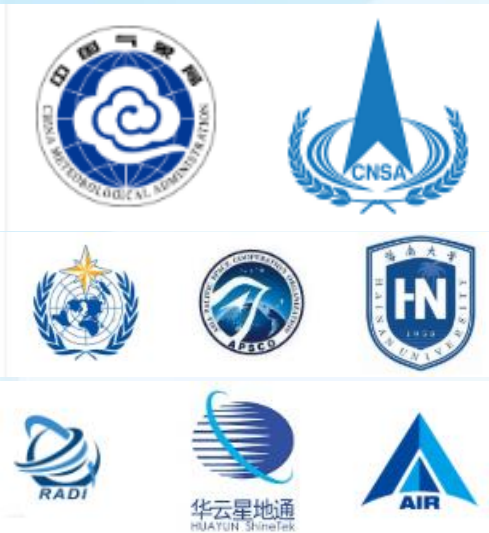




FENGYUN Satellite Data and Products Application Maldives Meteorological Service – Country report

By : Ahmed Rashed

Email: ahmed.rasheed@met.gov.mv





Outline

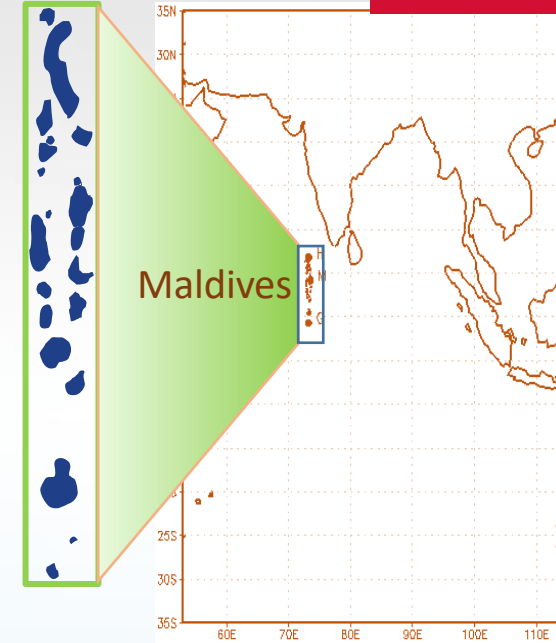
- The Maldives, Weather & Climate,
- Weather Observation and Forecast guidance.
- FENGYUN Satellite Data and Product Utilisation
- Public Weather Service and Warning
- Some of the challenges in weather forecasting

The Maldives

Geography: The Maldives is an island nation in the Indian Ocean composed of 26 ring-shaped atolls, which are made up of about 1,200 coral islands. About 99% of the country's area is sea.

Average height of the islands are 2m above sea level.

Population: The population of the Maldives is 378,114 (as of Dec 2017)

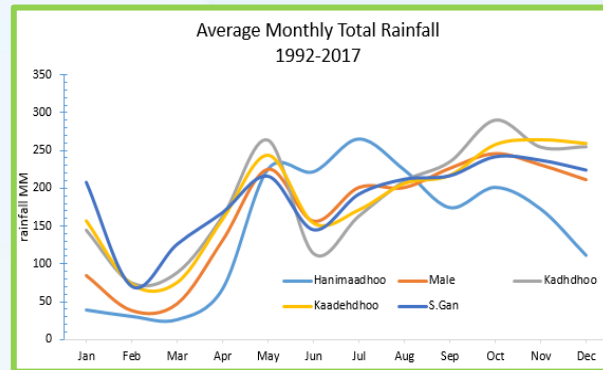
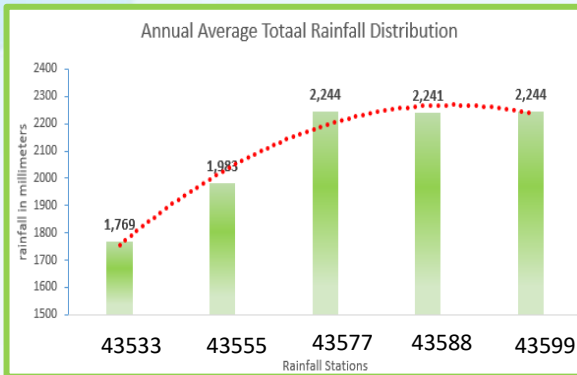


General Climate

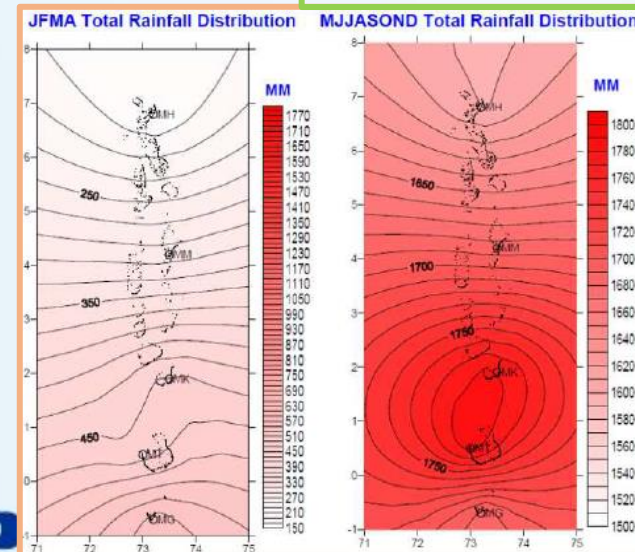
Maldives experiences tropical warm and humid climate. It has 2 distinct Seasons:

South-West Monsoon : mid-May to November

North-East Monsoon : January to March

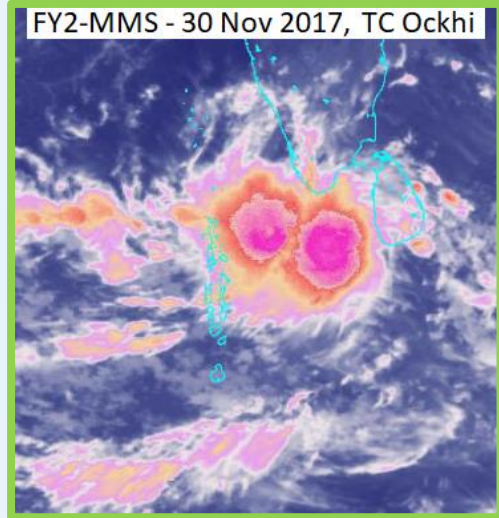


Seasonal Total rainfall distribution



Severe Weather Events

- ✓ Tropical Cyclones
- ✓ Heavy rain
- ✓ Flood
- ✓ Thunderstorms
- ✓ Strong winds and rough seas
- ✓ Gust Winds
- ✓ Tidal and Swell Waves
- ✓ Funnel Cloud (Water Spout and Tornado)



Current Observational System Overview

I. Surface observations

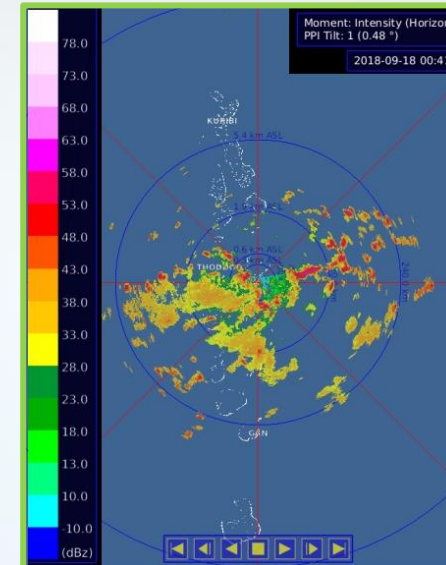
- ❖ Manned Observation Stations = 5
- ❖ Automatic Weather Stations = 36

II. Upper-air observations = 1

III. Doppler Weather Radar = 1

IV. Other observation platforms

- ❖ Tide gauge observation = 3

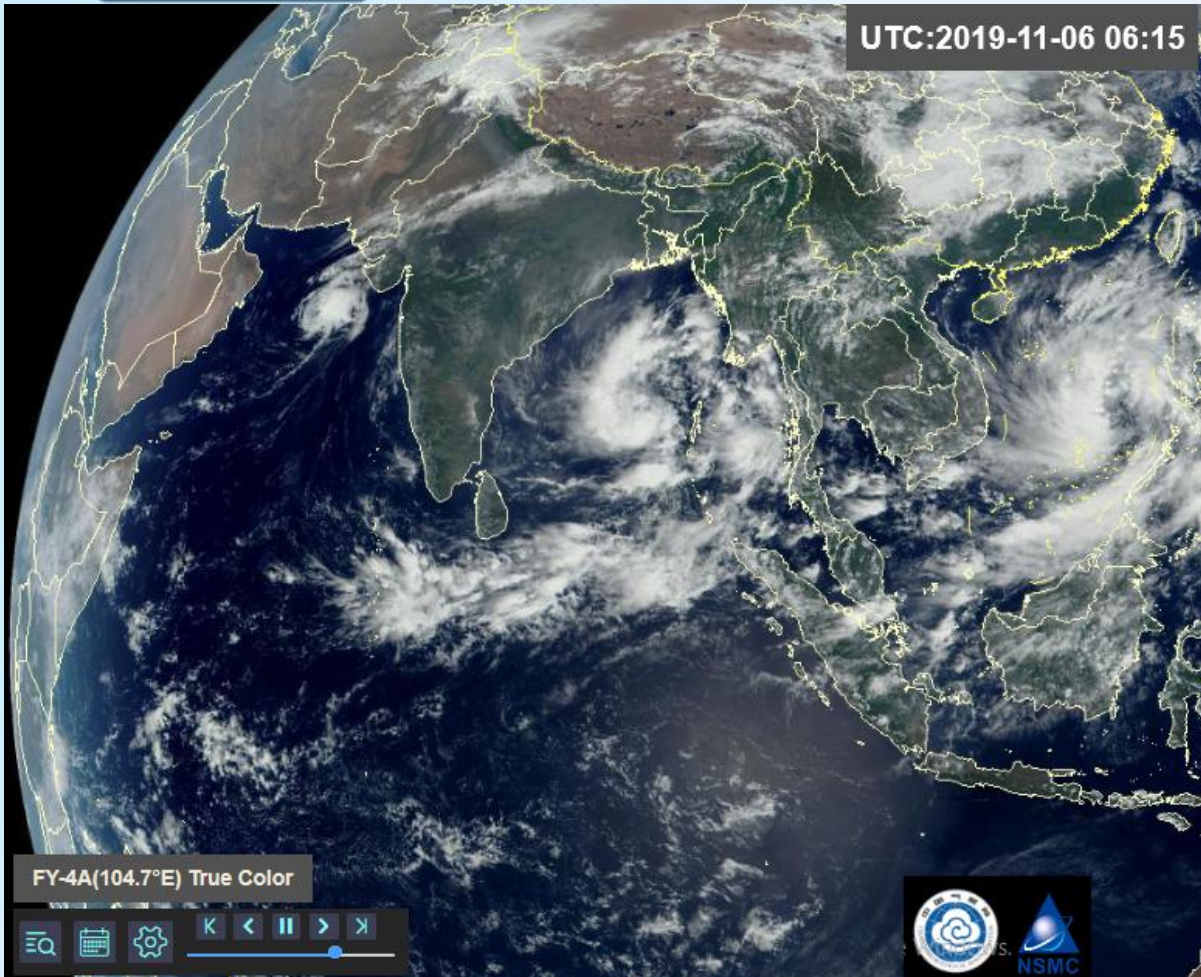


Doppler Weather RADAR

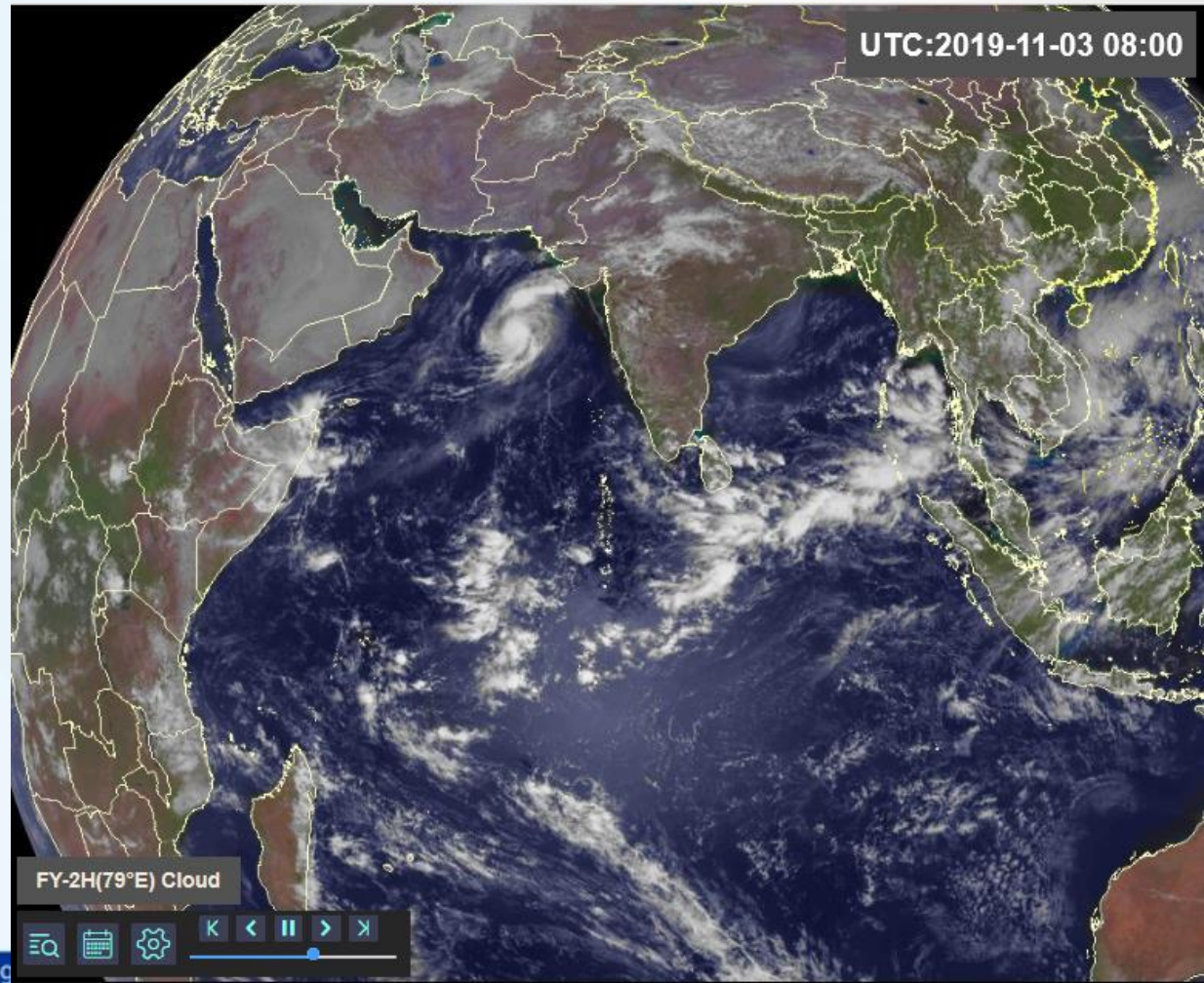


FENGYUN Satellite Data and Product Utilisation

<http://rsapp.nsmc.org.cn/>



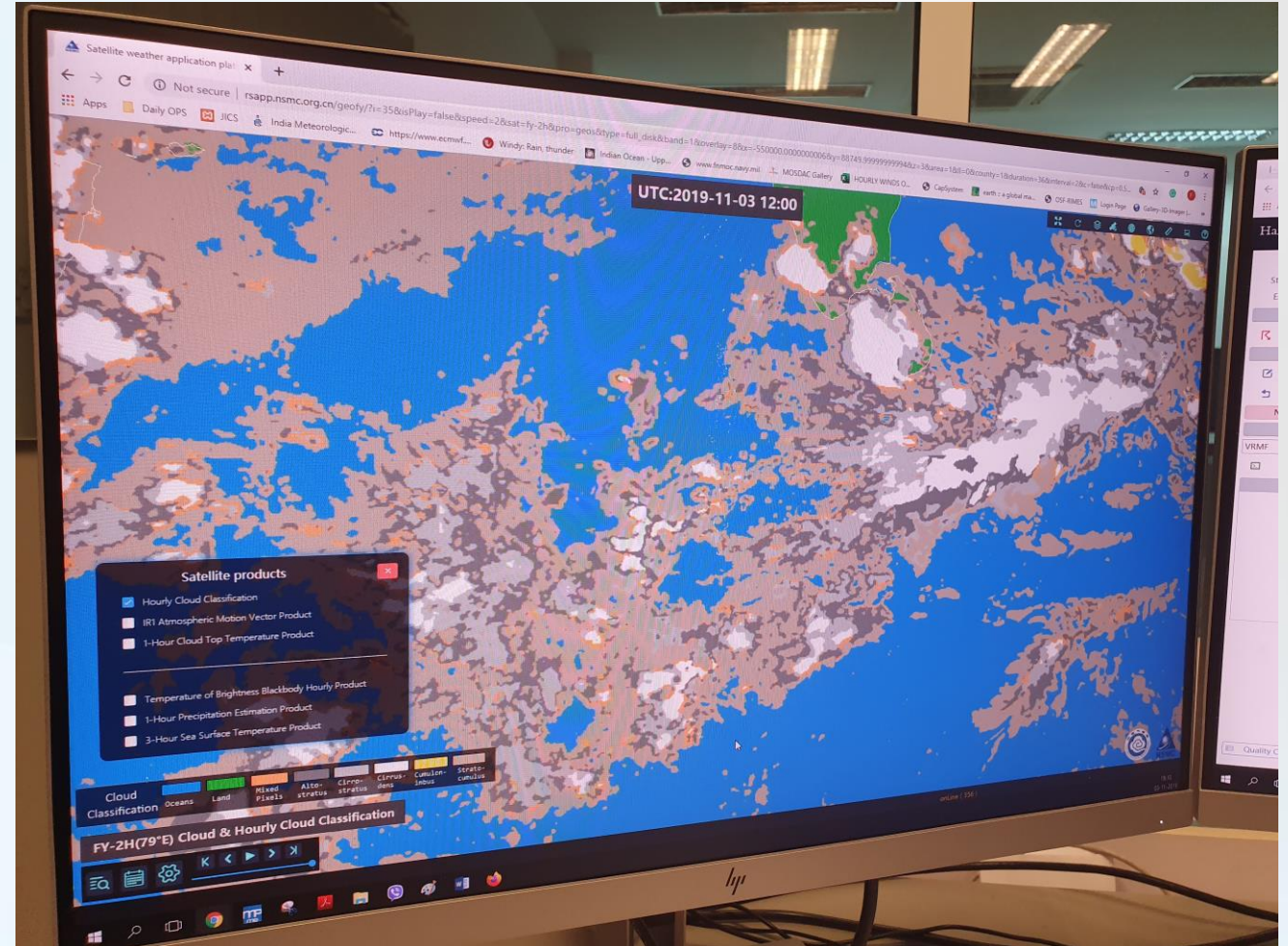
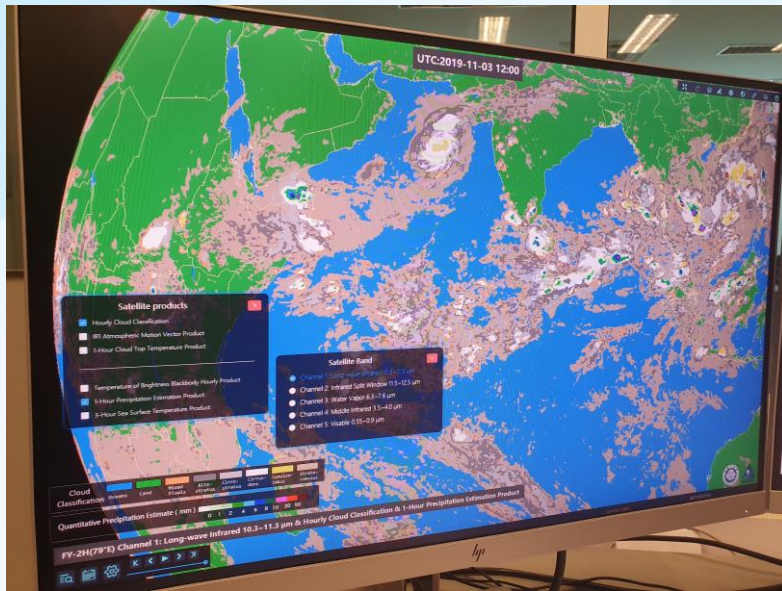
FY-4A (104.7E)



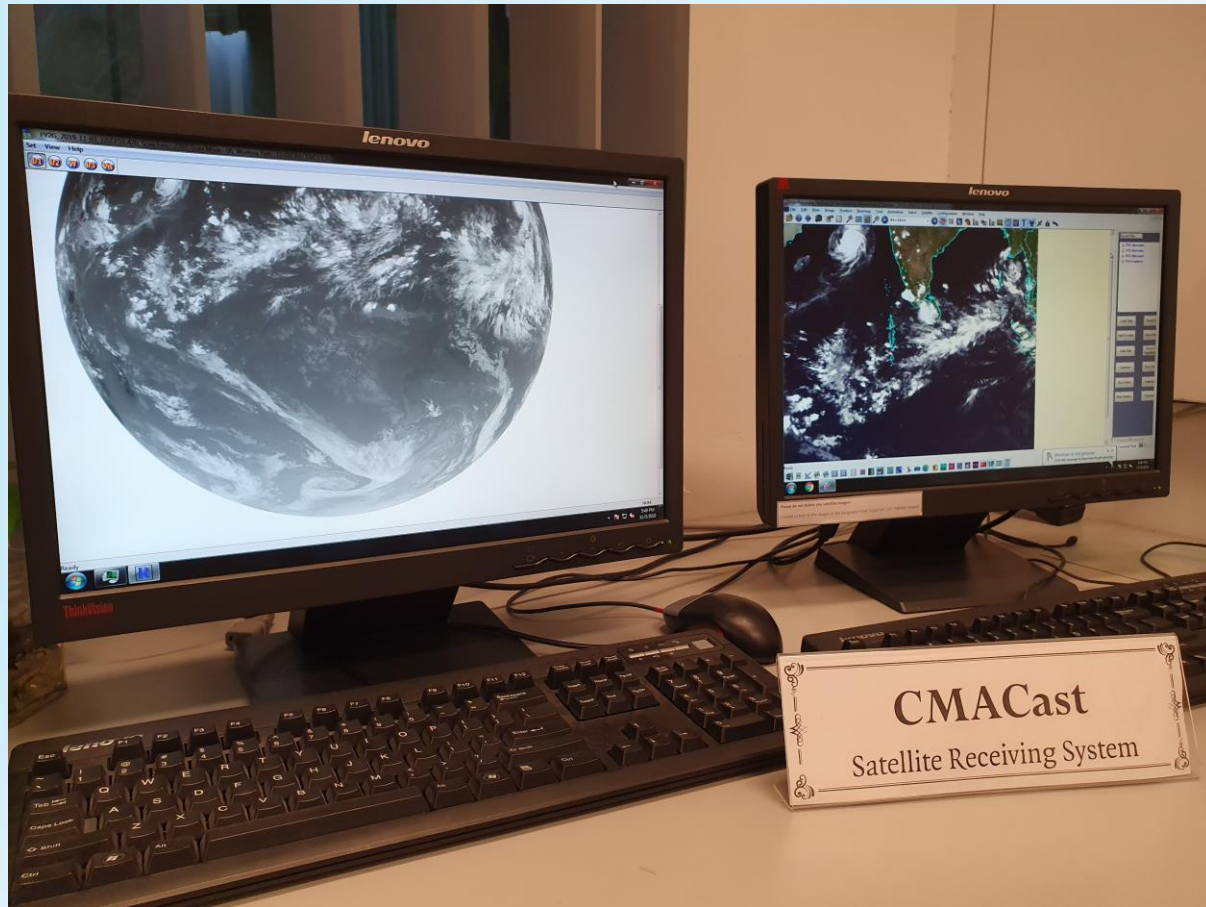
FY-2H (79E)

FENGYUN Satellite Data and Product Utilisation

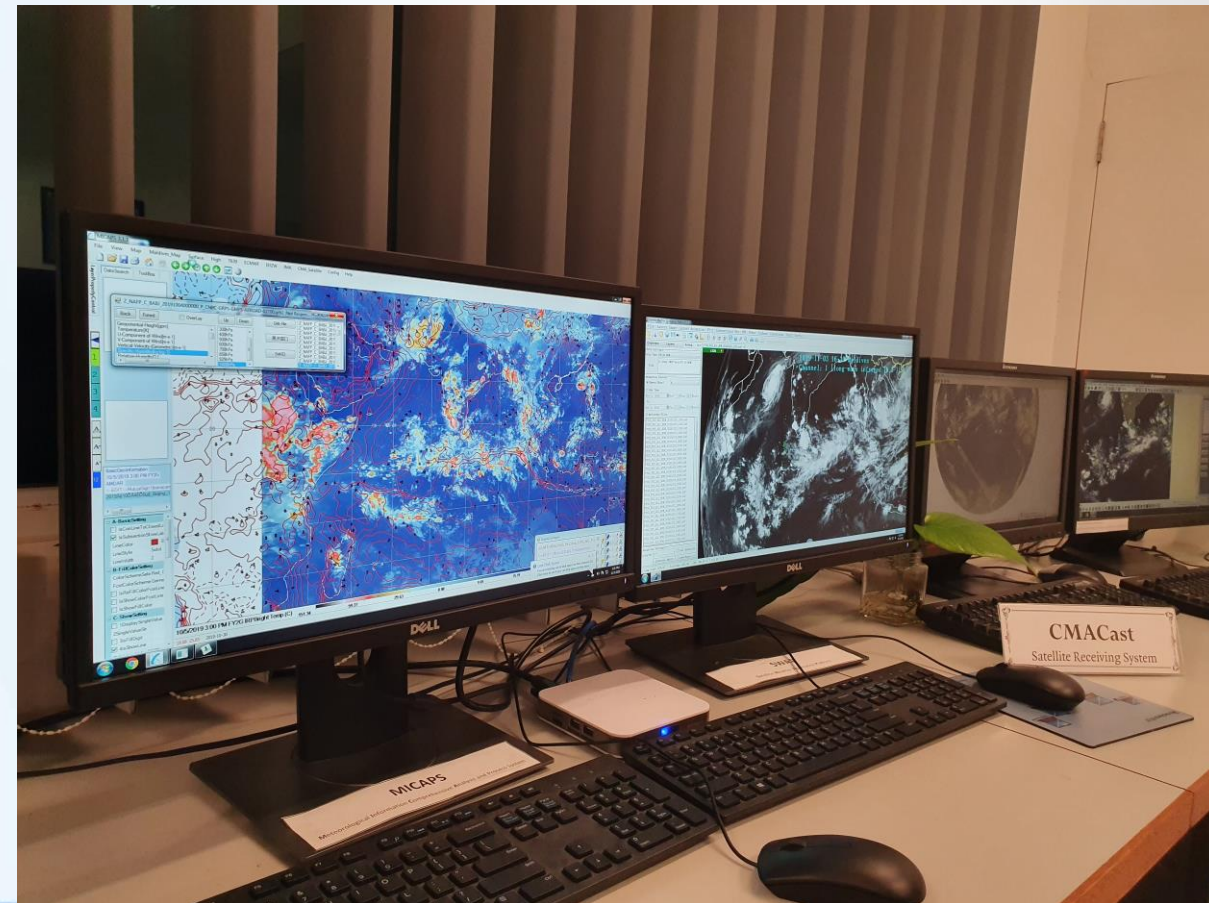
<http://rsapp.nsmc.org.cn/>



MICAPS and SWAP Application

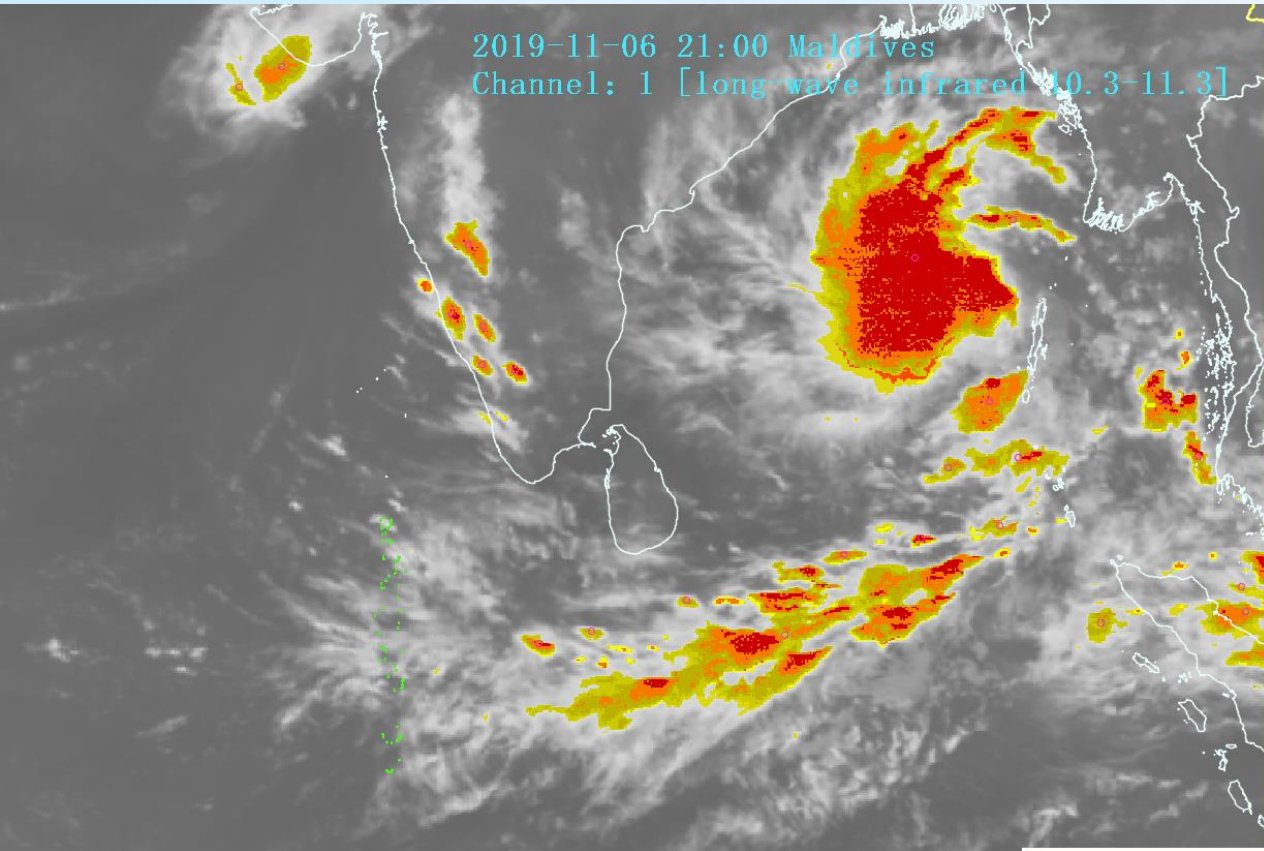


CMACast system

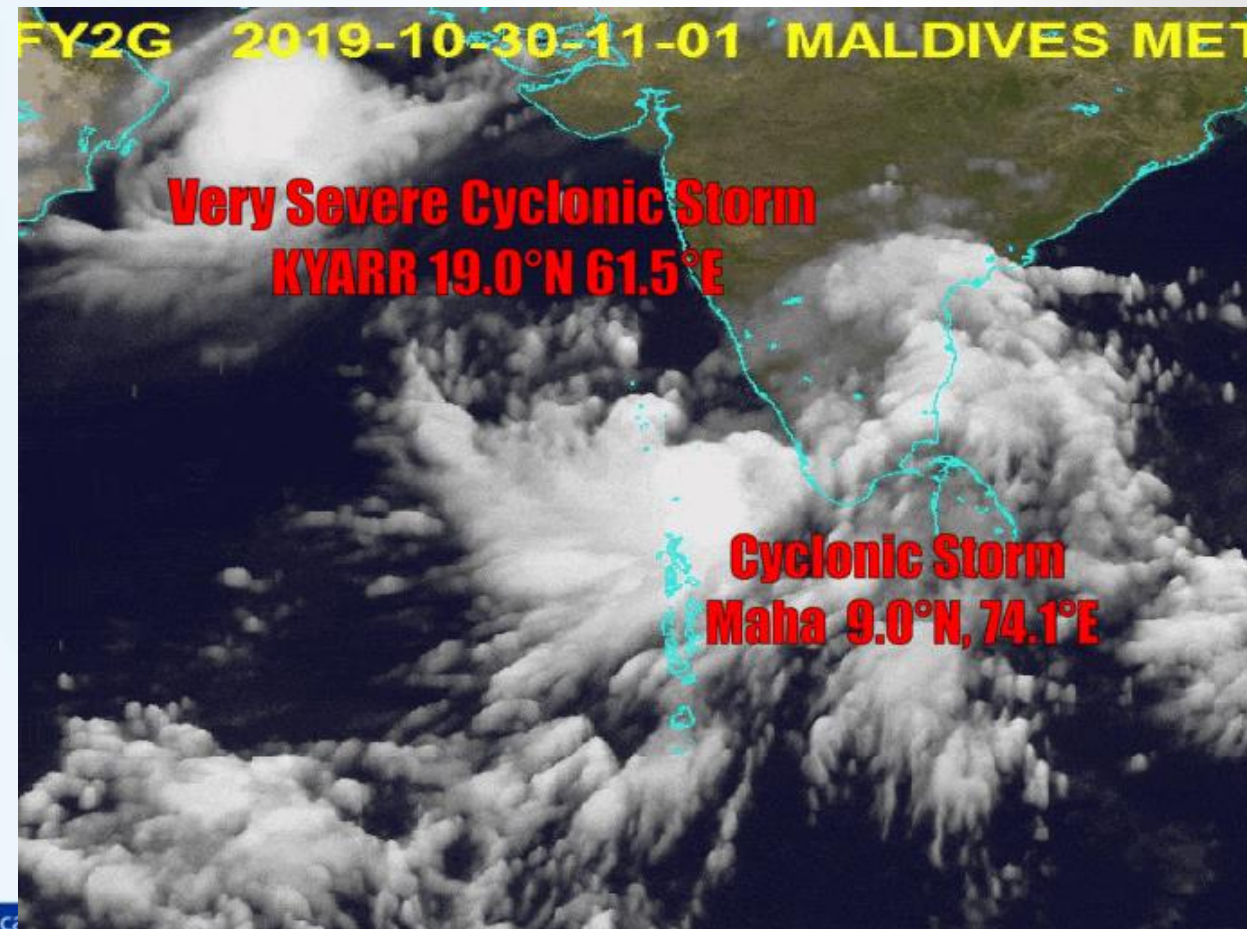


FENGYUN Satellite Data and Product Utilisation

CMACast system



SWAP Application





FENGYUN Satellite Data and Product Utilisation

it secure | meteorology.gov.mv

Severe Weather Situational Report Nov-Dec 2017

Male	Hanimadhoo	Kahdhoo	Kaadehdhoo	Gan
28°C cloudy	29°C partly cloudy	28°C partly cloudy	28°C partly cloudy	28°C fine

FY2G 2019-11-05-03-01 MALDIVES MET SERVICE

28°C

General Weather		Tide Info		
05:49 Sunrise	17:50 Sunset	13:41 Moonrise	01:10 Moonset	80% Humidity
28°C Temperature	cloudy Condition	6.9 mm Rainfall	W 08 MPH Wind	0:0 Sunshine (h:m)

Three Day Forecast

Thu, 07 November	Fri, 08 November	Sat, 09 November
thundershower wind : W 12 mph sea : moderate	moderate shower wind : W 10 mph sea : slight	moderate shower wind : W 10 mph sea : slight

<http://www.meteorology.gov.mv>



MV_WeatherAlertServices
19,758 members

FY2G 2019-10-31-14-00 MALDIVES MET SERVICE

Maldives Meteorological Service

MV_WeatherAlertServices

About
Official weather, earthquake&tsunami info

Background image

Media show all

Gifs

Activate Viber
Go to Settings to

Links



FENGYUN Satellite Data and Product Utilisation

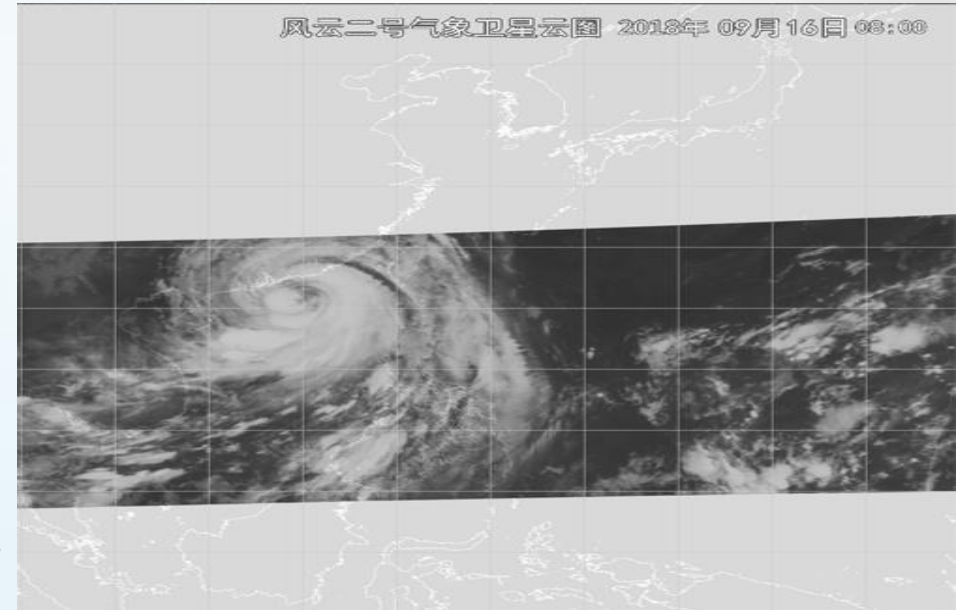
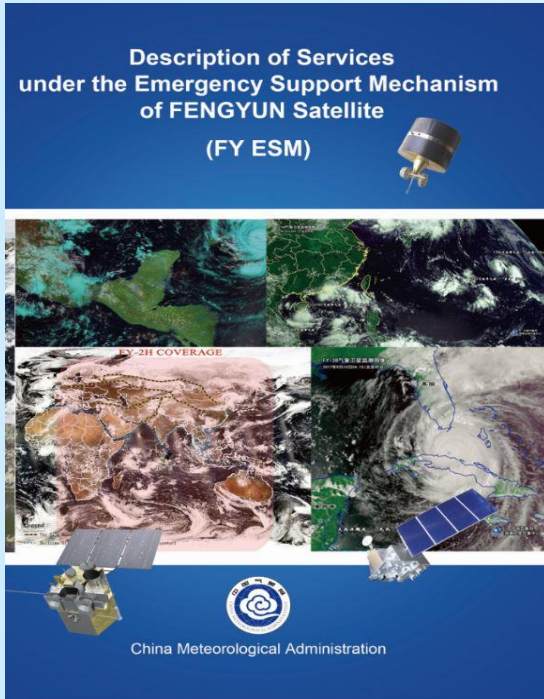
FY ESM

Provision of high resolution images of 5-6 minutes interval for a limited period of time.

Limitation on using the service:

Request to be made 24hrs in advance.

Rapid development and dissipation of Meso-Scale Convective Complexes (MCC).





Major national economic sectors using weather services provided by MMS

- Aviation Sector
- Sea transport
- Tourism Sector (recreational activities)



Aviation Weather Services



Sea Transportation

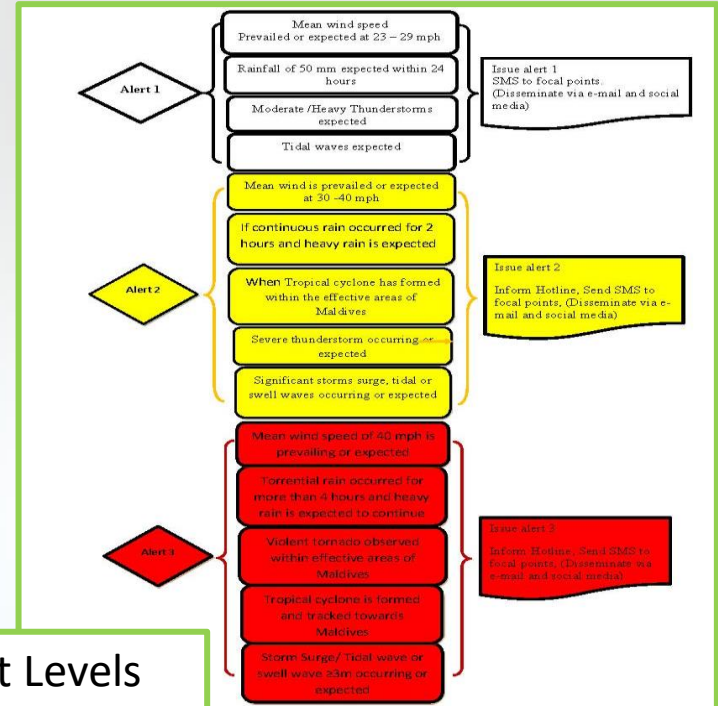


Tourism and Recreational Activities



Public Weather Service and Warnings :

- ❖ MMS provides daily weather forecasts & warnings.
- ❖ Forecasts posted on website, social media(Viber group, Twitter, Fb) and broadcast on radio and on television.
- ❖ MMS applies SOPs in operations to provide warnings on extreme weather.
- ❖ MMS use 4 different alerts:
- ❖ WHITE (white- for information), YELLOW (yellow- as Advisory),
- ❖ RED (red- as Warning) and Green (cancellation of warning).



MMS Website: www.meteorology.gov.mv

Weather Alert Levels

The screenshot shows a weather dashboard with the following data:

Location	Temperature	Condition
Male	30°C	partly cloudy
Hanimadhoo	31°C	cloudy
Kahdhoo	27°C	slight shower
Kaadedhoo	29°C	cloudy
Gan	28°C	partly cloudy

Additional details include a satellite image, a 'General Weather' section with tide info, and a 'Three Day Forecast' for the following days.

The screenshot shows the Twitter profile for Maldives Meteorology (@MetMaldives). Key statistics include:

- Tweets: 1,901
- Following: 29
- Followers: 10.2K
- Likes: 59

The profile bio states: "Maldives Meteorological Service presents OFFICIAL weather Observations, Weather forecasts and climatological information including Tsunami warning for Maldives." It also includes the location "Maldives" and the website "meteorology.gov.mv".

The screenshot shows a Viber group chat titled "MV_WeatherAlertServices" with 6,652 members. The chat interface displays a weather forecast, a satellite image, and a list of members including You (AhmedRash.), Shareef Ali DDGM, Afshal met fst, Aishath Rasheeda, and Azeema Ahmed.

The screenshot shows a TV weather presentation with a presenter pointing to a map. A "Wind" widget displays the following information:

- North / Central: Westerly 10 mph
- South: Westerly 15 mph
- Gust 40 mph



MetAlert

ALERT WHITE INFORMATION:
Heavy rain and thunderstorms expected.
Area: Between Shaviyani and Thaa atoll.
Period: 09/1200 hrs - 09/1800 hrs.
ISSUED: 1145hrs 09 Nov 2018.
-MetService-
11:49 am

TV Weather Presentation

Additional Requirements and Expectations

- High resolution(temporal & spatial) cloud pictures, precipitation estimate (QPE), **lightning mapper data** etc. are some of the very important parameters in weather monitoring and forecasting if they are made available on near real time basis.
- Polar orbiting satellite data, especially **ocean winds** (ASCAT winds) are very important to monitor ocean state over the area.
- Training required on **discovery, utilization and visualization** (RGB technique) of various satellite data sets for local applications.
- Training on Nowcasting, RADAR and **Satellite data assimilation** in NWP models.

Additional Requirements and Expectations

- Software upgrade and training on **MICAPS & SWAP** software.
- Obtain and install **SMART** software application at local computer system.
- Availability of **FY-4 Products** Via CMACast System
- Backup Components for CMACast satellite receiving Systems (LNB, Receiver)



Thank You