

Disaster Mitigation Competence Centre Project Meeting

Coordinator: Simon Lin

June 28, 2016

Agenda

- Introduction (Simon Lin)
- From Previous Meeting in May, 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: Bani Lara(PH) and Simon, Eric (TW)
- Agenda and Materials:
 - <https://indico.egi.eu/indico/event/3009/>
- Action Item
 - Deliverables of DMCC could be found at
 - <https://documents.egi.eu/public/ShowDocument?docid=2784>
 - Update progress and case studies status on the project wiki (Eric)
 - 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)



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, NO_x (NO, NO₂), SO₂, O₃, PM₁₀, PM_{2.5}, etc.
- 3D Visualization of Typhoon Morako (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 Philippines
 - 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.

From EGI-Engage

- Feedback from EGI-Engage 1st Year Review
 - <https://indico.egi.eu/indico/event/2893/>
- EGI Tutorials, Training, and Webinars
 - <https://indico.egi.eu/indico/category/114/>
- DRIHM - EGI DMCC Collaboration Meeting
 - <https://indico.egi.eu/indico/event/2985/>
 - Eric will experiment with the WRF features of the DRIHM portal by importing one typhoon model. Antonio will introduce the WRF features to Eric in a skype call. Use the DRIHM VO in Europe for these tests.
 - Organise the next teleconference with focussing on technical structure of more complex DMCC workflows. Identify next steps in implementing those workflows in the DRIHM portal.
 - Move towards an integrated global community. Particularly
 - Create a global VO (merge of DRIHM.EU and EuAsiaGrid VO and supercomputers?).
 - Connect relevant environments to the compute infrastructure.
 - Ensure high Technology Readiness Level for all connected elements (compute infra, gateway, models, data services). Such an infrastructure could be part of the next EGI flagship project (where trans-national/virtual access will be also supported).
 - Antonio has new connections to similar institutes/initiatives in the Caribbean region. He will include Eric and EGI in related discussions to build a truly global community.

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, 25 July, 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 – submission deadline **13th June**).