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**Current status and strategy of KMA's Cubesat development for
greenhouse gas monitoring**

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Greenhouse gases emitted by human are the main cause of global warming, which raised the global average surface temperature by 1.09°C from 2011 to 2020 compared to pre industrial (1850-1890). The international community is making efforts to reduce greenhouse gases through activities such as Paris and Glasgow Climate Agreement. South Korea is one of the countries that has declared carbon net zero. So, the National Meteorological Satellite Center, the Korea Meteorological Administration (NMSC/KMA) is monitoring greenhouse gases using satellite data such as OCO-2 and GOSAT to understand climate change and support the government policy. In addition, NMSC/KMA is planning to develop its own CubeSat to strengthen greenhouse gas monitoring. In the new space era, small satellites, particularly CubeSats, have emerged as viable platforms for remote sensing applications, offering cost-effective solutions. CubeSats can operate at a variety of altitudes and have proven their potential for several missions, including GHG and water vapor observation. Furthermore, deploying a constellation of CubeSats can enhance spatial coverage and revisit rates, aiding in robust GHG monitoring and analysis.

NMSC/KMA has two basic strategies for developing CubeSat for greenhouse

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gas observation: The first is localization development of payload, ground station, bus system and application. The second is stabilization through phased development. The first goal of development stage is to successfully develop and launch of verification CubeSat, and the next is stable operation of 15 CubeSats and the final goal is to transfer technology to the private sector and establish a mass production system. A feasibility study is being conducted to develop CubeSat, and a specific plan will be decided based on the results of the research.

It will be present at the conference the detailed updates on the progress, strategy, and goals of CubeSat program aimed at greenhouse gas monitoring in NMSC/KMA.

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