Submission and Registration Form

Please enter the relevant information in the fields below, giving an appropriate explanation when necessary. You may add supplemental pages and supporting data. If necessary, you may be asked to provide additional documents.

I. Title—Title of presentation:

Flood Warning System for Middle Region of Myanmar

II. Author(s)—Full name (First name family name):
(If you are already planning a project, please include the names of all team members)

Ms. Phyo Pa Pa Tun
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Ms. Thida Aung
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III. Organization(s):
(If you are already planning a project, please include the institutions of all team members)
University of Computer Studies, Yangon

IV. Topic selection:
(Select one from the topics listed in "Call for Presentations")
Smart Society: ICT applications for community and environment
Disaster mitigation

IV. Abstract:
(Describe the purpose, background, objectives, content, plans for connected projects, expected results/outcomes, etc.)

Flooding is a crucial disaster for people and need to protect and reduce of damage from it. Flooding often occur in globe because of Climate change and rise of water level. In 2015 and 2016, Myanmar faced flooding in most part of region. It was destroyed environment and human societies by flood. The four worst hit regions are Magway Division, Sagaing Division, Chin State and Rakhine State. Thus, in that regions need to monitor, focus and reduce from flood hazard. So, it is important to develop early alarm system for human societies.

In July 2015, Myanmar faced severe flooding and affected up to 1,000,000 people. Torrential rains that began on 16 July and it destroyed farmland, roads, bridges and houses. In 2016, the heavy rain and floods that began in June continue to affect hundreds of thousands in Myanmar. According to figures from Myanmar's Relief and Resettlement Department, the worst hit regions by numbers affected are Magway (204,365), Mandalay (107,200), Ayeyarwady (74,989), Bago (53,357) and Sagaing (27,996). Therefore, it is need to notify people who live in affected regions to reduce damage from hazard.

According to the above factor, I want to do flood alarm system for Mone Dam in Magway region which is the most affected region in flood damage. It is situated in Sadoktaya Township that is the Middle West region of Myanmar and built across on Mone Creek. Mone creek is the largest sub region flow through the Sidoktaya Township and started from MounKhaw Nu Thon. As it is a hill region, there is only one main land road to Salin (37 miles). If it will break, the two towns, Sadoktaya and Pwintbyu, and other villages in low lying area are very dangerous. So, it is necessary to develop the flood alarm system and decision support system (DSS) to prevent flooding.

The objectives of this system are:
- To monitor the climate change and rainfall amount for water level elevation
- To focus on water storage capacity and water surface area in dam for warning the flood event
- To support decision for response emergency event
- To reduce and prevent from damage of flood
- To save humans' lives

A GIS integrates information in a way that helps us understand and find solutions to problem. Data about real-world objects is stored in a database and dynamically linked to an onscreen map, which displays the real-world objects. People use a GIS for four main purposes: data creation, data display, analysis, and output. In this system can be used to estimate inundation area with GIS and Soil Conservation System-Curve Number (SCS CN) for hydrological process that input as rainfall depth, runoff depth and land use. To obtain depth from water surface in raster and DEM, MINUS function in 3D Analyst Tool can be used.

Myanmar is lack of controlling for flood and natural disaster. The system wants to do early warning system for flooding affected on Mone Dam in Myanmar. This system consists of four components: Gathering requirement data, Data Processing, Flood Model and Decision Support System (DSS). After gathering data, stored in spatial database and process it. And then, it calculates water volume in dam to know about the robustness of dam. Inundated area in that region by using flood model to estimate the flood level and suggest the decision to reduce emergency condition.

GIS has become effective geospatial tool for assessing hazards and risk associated with flood disaster, most especially for the simulation of flood characteristics. In 2015 and 2016, Myanmar faced flooding in most part of its region because of rivers and creeks to overflow with rainwater and flooding low lying areas around waterway. Flood alarm system is used to prevent damage from flood hazard combine with GIS, Flood model and DSS. This system can alarm the affected flood region to reduce risk of flood, prevent natural hazard and response for emergency conditions.

V. Speaker information:

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VI. Support for speaker—circle or underline any that you wish to request:

- Round trip fare at discount economy class
- Accommodation