

Towards the Implementation of the Understanding Lightning and Thunderstorms for Extreme Weather Monitoring and Information Sharing in the Philippines (ULAT) Project

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Monitoring and understanding thunderstorms are key components of mitigating the effects of torrential rainfall and typhoons. The Philippines, where year-round numerous thunderstorms are experienced, the integration of lightning data has the potential to provide short term forecasts of thunderstorms, further meteorological studies, and supplement disaster risk response strategies.

This presents the activities and updates on the Understanding Lightning and Thunderstorm for Extreme Weather Monitoring and Information Sharing in the Philippines (ULAT) Project. The ULAT Project aims to deploy a highly dense lightning detection network scattered throughout Metro Manila to gather, analyze, and archive lightning data in order to provide thunderstorm “now-casting” and supplement weather-related research and disaster response strategies.

To enable the study of the correlation between lightning activity and localized severe weather disturbances (such as thunderstorms), the Japan International Cooperation Agency (JICA) and Hokkaido University through the Science and Technology Research Partnership for Sustainable Development (SATREPS) Program has partnered with the Department of Science and Technology Institute through the Advanced Science and Technology Institute to develop local expertise and build relevant lighting monitoring infrastructure in the Philippines.

This presents the activities and updates on the Understanding Lightning and Thunderstorm for Extreme Weather Monitoring and Information Sharing in the Philippines (ULAT) Project. The ULAT Project is aimed at the following: a) establishment of a dense network of lightning and weather devices in Metro Manila and nearby municipalities to a) establish of a dense network of lightning and weather devices in the Philippines in order to provide thunderstorm “now-casting” and supplement weather-related research and disaster response studies and strategies; b) establishment of a ground receiving station for direct reception of satellite imagery and utilizing existing ground receiving facilities to develop effective observation methods by comparing to compare 3D structures of thunderclouds from satellite images with lightning/precipitation data; c) establishment of a methodology for short term forecasts; and d) development of software for sharing information on short term forecast weather to concerned agencies.

To further meet the goals of the project, there are challenges during the implementation of the project activities that needs to be addressed in the areas of equipment security, public safety, partnership agreements, site identification and selection, logistics, process, etc. The encountered challenges, alongside with their corresponding solutions, recommendations, next steps and other plans relevant to the project will be also discussed during the meeting.

Keywords: Understanding Lightning and Thunderstorms for Extreme Weather Monitoring and Information Sharing in the Philippines (ULAT) Project, Advanced Science and Technology and Institute (ASTI)

