

## Development of Thermal Infrared Sensor Camera on board LAPAN-A4 for Thunderstorm Cloud Observation

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Thunderstorm cloud, which growth vertically, has potential disaster risk like heavy rainfall, hail, micro-burst, and lightning. Cloud top altitude, volume, and growth speeds of thunderstorm cloud could be the parameter to predict its potential hazard. In this session, we will show our methodology to observe thunderstorm cloud using thermal infrared sensors camera which will be installed in the LAPAN-A4. This micro-satellite will be launched in 2020 FSY in the altitude ~ 500 kilometer with sun-synchronous polar orbit and inclination 97°. So, thermal infrared sensor camera will provide a temperature distribution with a resolution of ~ 180 meters and a field of view of ~ 56.3 x 42.2 kilometers. Using this high resolution thermal infrared sensor camera, the cloud top altitude can be estimated, assuming a temperature profile of the ambient atmosphere. By making such observation at some time interval, the developing speed of the thunderstorm cloud can be calculated in 3D.

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