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Development of fog convergence technology and Application for road weather service based on geostationary meteorological satellites

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The fog is one of the key causes of transportation accidents by vehicle, ship, and aircraft and it is also the factor that directly impacted agriculture. Consequentially, more detailed and more accurate fog information services by a geostationary meteorological satellite are demanded from the end users in the transportation sector. It is the reason that we update the accuracy of the GK2A fog product as well as expand service to a new application field. KMA was developing the convergence technology between GK2A AMI(Advanced Meteorological Imager) data and GK2B GOCI(Geostationary Ocean Color Imager) data to support detailed fog service, and a new project for road weather service by KMA was also started in 2022. The new project plans to construct the road weather observation site on a highway test-bed to measure black ice, fog, etc. NMSC is preparing to support fog detection information based on GK2A according to the road weather service project.

This presentation will introduce the convergence technology to provide a detailed fog detection from GK2A/2B and we used the decision tree machine learning to blend the GK2A/2B fog detection products. It also shows the expanded utilization type of a geostationary meteorological satellite for the road weather service that transforms the GK2A fog product into node-link data of an Intelligent transportation system. In the last part, we are describing the examples of future demands for the GK series as a coming 4th industrial revolution.