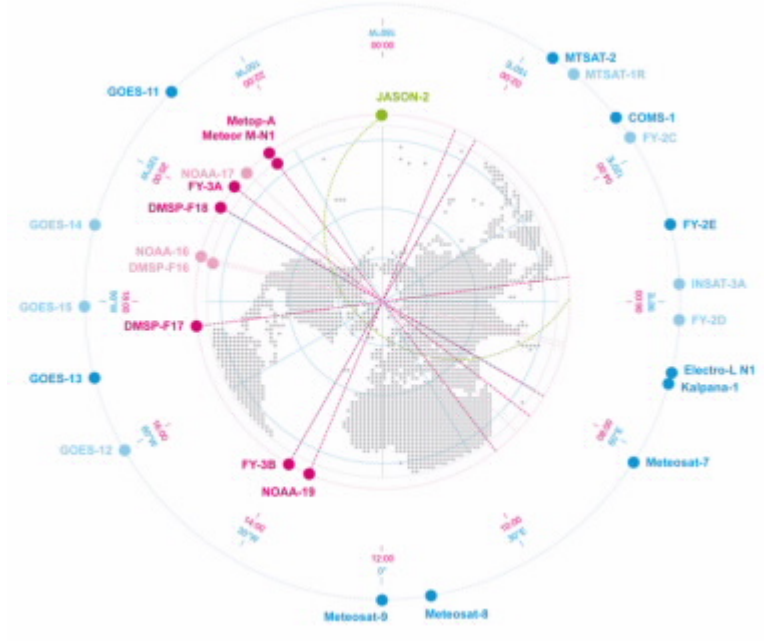



# The Status of Current and Future CNSA Earth Observing System

**Presented to CGMS-41 plenary session, agenda item [D.2]**

**Tsukuba Japan**

Coordination Group for Meteorological Satellites

CGMS

# Outline

- Introduction
- Status of Current CNSA EOS
- Status of Future CNSA EOS
- Conclusion

# Introduction

- Technology and application of satellite remote sensing has been extended rapidly in China.
- CNSA'S EOS includes FY series satellites, ZY series satellites, HY series satellites, and environment and disaster small satellite constellation (HJ).
- Meanwhile, China is also developing the ground receiving and processing system of EOS.

# Current Earth Observing system

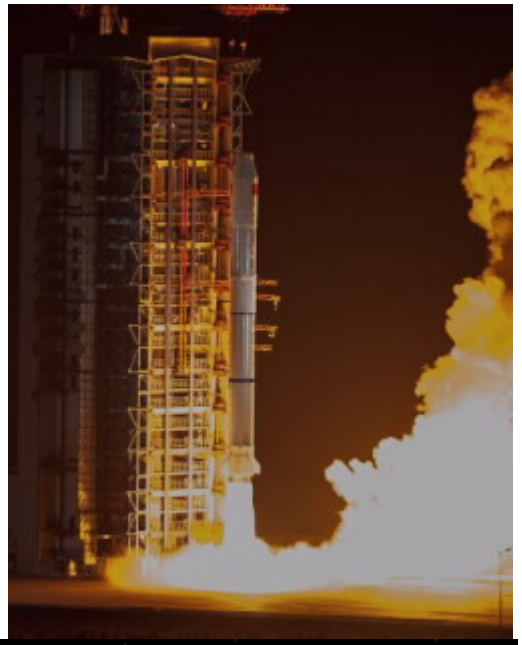
Nine satellites are operating in orbit, including FY-3A, FY-3B, HY-1B, HY-2, HJ-1A/B/C, ZY-3 and GF-1.

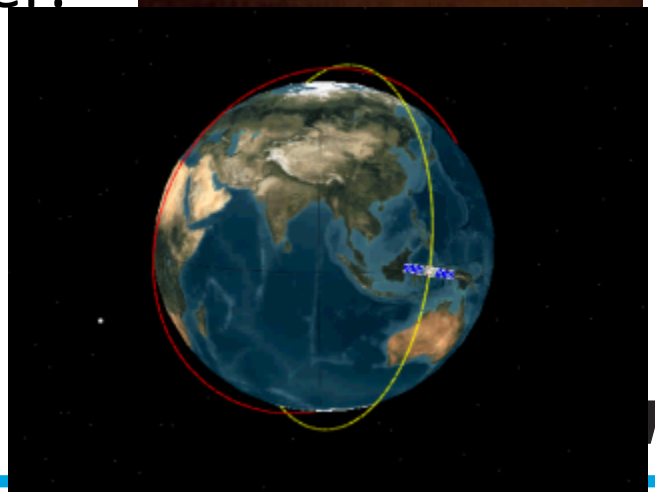
| Satellites | Space Agency | Equator Crossing Time + Altitude | Launch Date | Instrument | Status, applications and other information |
|---|---|---|---|---|---|
| HY-1B | CNSA | 10:30 (D) 798 km | 04/07 | 4-band CCD Camera Ocean Colour and Temperature Scanner | Ocean colour and temperature monitoring |
| HJ-1A | CNSA | 10:30 (D) 650 km | 06/09/2008 | Two 4-band CCD camera, Hyperspectral camera | Land, resource and environment monitoring |
| HJ-1B | CNSA | 10:30 (D) 650 km | 06/09/2008 | Two 4-band CCD camera, IR camera | Land, resource and environment monitoring |
| HJ-1C | CNSA | 06:00 (D) 500 km | 19/11/2012 | S band SAR | 0n-orbit test stage Land, Ocean and environment monitoring |
| HY-2 | CNSA, | 06:00 (D) 964 km | 16/08/2011 | Altimeter, MW radiometer, Scatterometer | Ocean dynamics environment monitoring |
| ZY-3 | CNSA | 10:30(D) | 09/01/2012 | 3-D mapping camera, multi-spectral imager | mapping. Land monitoring |
| GF-1 | CNSA | 10:30(D) | 26/04/2013 | 2-meter pan,8-meter multi-spectral imager and 16-meter imager with wide field | Land, resource and environment monitoring |

## Current Earth Observing system

# HJ-1 small satellite constellation

- HJ-1C was launched at Nov.16 2013,it is done on-orbit-test.
- The constellation of HJ-1 is built up,which provides 2-day cover with 30 multispactral imager,4-day revisit with 150meter or 300meter infrared imager and S-band imager.
- It is good at monitoring environment and disaster.

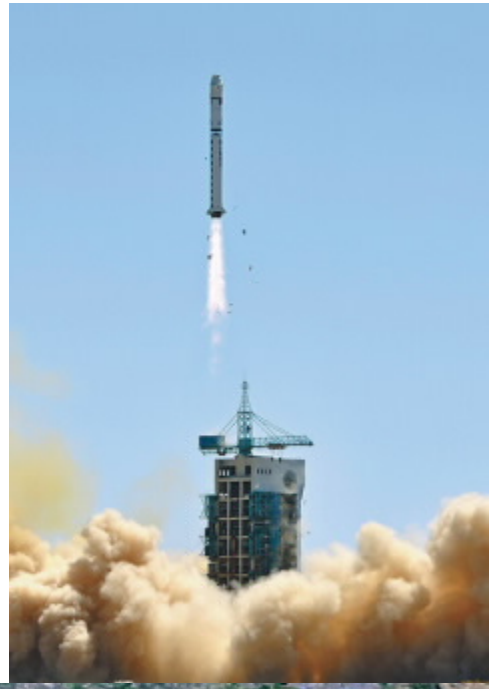


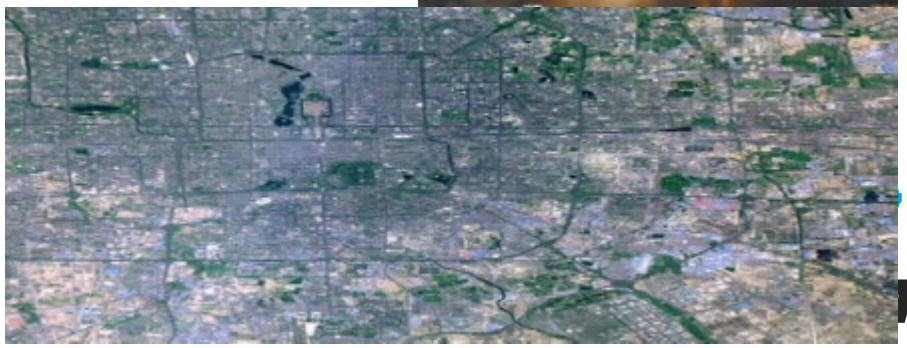


## Current Earth Observing system

# GF-1

- GF-1 was launched at April 26,2012.
- It can provide 2-meter pan imager,8-meter/16-meter imager.
- The 16-meter imager owns 800-kilometer wide field, which will continue the data of HJ-1A/B for monitoring environment and disaster.





# Future Earth Observing System

Five satellite will be launched in recent three years, including FY-4, CBERS-03/04, and CFOSAT.

| Satellites | Space Agency | Equator Crossing Time + Altitude | Launch Date | Instrument | Status, applications and other information |
|---|---|---|---|---|---|
| CBERS-3 | CNSA + AEB | 10:30 (A) 778 km | end of 2013 | PAN CCD camera, MUX CCD camera IRMSS, WFI | Phase D Land, resource and environment monitoring |
| CBERS-4 | CNSA +AEB | 10:30 (A) 778 km | 2015 | PAN CCD camera, MUX CCD camera IRMSS, WFI | Phase D Land, resource and environment monitoring |
| CFOSAT | CNSA+ CNES | 07:00(D) ~600Km | 2015 | SCAT (Scatterometer) SWIM (Directional Wave spectrum form) | Phase C Ocean dynamics environment monitoring |

# Future Earth Observing System

- CBERS 03/04 will provide 5-meter pan imager .10-meter/20-meter multi-spectral imager,40-meter/80-meter infrared imager and 73-meter multi-spectral wide-field imager, which can continue the quickly-revisit products from HJ-1A/B with GF-1.

- CFOSAT will be launched at the end of 2015.It will continue partly function of HY-2, and improve monitoring characteristics of ocean dynamics environment with HY-2.

# Conclusion

- CNSA will assess the capability of R&D on-orbit and future satellite, and attempt to improve it by new space program.
- CNSA is devoted into the transformation from R&D satellite to operating satellites.
- CNSA will continue to share experience with CGMS members, and make more contribution for the optimization of Globe Earth Observing System.

# Thanks for your attentions !

Coordination Group for Meteorological Satellites

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