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FUTURE of CNSA EARTH OBSERVATION MISSIONS

CGMS is informed of the status of the future China National Space Administration Earth Observation missions. It includes FY-4, CBERS 03/04, HJ-1 C, and ZY-3 satellites. FY-4 is scheduled to launch in 2015. ZY-3, HJ-1C, CBERS 03 will be launched in 2012. This paper will be introduced status of satellites in developing.

FUTURE of CNSA EARTH OBSERVATION MISSIONS

1 Introduction

CNSA's Earth Observation System is comprised of the new-type sun-synchronous orbit and geostationary-orbit meteorological satellites, oceanic satellites, Earth resources satellites, and small satellites. This system will be used mainly for environmental protection and disaster mitigation monitoring and forecasting. The goal is to form an all-weather, 24-hour, multi-spectral, differential-resolution Earth observation system for stable operation, and achieve stereoscopy and dynamic monitoring of the land, atmosphere and ocean. The future Earth observation missions include FY-4, CBERS 03/04, HJ-1 C and ZY-3 satellites.

The main tasks of the remote sensing community are to make the overall plan for the development of the satellite remote-sensing ground system and the application system, to integrate and improve the present satellite remote-sensing ground system, to set up and improve supporting facilities for quantitative application which includes a remote-sensing satellite radiation calibration station, to form several important application systems, and to make breakthroughs in major satellite remote-sensing application fields.

2 CNSA Earth Observation Missions

2.1 FY-4 METEOROLOGICAL SATELLITE MISSION

FY-4 is scheduled to launch in 2015, which is the second generation geostationary meteorological satellite. Information about payloads and development of FY-4 is described in the reports of CMA..

2.2 CBERS03/04 RESOURCES SATELLITES MISSION

The objectives of CBERS 03/04 are the same as those of CBERS 01/02. CBERS 03 will be launched at the end of 2012, CBERS 04 will be launched in 2014, which providing high resolution and multi-spectral data. Its data includes 5 meters panchromatic data, 10 meters and 20 meters multi-spectral visible-near infrared data, 40 meter short-wave infrared multi-spectral data, 80 meters thermal infrared data and 73 meters wide-field data for other four spectrum bands.

2.3 HJ-1 C SATELLITES MISSION

HJ-1C is the S-band SAR satellite which developing in phase C, It is part of environment and disaster monitoring small satellite constellation, which will be launched in 2012. Data of S-SAR will be obtained, which provides 20meters resolution picture and 4 days temporal resolution with all-weather.

2.4 ZY-3 SATELLITES MISSION

ZY-3 is a high-resolution three-dimensional mapping satellite, which will be launched at the beginning of 2012. ZY-3 has 4 payloads whose images can be used for mapping and resources survey, such as producing 1:50000 and 1:25000 scale topographic maps, conducting land resource survey, providing service for disaster mitigation, constructing eco-environment engineering, urban, and transportation, as well as forestry, water conservation.

2.5 Other missions

CNSA is devoted to develop other missions, such as Shijian Series satellite, and new remote sensing technology.

3 Ground station construction

In addition to FY satellite ground system, China has developed a ground receiving system, including Mudanjiang ground station, Kashi ground station, Beijing ground station and Sanya ground station, which could serve for not only whole nation but local areas. CNSA has established an Earth Observation Engineering Centre. The Satellite Environment Center, satellite disaster application center, and Satellite Surveying and Mapping Application Center have been established and put into formal operation. In addition, the operational management of remote sensing satellite application is operated comprehensively, to ensure the effectiveness of the future satellite programs.

4 Conclusions

China Earth observation satellite system is playing an important role in the nationwide land resources survey, ecological construction, environmental protection and international earth observation demand. More operational satellites will be developed and launched in the future.