Super constellation of micro-satellites as a platform for space weather monitoring

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It is expected that micro-satellites with a weight less than 100 kg will play important roles in space development in the near future due to extreme low cost and the rapid down-sizing. Adding to Surrey Satellite Technology Ltd., a former venture company of Surrey University in UK and one of the pioneers of microsatellite, not a few institutes or companies started entering the international race of micro-satellite development. Micro-satellite had been considered as an educational or experimental tool, but it is not any more at present. Google bought US company, Skybox Imaging, which may launch several tens of, even hundreds of 100 kg-class micro-satellites in the near future for commercial services as a part of Google businesses. Recently, with telescopic camera on board RISING-2, our second 50 kg-class satellite we succeeded in acquiring the color of the earth color, RGB, images with 5 m resolution, which is the best performance in the world as 50 kg satellite. Low cost of the micro-satellite enables institutes or university of developing countries to launch their own spacecraft. Actually many ASEAN countries show very strong interest in fabricating and operating satellites and few have already some experiences. However, generally speaking, their ability of satellite development and utilization is just a beginner level at this moment. And no standardized satellite BUS or scientific sensors exist in the world. One of the fascinating ideas to realize super multipoint measurement for space weather monitoring might be installing a standardized scientific plasma sensor package at every micro-satellite as a part of the BUS instruments. In the near future we may have an opportunity to realize the super constellation with more than several tens of micro-satellites, organizing ASEAN and other developing countries. Here we would like to discuss how to implement our conception.