



Update on FengYun satellite support to RA-II & IV



XIAN Di (xiandi@cma.gov.cn)
National Satellite Meteorological Center (National Center for Space Weather)
China Meteorological Administration



1. FengYun satellite status



➤ Since AOMSUC-11, CMA's FengYun satellite status has been updated as follows:

- 2 Recruit: FY-4B and FY-3E
- 2 Retired: FY-3B and FY-2F

7 FengYun Satellites in orbit

GEO

FY-2G, -2H

FY-2G (99.5° E) and FY-2H (79° E)
Full disk every 30 min
FY-2H, last flight unit of FY-2 series.

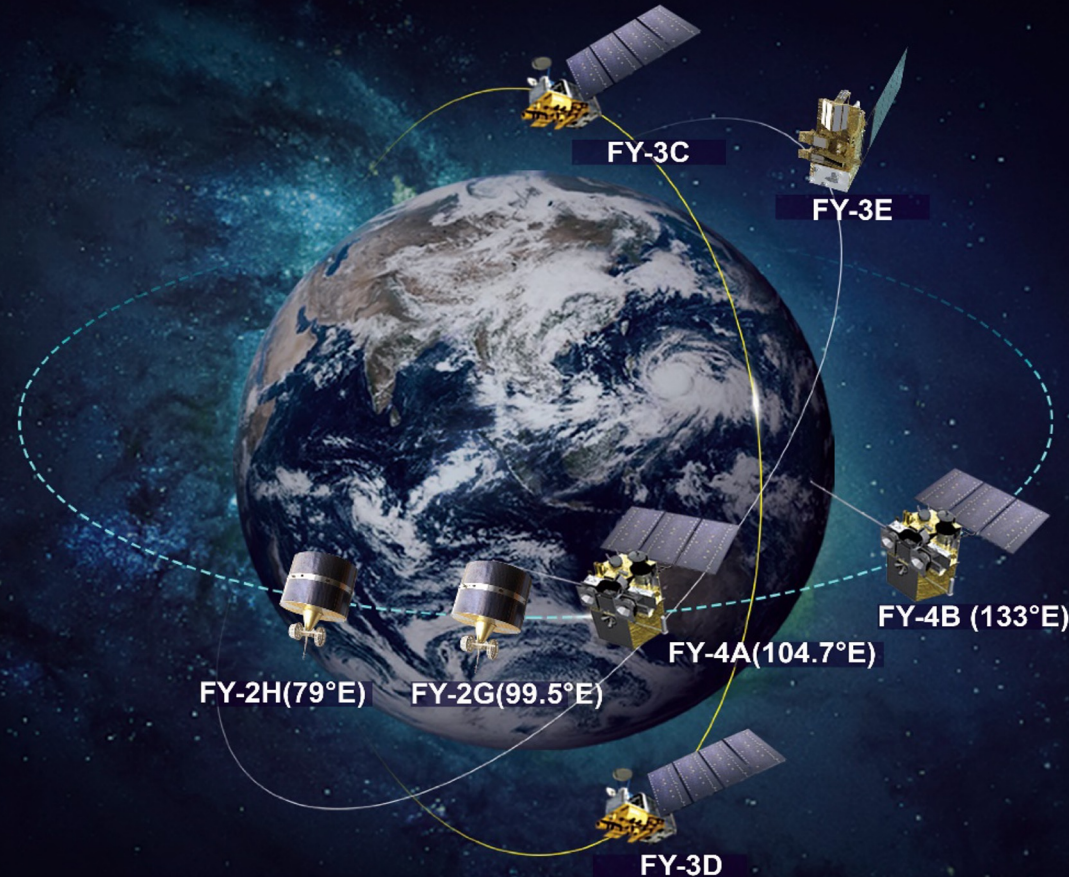
FY-4A, -4B

China's second generation GEO
meteorological satellites.

FY-4A (104.7° E), Full disk every 15
min.

FY-4B (133° E), Full disk every 15
min, partial areas rapid scanning at
1 min.

Pre-operational



LEO

FY-3C

Mid-morning orbit
Operational with degraded
performance

FY-3D

Afternoon orbit, ECT 13:45 local
time
10 EO instruments

FY-3E

Early-morning orbit, ECT 5:41 LT
11 EO instruments
Pre-operational



1. FengYun satellite status



Administrator of CMA, ZHUANG Guotai

Since 1st June,2022, FENGYUN-3E and FENGYUN-4B as well as their ground application systems officially start trial operation.



2. Data receiving support



Direct Broadcasting (DB) system built and maintenance

Country	Organization	DB station	Built Year	Status
Zimbabwe	Zimbabwe Department Meteorological Services (ZMS)	FY-3	2016	Normal
Namibia	Namibia Meteorological Service (NMS)	FY-3	2016	Normal
Mozambique	National Institute of Meteorology of Mozambique (INAM)	FY-2H	2020	Normal
Oman	Oman's Directorate General of Meteorology (DGMet)	FY-2H	2021	Normal
Bangladesh*	Bangladesh Space Research & Remote Sensing Organization (BSRRSO)	FY-2H	2022	Normal
Kyrgyzstan	Kyrgyzhydromet (KGM)	FY-2H	~2022	To be installed
Thailand*	Thailand Meteorological Department (TMD)	FY-2H	~2022	Plan
Mongolia*	National University of Mongolia	FY-2H	~2022	To be installed
Peru*	TBD	FY-3	~2022	Plan
Pakistan*	TBD	FY-2H	~2023	Plan
Turkey*	TBD	FY-2H	~2023	Plan



BSRRSO FY-2H station

* Under the agreement between CMA and APSCO

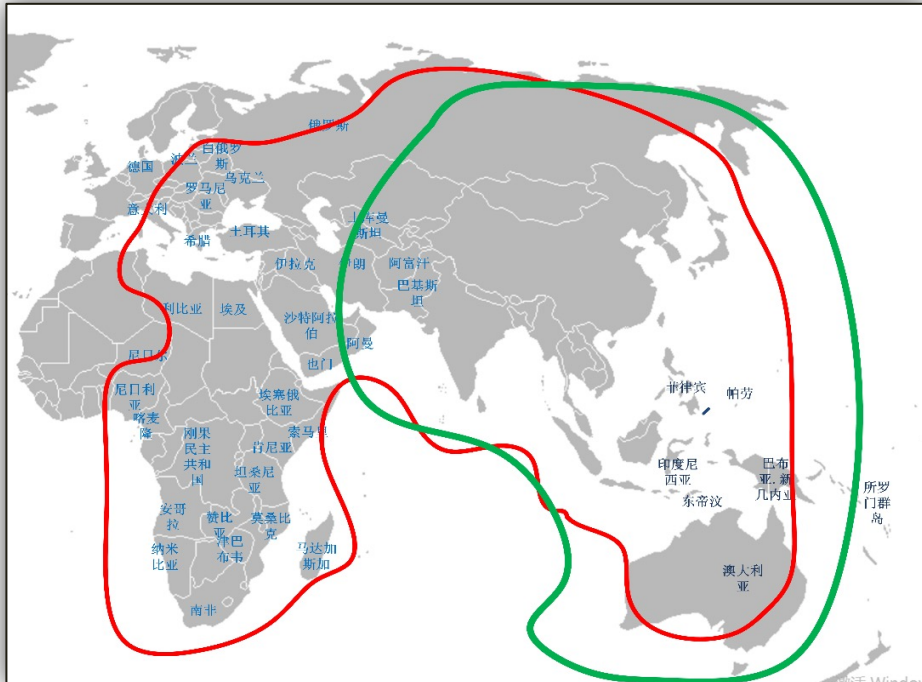


CMACast system update and maintenance

Coverage Change:

Transponder(C13A) on APSTAR(76.5E)
replaced Transponder(C6H) on
AsiaSat9(122E)

- New C-band transponder satellite of CMACast (APSTAR 7)
- Adjustment receive antenna of CMACast
- Upgrade the hardware and software of CMACast for users



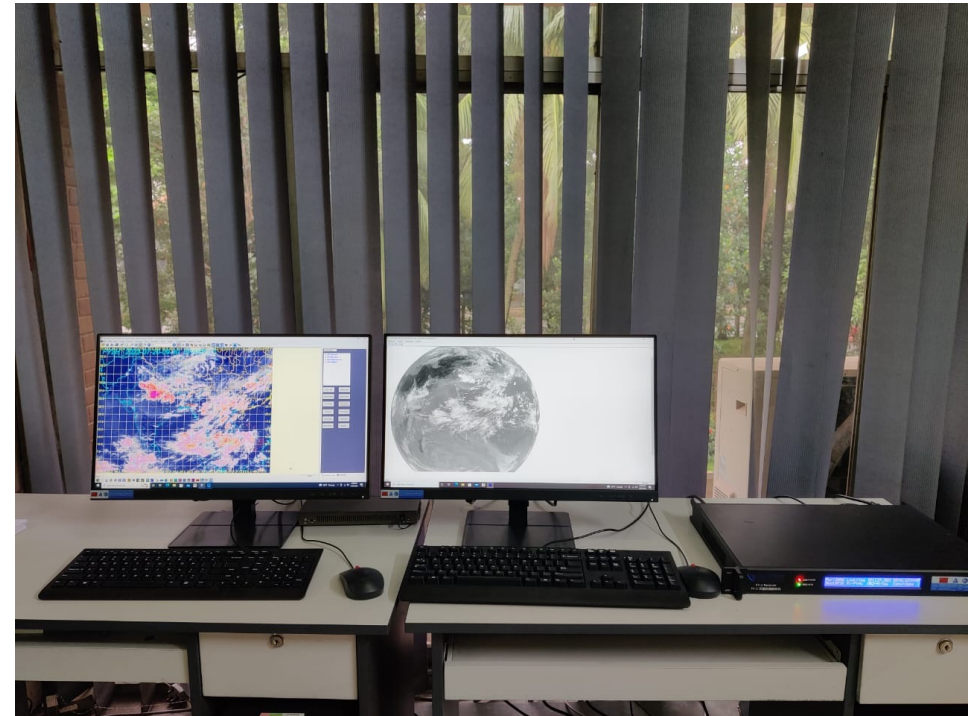
Project	AsiaSat 9 satellite	APSTAR-7 satellite
Orbit position	122.5°E	76.5°E
Carrier center frequency	3840MHz	4120MHz
Bandwidth	36MHz	36MHz
Downlink polarization	Horizontal	Horizontal
Downlink symbol rate	30000KSps	32700KSps
Modulation coding	8PSK、5/6	8PSK、3/4
Data rate	74Mbps	74Mbps



CMACast system update and maintenance

Hardware upgrade

Country	Update status	Build or update year
Maldives	Installed	2021
Pakistan	Installed	2022
Myanmar	To be installed	2022
Malaysia	To be installed	2022
Iran	To be installed	2022
Nepal	To be installed	2022
Mongolia	To be installed	2022
Philippines	To be installed	2022
Sri Lanka	To be installed	2022
Uzbekistan	To be installed	2022
Bangladesh	To be installed	2022
Thailand	To be installed	2022
Laos	Installed	2019
Papua New Guinea	Installed	2021
Kyrgyzstan	TBD	TBD
Vietnam	TBD	TBD
Indonesia	TBD	TBD
Tajikistan	TBD	TBD
Kazakhstan	TBD	TBD

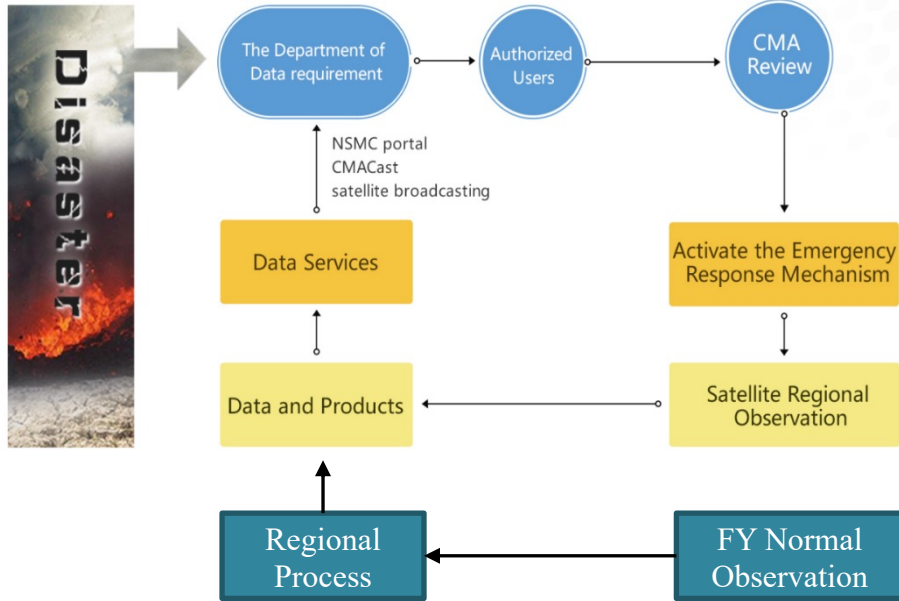




Update on FengYun Emergency Support Mechanism (FY_ESM)

On-duty GEO satellites

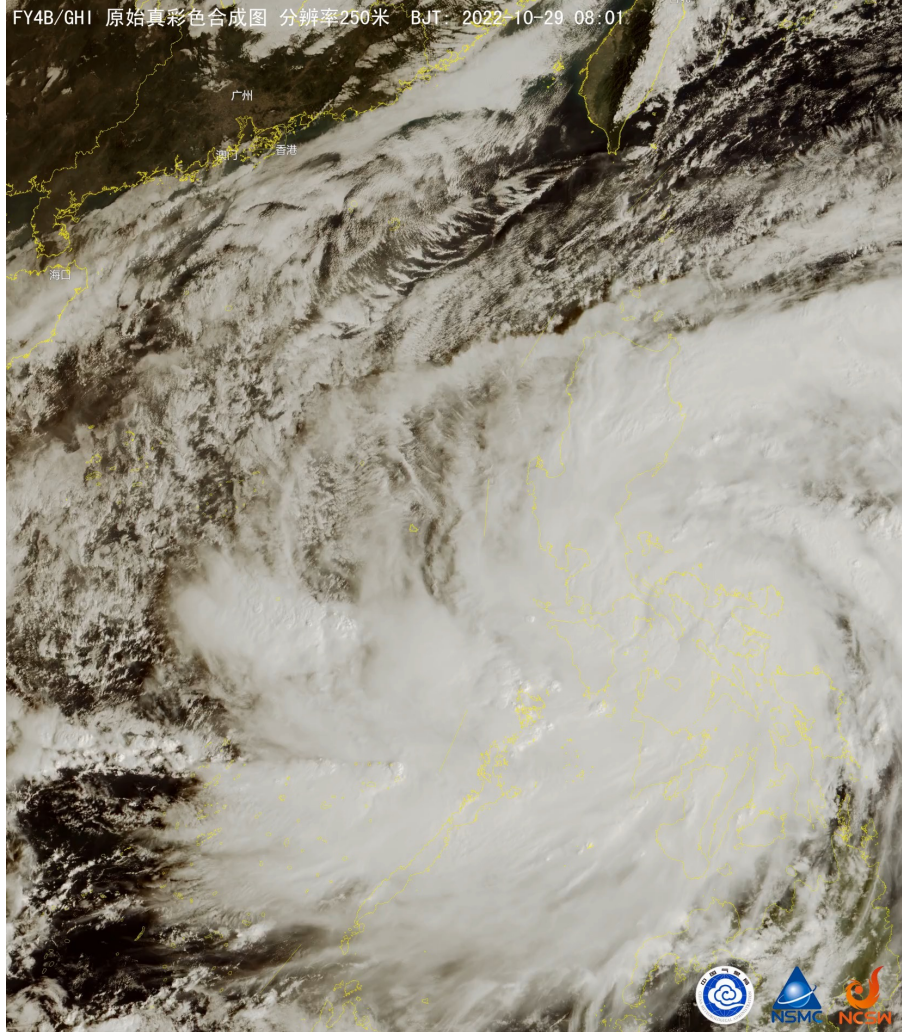
The process of the disaster prevention and mitigation mechanism for FY satellite international users



Position	Satellite	Operating mode
79°E	FY-2H	Normal observation (hourly, 28 full-disc images/day)
99.5°E	FY-2G	Normal observation (hourly, 28 full-disc images/day)
104.7°E	FY-4A	Normal observation (40 full-disc images/day, 165 images of China and its surrounding areas)
133° E	FY-4B	Normal observation (48 full-disk images/day) Area Rapid Scan (1min)

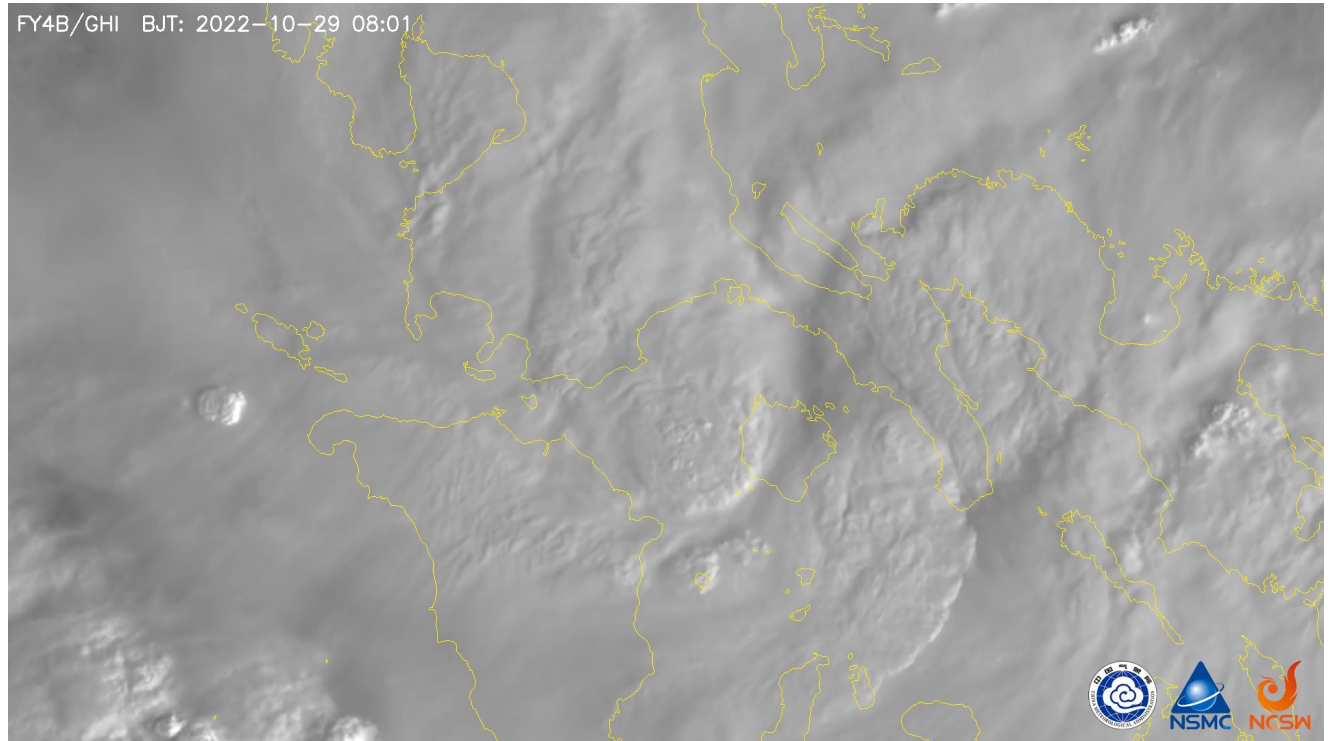


FY4B/GHI 原始真彩色合成图 分辨率250米 BJT: 2022-10-29 08:01



Typhoon NALGAE hits the Philippines

FY4B/GHI BJT: 2022-10-29 08:01





Progress in satellite application



FengYun Earth – International version

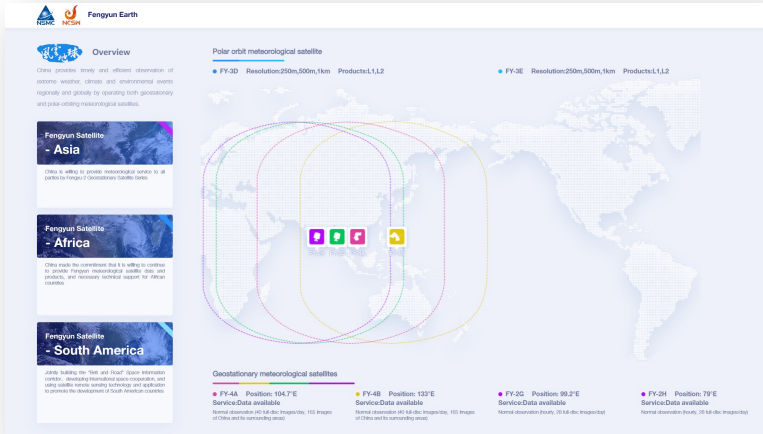
- FengYun Earth is a satellite weather application platform designed for weather forecasters in CMA;
- Developed in Q1 2022, now starting the trial application in National, Provincial, City-level, and County-level Meteorological Services of CMA.
- International version will release a trial version at the end of 2022.



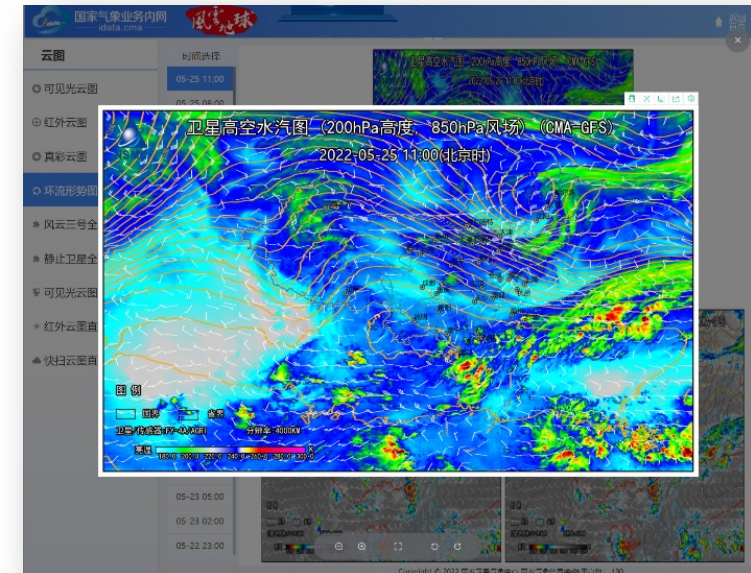
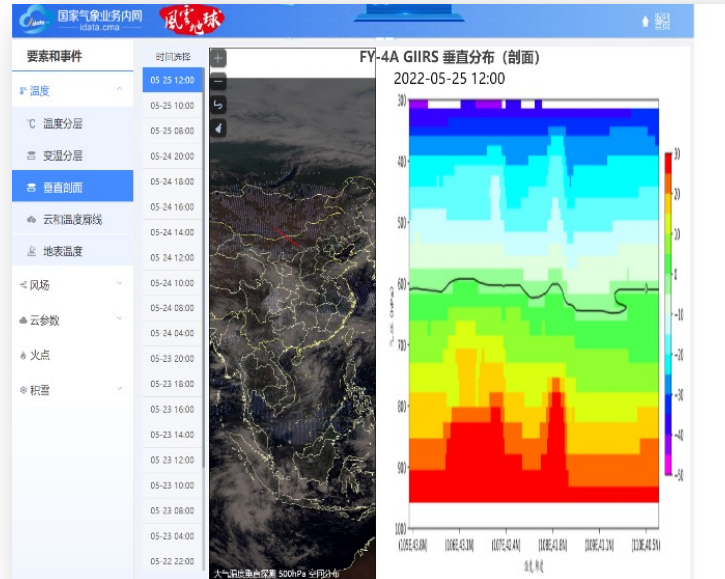
FengYun Earth

High-altitude water vapor map

FengYun Earth- International version



FY-4A GIIRS temperature profile





Thanks for your attention

XIAN Di (xiandi@cma.gov.cn)

National Satellite Meteorological Center, CMA