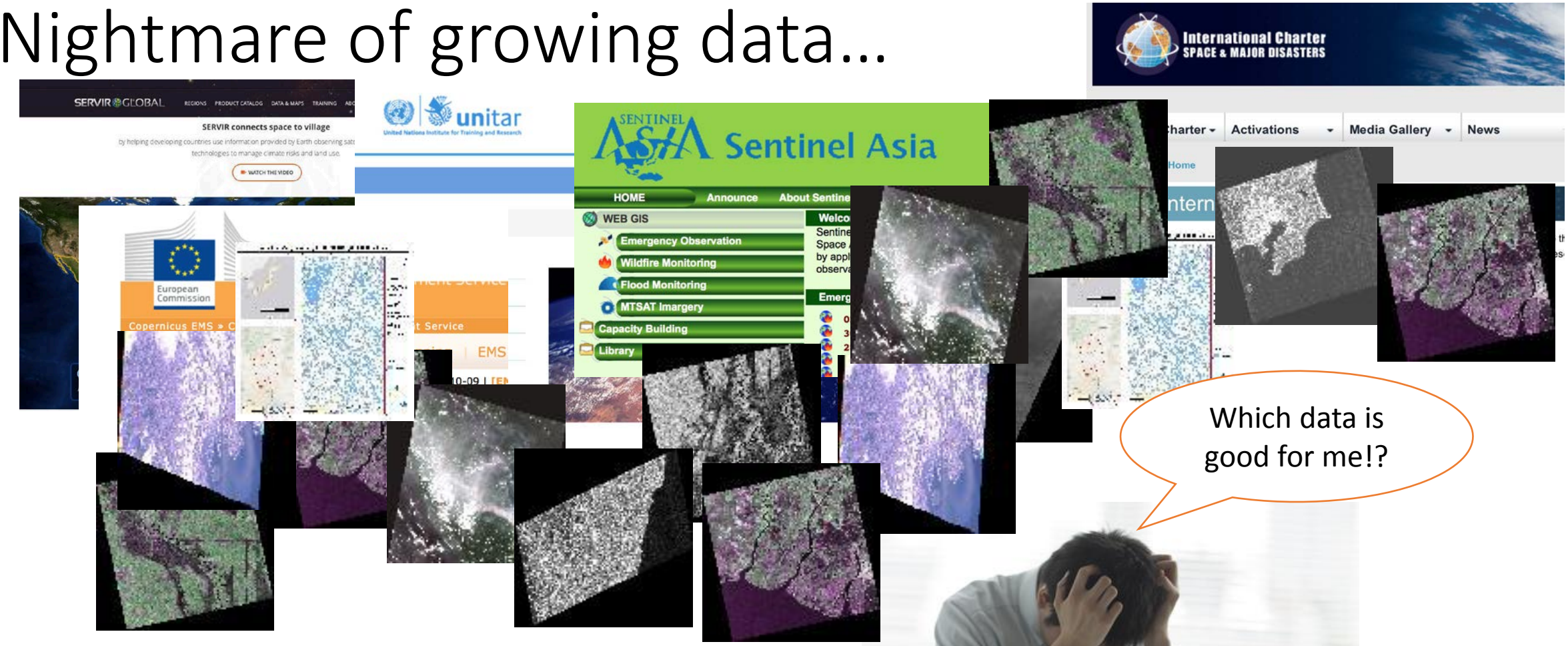
Hazard areas in
Post-disaster

Identification of Affected
Buildings and Infrastructure

4. Advanced Research Projects

- Utilization of Micro-Satellite Data.
- Utilization of SAR Data from Micro-Satellite
- Automated landslide detection by deep learning.
- Automated building detection.

Nightmare of growing data…



Which data is good for me!?

East Japan Great Earthquake 2011 (5500 Scenes)
Thailand Flood 2011 (1500 Scenes),
Nepal Earthquake 2015 (more than 8000 Scenes)

Solution by Automation!!

Utilization of Micro Satellites

Micro SAR Satellites

Data Standardization & Open Source Software

OGC® Making location count.

QGIS

GeoServer

OpenLayers 3.0

OpenStreetMap

PostGIS Geospatial Objects for PostgreSQL

Deep learning

Automated damage detection

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