Disaster Mitigation Competence Centre Project Meeting

Coordinator: Simon Lin

June 28, 2016

Agenda

- Introduction (Simon Lin)
- From Previous Meeting in June, 2015 (Eric Yen)
- Progress Report (Eric Yen)
- Partner Status Report (All Partners)
- Discussion
- Future Events
- AOB

From Previous DMCC Routine Meeting in May 2016

- Date & Time: 1630-1730, May 31, 2016
- Participants: Peter and Jelina(PH), Matti(LRZ) and Vicky, Eric (TW)
- Agenda and Materials:
  - https://indico.egi.eu/indico/event/3026/
- Action Item
  - Partners please provide observation data (from rain gauge, radar, weather station, etc., as well as the bathymetry data) according to the requirements of case studies (All partners)

Case Study & Collaboration Model

Partner	Selected Case	Required Data Sets	Status	Check Point	Simulation Framework
PH, TW	Typhoon Haiyan	Doppler Radar, Tidal gauge, air pressure, wind speed, typhoon path; hourly resolution	Finish 1st numerical study by combining atmospheric and ocean model	Demo @ APAN41	gWRF, iCOMCOT
MY, TW	Flooding 2014-15		First simulation by AS (global data) was done.	Demo @ APAN42	gWRF, Scouring
TH, TW	Flooding 2011 (Comparative Study)		Simulation by NECTEC and AS (global data) were done. Aim to improve the accuracy and EWS.		gWRF, Scouring
ID, TW	Forest Fire	air pollutants such as, CO, NOx (NO, NO2), SO2, O3, PM10, PM2.5 etc. with high temporal resolution	Data Collection and User Engagement	Demo @ APAN42	gWRF
Nepal, TW	Flooding 2014	High altitude and geographical features need to consider	Waiting for more necessary observation data		gWRF, Scouring
TW, PH	Tsunami Impact Analysis in South China Sea	Bathymetry, fault geometry, historical events,	In progress. Depends on high resolution bathymetry data from partners		iCOMCOT

DE will provide advanced visualization support whenever it is possible

Requirements for Case Studies

- Malaysia Flood (MY and TW)
  - Status update from discussions in past weeks is needed
- Forest Fire Dust Transportation Modeling and Simulation (ID and TW)
  - Data Requirements: high temporal resolution measurements of air pollutants such as, CO, NOx (NO, NO2), SO2, O3, PM10, PM2.5,etc.
- 3D Visualization of Typhoon Morakot (DE and TW)
  - Typhoon data in workable format

Typhoon Haiyan Case Study

- What have been done by Jan. 2016
  - Established the computational grid system of the open-ocean scale in the Philipines
  - Coupled WRF model and in-house COMCOT storm surge model
  - Simulated complete storm surge propagation induced by Typhoon Haiyan in open ocean
  - Analyzed maximum storm surges of Typhoon Haiyan in Philippines
- What will be done before Aug. 2016
  - Considering tidal effect with the global tidal TPXO model
  - Simulating full hydrodynamic storm surge propagation of open-ocean, offshore and nearshore scales
  - Analyzing surge inundation induced by Typhoon Haiyan with high-resolution topographic and bathymetric data
  - Validating model results with observation data (gauge data and estimated run-up height data)
- Future Applications
  - Web Portal Services will be developed
  - Requirements: 1) observed water elevation; 2) meteorological records (air pressure and wind velocity); 3) inundated range and run-up height; 4) typhoon best track; 5) Doppler Radar Data

Collaboration with DRIHM
(Distributed Research Infrastructure for Hydro-Meteorology)

- Test Case on DRIHM Gateway: Typhoon Haiyan
- Opportunities
  - Leverage WRF Web Portal Services without duplicate efforts
  - Will make use of regional infrastructure
  - Collaborate on modeling and high performance simulation by e-Science for disaster mitigation
  - Extend collaborations, services and infrastructure to wider regions
- Virtual meeting will be held for further discussions on case study, WRF portal integration, etc.

Next DMCC F2F Meeting at APAN42

- Date & Time: 9:30 - 17:30, August 4th, 2016
- Chair: Denis F. Villorente (PH) ; Co-Chair: Eric Yen (TW)
- Agenda
    - Session I: Chaired by Simon Lin (TW)
        - Introduction (Denis, Simon and Eric), 40 min
        - Application of numerical model on extreme weather and environmental studies (CY Lin), 50 min
    - Session II: Chaired by Simon Lin (TW)
        - The Applications of Advanced Numerical Simulation on the Tsunami and Flooding Hazard Mitigation (TZ Wu), 50 min
        - Forest Fire Case Study (ID), 30 min
    - Session III: Chaired by Denis F. Villorente (PH)
        - Malaysia Flood Case Study (MY), 30 min
        - Thailand Flood Case Study (TH), 30 min
        - Typhoon Haiyan Case Study (PH), 30 min
    - Session IV: Chaired by Denis F. Villorente (PH)
        - Advanced Visualization on Typhoon Morako (DE), 30 min
        - DESTCloud, now and the future (Hiroki Kashiwazaki, Osaka University, JP), 30 min
        - Discussion, 30 min

Future Meetings and Events

- Future Routine Project Meeting (last Tuesday of each month)
  - 16:00 - 17:00, 30 August, 2016
- Disaster Mitigation WG Meeting and DMCC face-to-face Meeting at APAN42, Aug 4th, 2016, Hong Kong (Full day)
  - https://www.apan.net/meetings/apan42/session.php?id=95
- EGI Flagship Event: Digital Infrastructures for Research 2016
  - http://www.digitalinfrastructures.eu
  - 28-30 September, 2016, Krakow, Poland
- ECW 2016 – ENVIRONMENTAL COMPUTING WORKSHOP – ESCIENCE 2016
  - ECW2016 is part of the official programme of the eScience 2016 conference (Baltimore, Maryland, USA – October 23rd to 27th 2016).