

CGMS-51-CMA-WP-09
25 April 2023

Prepared by: CMA
Agenda Item 3.8
Discussed at /WGIV

Subject	FY4 SATELLITE SERIES GIIRS L1 DATA INTRODUCTION AND ACCESS SERVICES
In response to CGMS action/recommendation	
HLPP reference	
Executive Summary	This document describes the Geostationary Interferometric Infrared Sounder (GIIRS) data information of FY-4A and FY-4B, the status and access services. The daily schedule, observation region, L1 data volume and L1 file name of GIIRS are introduced. GIIRS data are open to NMSs and other international organizations and users for free charge via many ways. For real-time users, the data can be accessed via public cloud. For non-real-time users, the data can be accessed from the FENGYUN satellite data center website, downloading toolkits and offline data services
Action/Recommendation proposed	

1 INTRODUCTION

Geostationary Interferometric Infrared Sounder (GIIRS), also the first space-borne interferometer that flies in geostationary orbit to take measurements of three dimensional atmospheric structure from interference of split light beams. Technically featured by a 32×4 sensor array plane, a Michelson interferometer working over different infrared bands for large-area, continuous, fast, and accurate vertical air soundings of temperature and humidity.

This document describes the GIIRS data information of FY-4A and FY-4B, the status and access services. The daily schedule, observation region, L1 data volume and L1 file name of GIIRS are introduced. GIIRS data are open to NMSs and other international organizations and users for free charge via many ways. For real-time users, the data can be accessed via public cloud. For non-real-time users, the data can be accessed from the FENGYUN satellite data center website, downloading toolkits and offline data services.

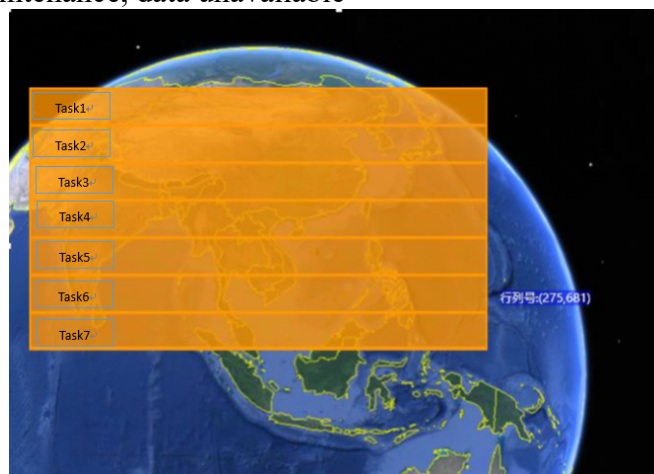
2 GIIRS DATA

2.1 FY-4A GIIRS

2.1.1 GIIRS Daily Schedule

Every 2 hour: Full Observation region (see picture below), will be scheduled to 7 tasks, every task costs 10 minutes. One task contains ca 60 dwells.

16-18UTC: Maintenance, data unavailable



2.1.2 Observation region (REGX)

3N-55N, 66E-144E

2.1.3 GIIRS L1 Data Volume

1 IR dwell file volume is ca 4MB.

The daily L1 data volume is random, average is: 12GB/Day 4380 files/Day

2.1.4 Brief Introduction to GIIRS L1 Data file name

Filename example:

FY4A- GIIRS- _N_REGX_1047E_L1- _IRD-
_MULT_NUL_20180514062025_20180514062145_016KM_004V1.HDF

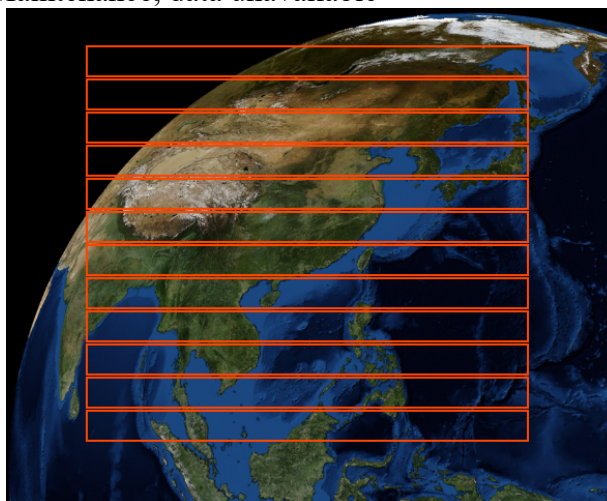
FY4A	Satellite name
GIIRS	Instrument name
N	Normal observation mode
REGX	Observe region (see pic. Below)
1047E	Satellite position longitude), 104.7E
L1	Level 1 data
IND	Data Name, IND for IR channels
MULT	Multi-Channels
NUL	Projection name, NUL for none geographic projection.
20180514062025	YYYYMMDDhhmmss: Observation task begin date and time (UTC)
20180514062145	YYYYMMDDhhmmss :Observation task end date and time (UTC)
016KM	Resolution, 16km
001V1	001 for the 1st dwell of this observation task, the total dwells amount depend on the clear sky dwell predict result V1: Data version 1
HDF	File format

2.2 FY-4B GIIRS

2.2.1 GIIRS Daily Schedule

Every 2 hour: Full Observation region (see picture below), will be scheduled to 12 tasks, every task costs 5 minutes. One task contains ca 27 dwells.

1410—1430UTC: Maintenance, data unavailable



2.2.2 Observation region (REGX)

3.4N-55N, 60E-137E

2.2.3 GIIRS L1 Data Volume:

1 IR dwell file volume is ca 8.2MB.

The daily L1 data volume is random, average is: 30GB/Day 3807 files/Day

2.2.4 Brief Introduction to GIIRS L1 Data file name

Filename example:

FY4B- GIIRS- N_REGC_1330E_L1- IRD-
_MULT_NUL_20230308235437_20230308235945_012KM_009V1.HDF

FY4B	Satellite name
GIIRS	Instrument name
N	Normal observation mode
REGC	Observe region (see pic. Below)
1330E	Satellite position longitude), 133E
L1	Level 1 data
IRD	Data Name, IRD for IR channels
MULT	Multi-Channels
NUL	Projection name, NUL for none geographic projection.
20230308235437	YYYYMMDDhhmmss: Observation task begin date and time (UTC)
20230308235945	YYYYMMDDhhmmss :Observation task end date and time (UTC)
012KM	Resolution, 12km
009V1	009 for the 9th dwell of this observation task, the total dwells amount depend on the clear sky dwell predict result V1: Data version 1
HDF	File format

3 GIILS DATA ACCESS

CMA has built up a space-land integrated data distribution system for domestic and international users. For real-time and non-real-time users, CMA has different ways to help users access data.

3.1 For real-time users

3.1.1 FENGYUN satellite data direct broadcasting system (DB)

GIILS L1 data provide Direct Readout Service. User equipped with proper data acquisition facilities can directly receive data from the satellite broadcast.

3.1.2 CMA data broadcasting system (CMACast)

CMA's Broadcast System provide GIILS L1 data services to users in Asia Pacific Region. It could plays a great role in local meteorological services and disaster prevention and mitigation.

3.1.3 Real-time Data FTP service

Users who want to access the real-time data and products of GIILS can apply via this link: <https://fy4.nsmc.org.cn/data/en/share/realtime.html>. You will get an account and instructions per E-mail for getting access to the data and products through FTP. NSMC will push the real-time satellite data and products into this FTP service and keep only files in the last 30 days in it.

3.1.4 China and Europe Data Special Line

According to the Cooperation Agreement between the CCMA and EUMETSAT on the Application, Exchange, and Distribution of Meteorological Satellite Data, GIILS L1 data is provided to EUMETSAT through the China and Europe Data Special Line.

3.2 For non real-time users

3.2.1 FENGYUN satellite data center website

GIILS data available on this website can be searched without login, except for a few data. Prior to data subscription and download, it is required to register on the website as a legal user and go through the login verification. Users can visit the website of <http://data.nsmc.org.cn> to access data for free charge.

3.2.2 Offline data services

The users who need to get large amounts of GIILS data can apply for manual data services.

3.2.3 Data download by client toolkit

In order to improve the facilitate of users to order and download the data, NSMC provides the client of satellite data download software which supports Windows operating systems and can provide special ordering services such as satellite data customization and reservation since July 2019. Data download toolkit can be found on the FENGYUN satellite data center website (<https://fy4.nsmc.org.cn/nsmc/en/data/pcclient.html>).

4 CONCLUSION

Data service helpdesk: dataserver@cma.gov.cn, nsmc_fy@126.com

Websites related FENGYUN satellite data services:

Nation Satellite Meteorological Center: <http://www.nsmc.org.cn/en>

FENGYUN satellite data center: <http://data.nsmc.org.cn>