DISASTER MITIGATION
ENVIRONMENTAL SCIENCE

ASIA PACIFIC COMPETENCE CENTRE

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ASIA PACIFIC CC
E-SCIENCE FOR DISASTER MITIGATION

- Objective of the APCC initiative is to understand deeper and mitigate multi-hazards via e-Science collaboration in the EGI- Engage project.

- APCC is creating an innovative value chain to alleviate the impacts of natural disasters.

    - Multi-disciplinary, Complex disasters, Cross administrative boundaries

    - Observation+Theory —> Discovery —> Modeling —> Analysis & Simulation —> (Loop back and) Early Warning & Mitigation Planning

- Through the e-Infrastructure and collaboration framework, the sharing of data, services, applications and knowledge shortens the capacity gaps among the partners.

APCC PARTICIPANTS

- 9 Institutes in 6 Countries + 2 European Partners (Associate)
- Leading Partner: TW (Academia Sinica) - 50PM
    - Academia Sinica Grid Computing Centre (ASGC), Institute of Earth Science, Research Centre of Environmental Changes, National Central University
- ID: Institut Teknologi Bandung (ITB) - 4 PM
- KR: Korean Institute of Science and Technology Information (KISTI) - 1 PM
- MY: Universiti Putra Malaysia (UPM) - 1 PM
- PH: Advanced Science and Technology Institute (ASTI) - 2 PM
- TH: Thailand National Electronics and Computer Technology Centre (NECTEC): 2 PM
- DE: Leibniz Supercomputing Centre (LSC) - Associate
- UK: University of St. Andrews (UStA) - Associate

ROLES AND CONTRIBUTIONS

Topics X Roles in PMs		Leading Partner	User Community	Technology Provider	Service Provider	
User Support & Training		ASGC	ID(1), KR(0.5), PH(0.5), TH(0.5), TW(4)			6.5
Disaster Mitigation	Earthquake & Tsunami	ASGC	ID(2), PH(1), TW(9)	TW(8), DE(1)	PH(0.5), TW(1)	22.5
	Typhoon, Storm Surge and Extreme Weather	ASGC	ID(1), TW(7)	TW(6), DE(1), UK(2)	TW(1)	18
	Aerosols Trans. and Urban Heat Island	ASGC	TW(7)	TW(6)	KR(0.5), MY(1), TH(1.5), TW(1)	17
			27	24	6.5	64

SCHEDULE AND DELIVERABLES

- APCC will be the incubation and support center for the regional sustainability development by the EGI-based infrastructure and collaborations in the long run. Outcomes of this project could be accumulated and support much complicated scenarios in the future. The created value chain to alleviate the disasters has never happened in this region.
- Deliverables
  - PM 9: Provide the tsunami wave propagation simulation web portal to the public.
  - PM 14: Release prototype of WRF-based weather simulation web portal.
  - PM 19: Finish two high risk tsunami subduction zones scenario analysis in Asia Pacific region
  - PM 24: Depending on the data collected, one of the two alternatives will be delivered.
    - Release the prototype of WRF-Noah-UCM on UHI simulation of a city in a partner country;
    - Apply WRF/chem tracer modelling study to demonstrate the biomass-burning transport mechanism and its impact on air quality.
  - PM 29: Design larger scale multi-hazards simulation attempting to reduce the uncertainty of climate change assessment.