DEVELOPMENT OF THE DATA GENERATION, MANAGEMENT, AND DISTRIBUTION SYSTEM FOR GEOSTATIONARY OCEAN COLOR IMAGER IN KOREA OCEAN SATELLITE CENTER

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1. INTRODUCTION

The government of Korea has planned the development of geostationary satellite for communication, ocean and meteorological purposes and been scheduled to be launched in late 2009. This satellite is called COMS and the ocean monitoring payload is the GOCI (geostationary ocean color imager). As an ocean satellite developing partner, KOSC (Korea Ocean Satellite Center) in KORDI (Korea Ocean Research and Development Institute) take in charge of primary data receiving and data distributor center. KOSC have several systems for data generation and management, distribution.

2. METHODOLOGY

GOCI is the world first geostationary ocean monitoring instrument using visible band. This is composed to 8 bands (6 visible, 2 NIR). It is designed to observe the area centered in 36 degree north latitudes in about 128 degree east longitudes and specialized for observing the ocean neighboring Korea. GOCI equipped in COMS produces ocean monitoring data hourly during the day, for the area of 2500km x 2500km with the area resolution of 500m x 500m in the center of the Korean Peninsula, and its data capacity is about 1GB per time, which is incomparably larger than the data of a polar orbit satellite.

For GOCI data acquisition, KOSC should construct the 9m L-band antenna and install its RF equipments. For data processing, IMPS (image preprocessing system) and GDPS (GOCI data processing system) are developed and integrated. For data management, DMS (data management system) is developed base on database and TMC (total monitoring and control system) can monitor the status of data processing and all server systems. GDDS (GOCI data distribution system) will be developed base on web and satellite communication. Using LRIT (low rate image transmission) service of COMS satellite, the processed image data of GOCI can be disseminated to world-wide users prepared a small-size receiving station. In the website for data distribution, the users can be categorized several groups like domestic and abroad, government/research institute/general people, etc. For each group can request and download the provided GOCI data from data distribution server located in hi-speed network supported data center. And user can choose interest areas from pre-defined map for minimization of downloading time. KOSC has a plan to share the GOCI data to other country's data distribution agency like EUMETSAT.

3. RESULT

KOSC has 4 servers in GDPS and 11 servers in IMPS for distributed data processing. And the duplicated storage and dedicated data management servers are installed for DMS. For data distribution system, there is on contract to internet data center (IDC) for leasing high performance storing area and network line. KOSC is developing its website including the GOCI data distribution functions. Many users can login this website and find the list of serviced satellite data. They can see the quick look(browsing) image files and request the order or download it directly.

4. CONCLUSION

KOSC as GOCI data receiving and distribution center is equipped several related systems for near-real time data distribution. There is the strategy for automatic data handling and easy data distribution to various application users.

5. REFERENCES

[1] KORDI, the report of "The Establishment of Korea Ocean Satellite Center" (III)