Preparing for the Next Generation of Geostationary Meteorological Satellites

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BACKGROUND

With the emergence of Himawari-8, upcoming GOES-R launch, and Geoskompat-2A and PR-4 on the horizon, the user community is faced with the huge volume of data which puts a train on the current ground system infrastructure. The order of magnitude increase in sensor capability in terms of number of spectral channels, pixel resolution, and frequency of observation demand powerful and robust processing computers. In addition, users are and will have to deal with a large number of level-2 and higher products that need to be funded and deployed in order to utilize these products efficiently and effectively in order to better serve the public. Enterprise Electronics Corporation, a giant in the weather radar business now offers satellite data reception and processing systems that are more advanced, allowing for a cost effective way. The Proteus system is powerful, efficient, and user-friendly to help serve the new generation of satellite user community.

ADVANTAGE OF ABI AND AHL

PROTEUS BASELINE LEVEL 2 PRODUCTS

1. Cloud top pressure;
2. Cloud top height;
3. Cloud top temperature;
4. Cloud type;
5. Cloud amount;
6. Sea surface temperature;
7. Land surface temperature;
8. Fire point;
9. Fog;
10. Dust;
11. Convection Areas;
12. Dust and Fog;
13. Clear Sky Radiation;
14. Vis and Infrared
15. Cloud Top Height;
16. Cloud Top Pressure;
17. Day Micro Physics;
18. Night Micro Physics;
19. Smoke and Haze;
20. Biomass Burning;
21. Volcanic Ash;
22. Smoke and Haze;
23. Closed Phase Detection;
24. True Color with non-linear adjustment (for USD only)

CSPP-GEO FOR LEVEL 2 PRODUCTS

All users other than the National Weather Service and other U.S. government entities will have to get data through Ca/RSS, which will have unacceptable delays for operational users. Therefore, operational agencies will need to get a direct broadcast ground station in order to make use of GRB data. For Himawari users, JMA disseminates data via internet for NMS Centers and all other users can receive Himawari data via HimawariCast at a reduced number of channels and resolution. Enterprise Electronics Corporation, the creator of Proteus software has created a complete and cost-effective solution for GOES-R GRB direct broadcast and for AH1 direct broadcast via HimawariCast. The solution is made up of three parts: 1) ground reception solution for both GOES-R and Himawari-8 satellites, 2) software to process data into level-2 products employing CSSP-GEO developed by SSEC, University of Wisconsin as well as products developed by science staff at EEC, 3) data storage hardware.

Introducing Two Advanced Satellite Ground Systems

To address these needs, Enterprise Electronics Corporation has developed two advanced satellite ground systems. The Proteus baseline is an entirely new generation of high performance systems, based on multi-chip modules, which are flexible and designed for ease of use, and for efficient and effective data processing in order to better serve the public. The second system, HimawariCast, is designed for the demanding needs of the Himawari-8 satellite.