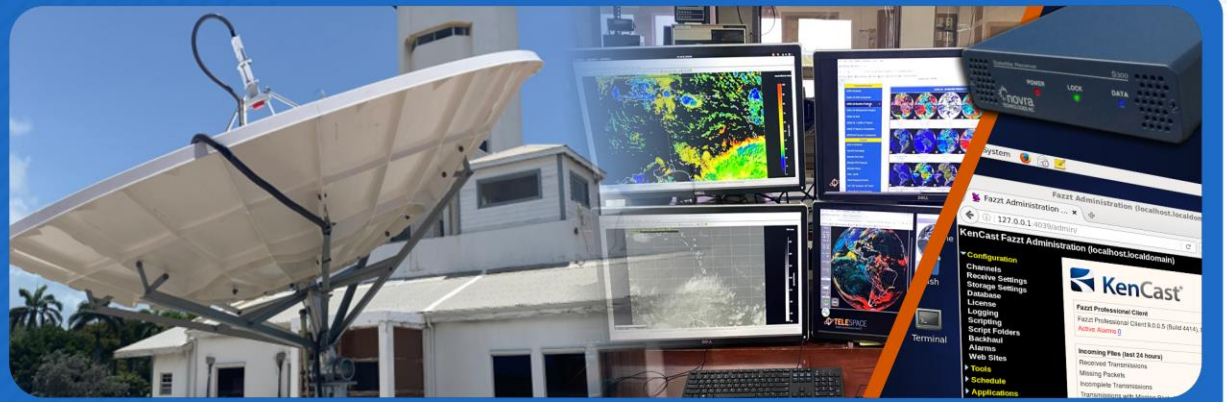
GEONETCast-Americas Training for the Eastern Caribbean States

Day 6 - May 15th

Session 3:

Introduction to SHOWCast



Diego Souza
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DISSM - Meteorological Satellites and Sensors' Division
CGCT - General Coordination of Earth Sciences
INPE - National Institute for Space Research

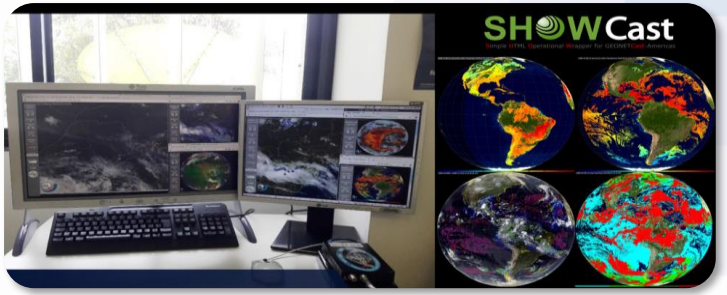
SDCR PROJECT
Strengthening Disaster and Climate Resilience in the Eastern and Southern Caribbean

USAID FROM THE AMERICAN PEOPLE

Caribbean Institute for Meteorology and Hydrology

Presentation Outline

- Challenges and Goals
- Demonstration
- SHOWCast Overview



Data Access, Processing and Visualization

Data Access



amazon web services™

Environmental Data Commons

Google Cloud Platform

unidata IDD

CLASS

Data Processing

PyProj

pyHDF

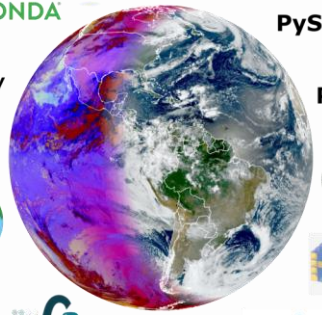
ANACONDA

python™

GMT THE GENERIC MAPPING TOOLS

PySpectral

SciPy



PyOrbital

GDAL

cartopy

NumPy

Folium

Siphon

PyTROLL SatPy

matplotlib

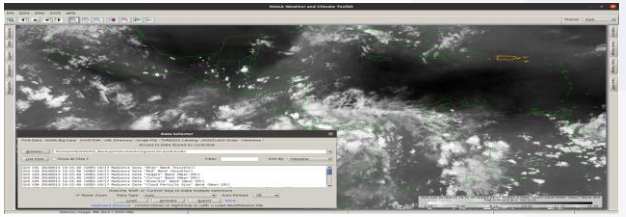
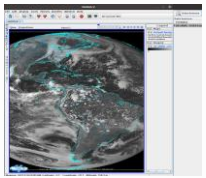
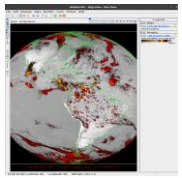
NetCDF4

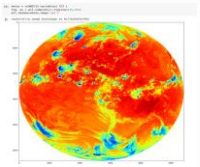
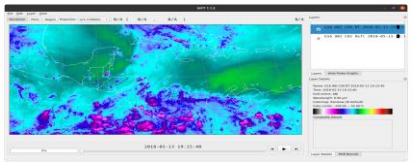
MetPy

pyGRIB

Basemap

Visualization

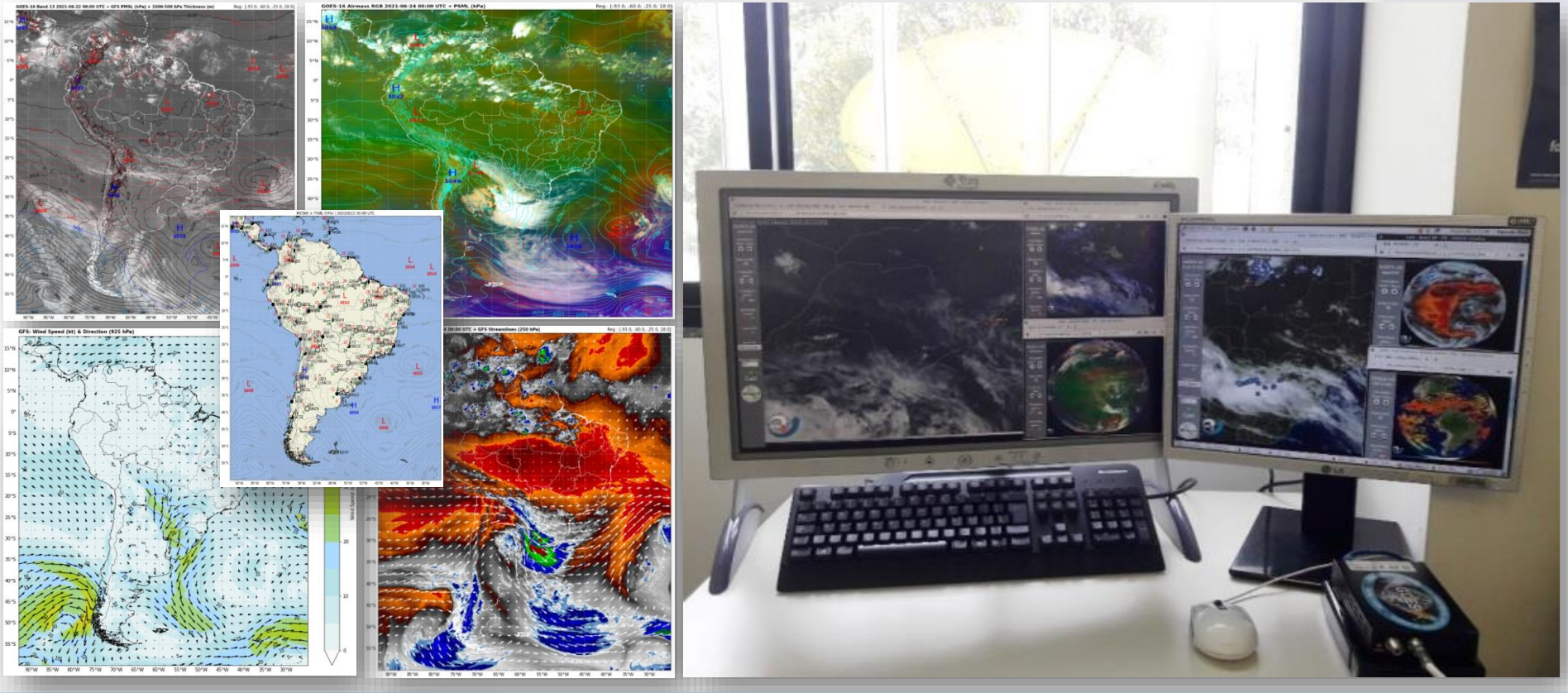
GRB, HRIT/EMWIN, HDR, GEONETCast-Americas, Cloud Services, UNIDATA (IDD, THREDDS), NOAA CLASS, and other

Many Python libraries available to process GOES-R / JPSS data(and many other satellites). There are other solutions / programming languages

AWIPS, McIDAS, IDV, SWIFT, WCT, Python, SHOWCast, SLIDER, DSAT, and many other options for visualizing satellite data

Data Access, Processing and Visualization

We have seen during the Python training the possibility of processing products. But how can we generate and visualize data operationally?

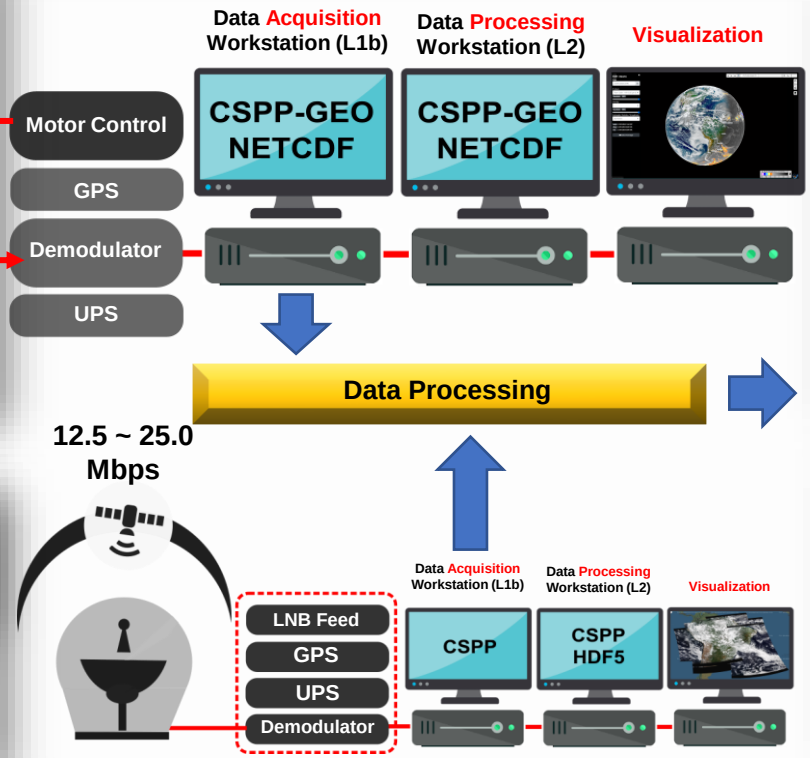


Example: INPE's Meteorological Satellites Division

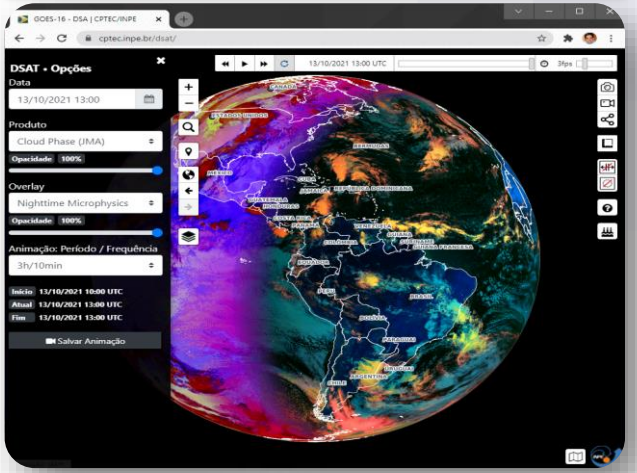
GOES-R

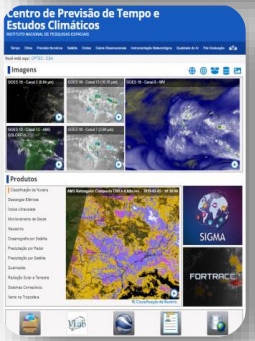
JPSS / LEO

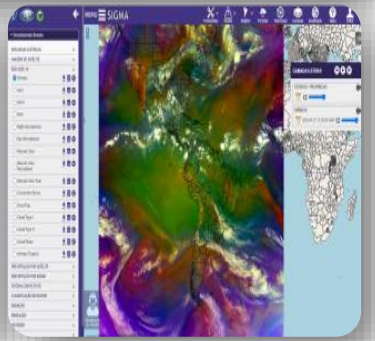
Note: GRB / GNC-A / AWS / PDA (we process what is available first)



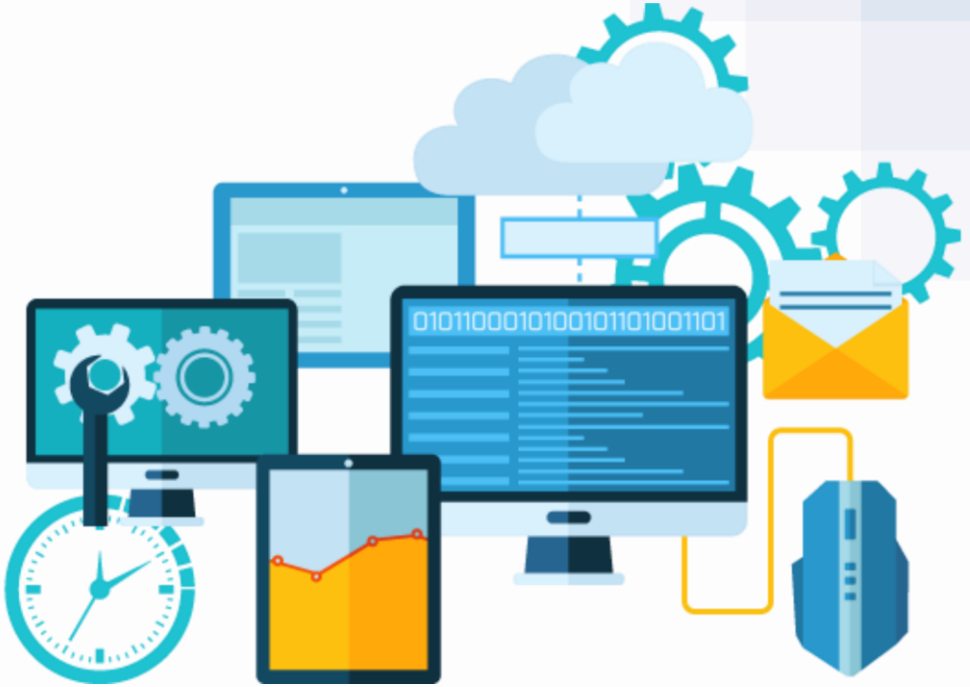
Web Pages, Research and Development







The Problem: Human / Technological Resources

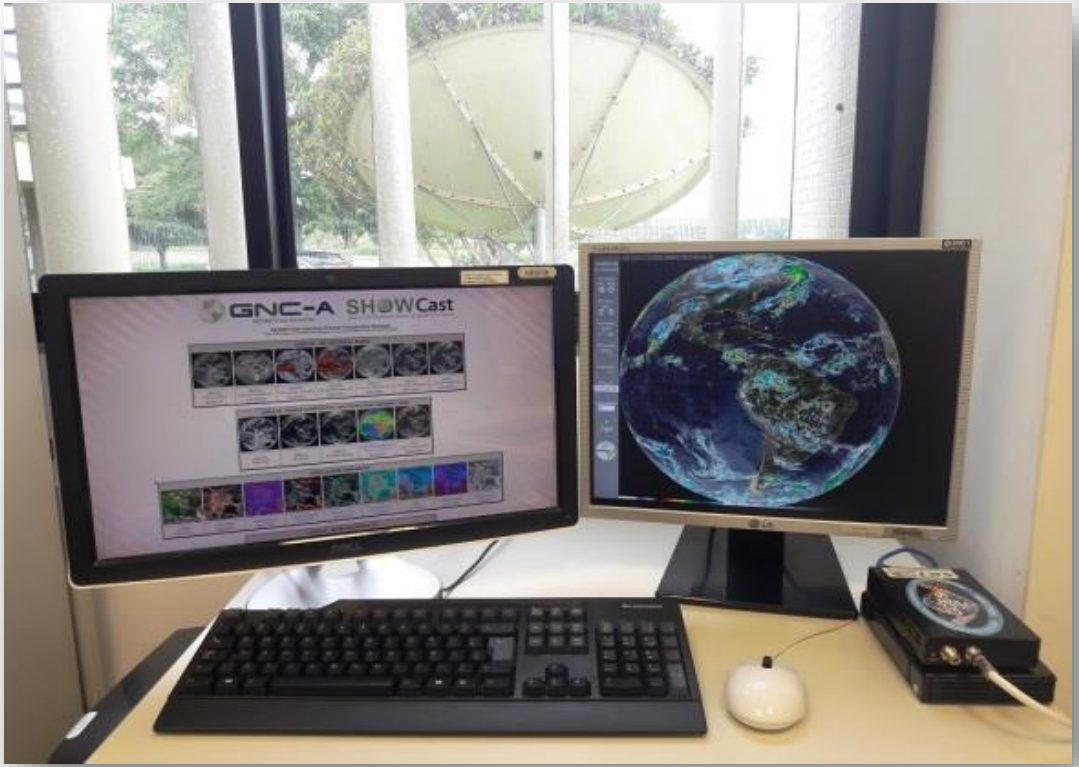


In most cases, the human and technological resources are not available to develop custom products and display interfaces. That's where SHOWCast could come in handy. Let's see...

The SHOWCast Solution

Download the latest version at: https://geonetcast.wordpress.com/showcast/

First version of SHOWCast running on a GNC-A station (November 6, 2019)



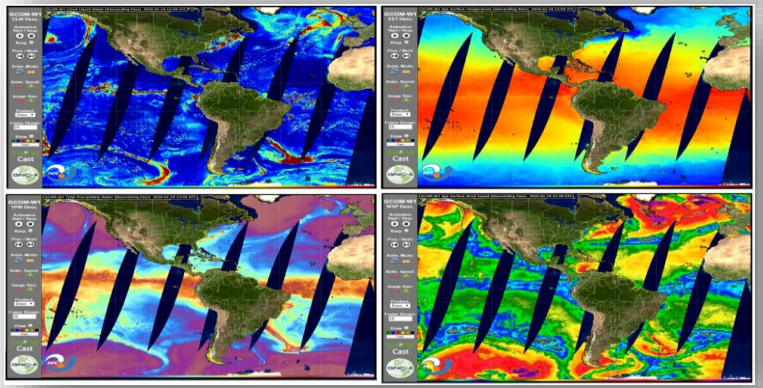
SHOWCast

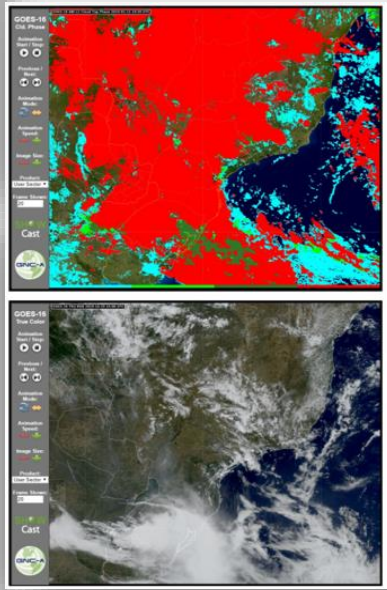
Simple HTML Operational Wrapper for GEONETCast-Americas

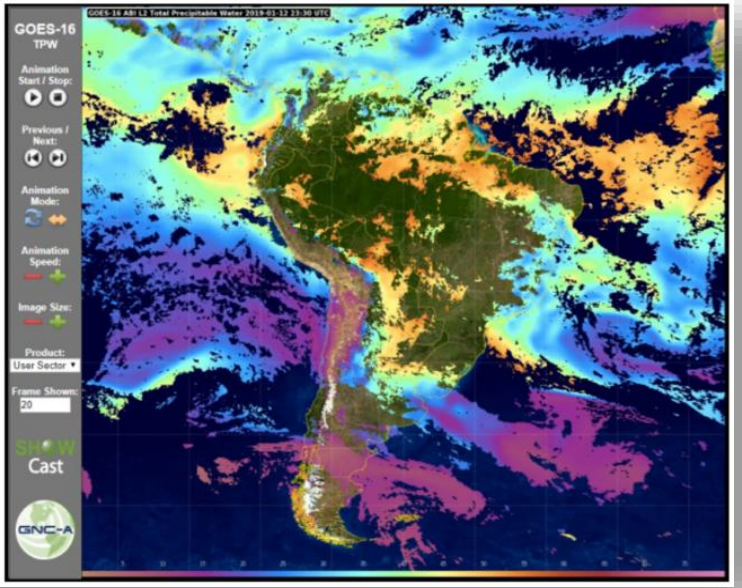
SHOWCast was created to provide a simple yet powerful solution for operational data processing and visualization.

SHOWCast: Main Goals

- Provide a free tool that can be customized (both processing and display) and put to work without the need for a GREAT knowledge of programming / web development (human resources).
- Provide a free tool that can be adapted to the available hardware (technology resources).





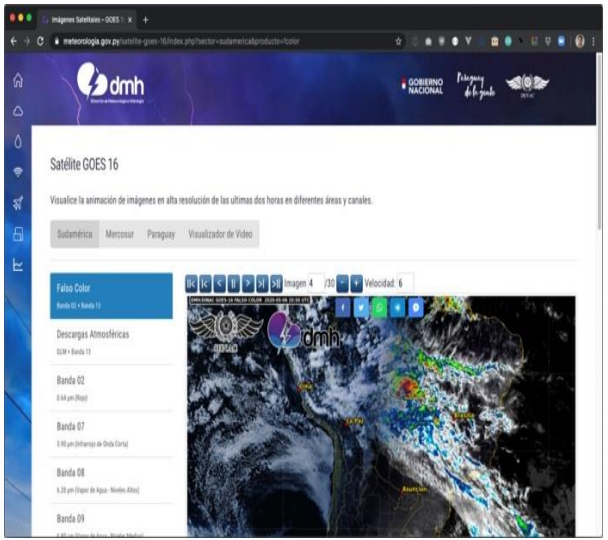


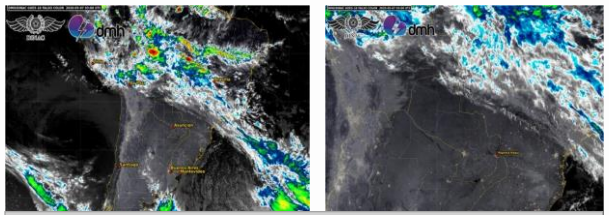
SHOWCast: Different Types of Users

Users wanting to use the processing and visualization tools. Adjustments according to user needs.

Credits: William Abarca (MARN El Salvador)

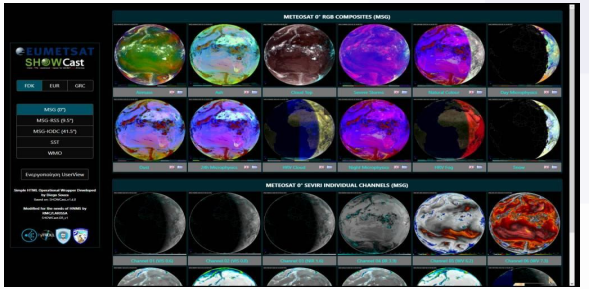
Users that already have means for visualization and would just like to use the example scripts

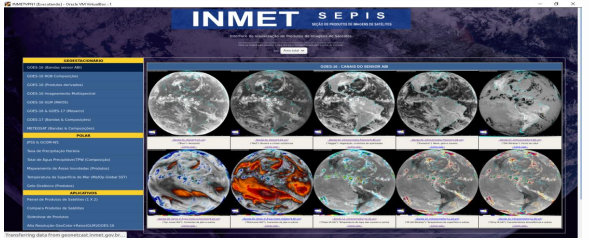


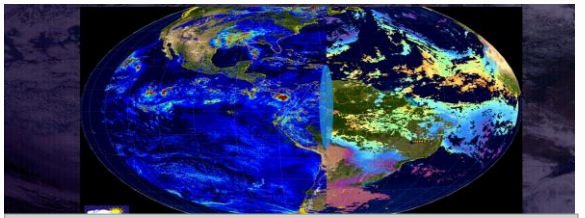


Credits: Ever Barreto (Asunsíon Catholic University) / Wilson Caballero (DINAC) - Paraguay

New adaptations and functions.

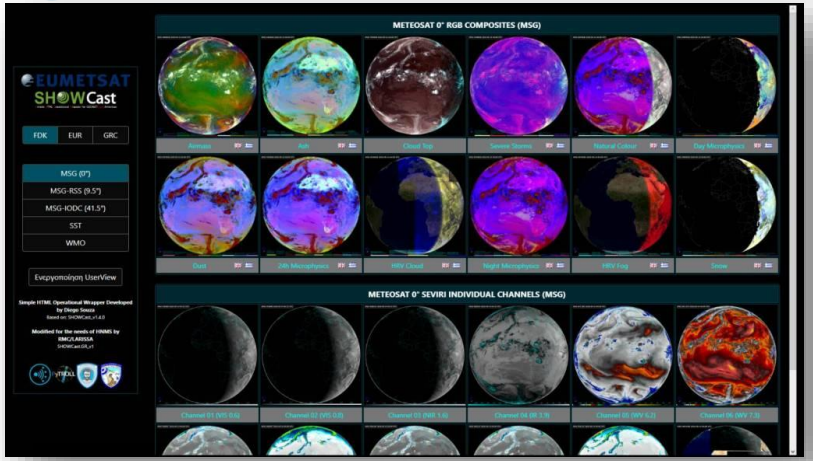


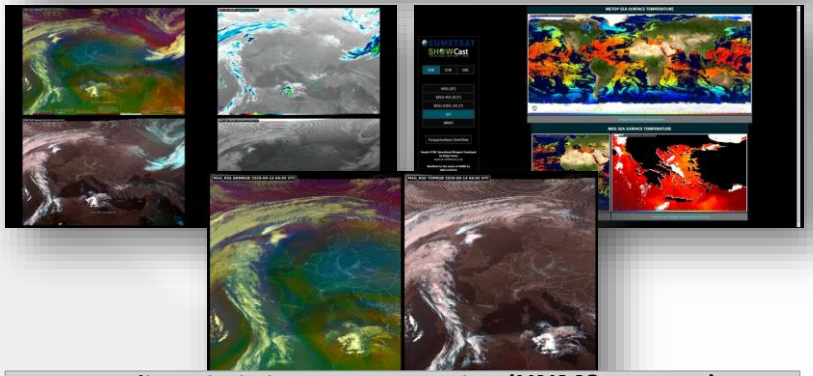




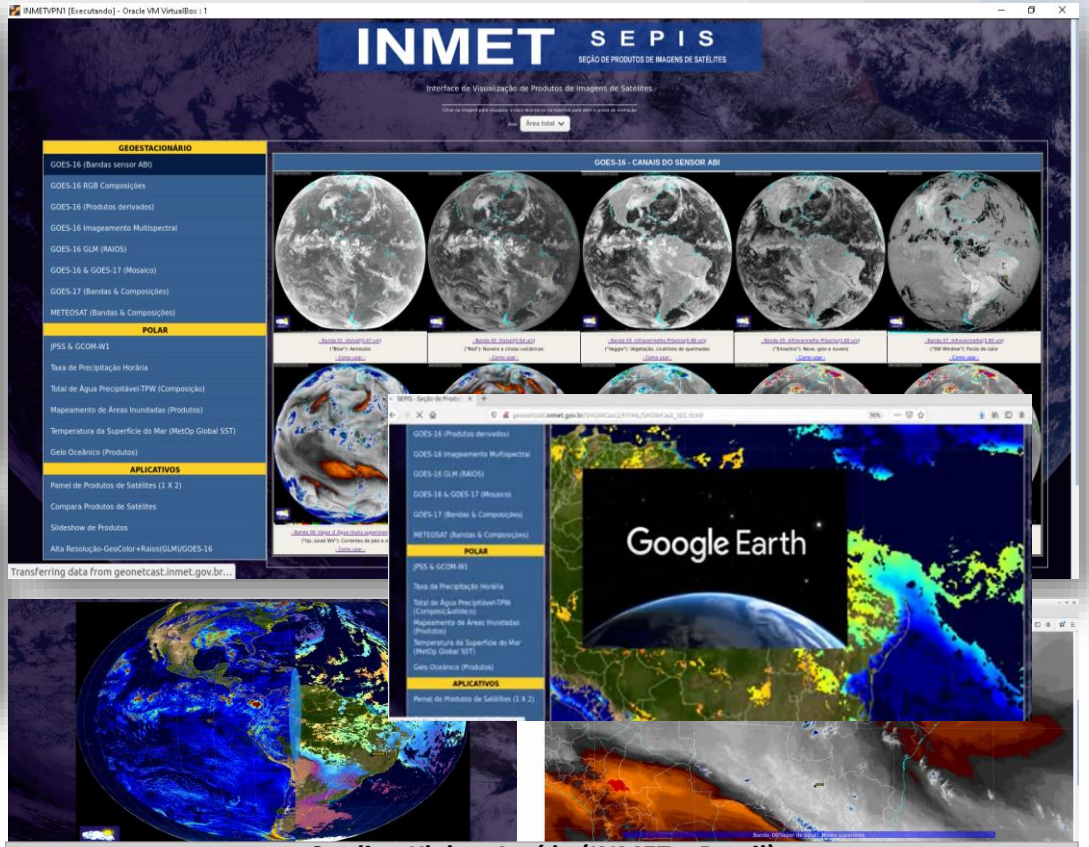
Credits: Kleber Ataíde (INMET - Brazil)

SHOWCast: Adaptation Examples



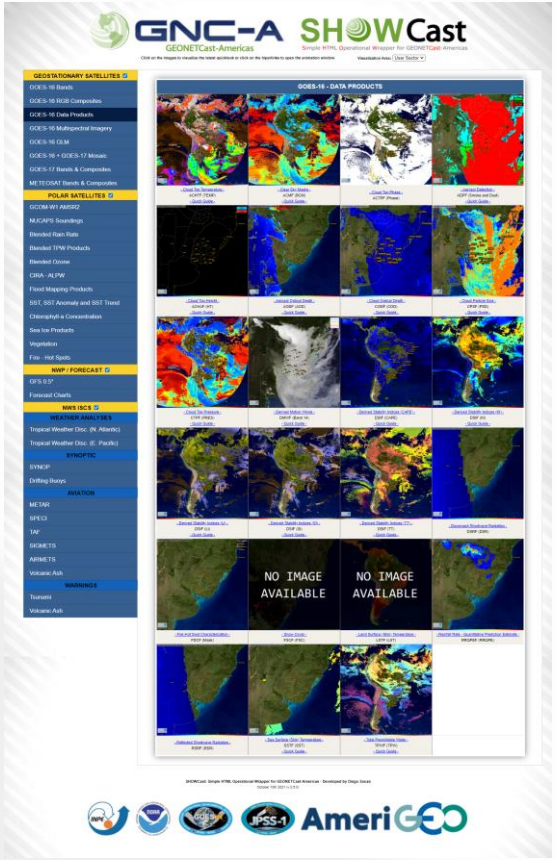


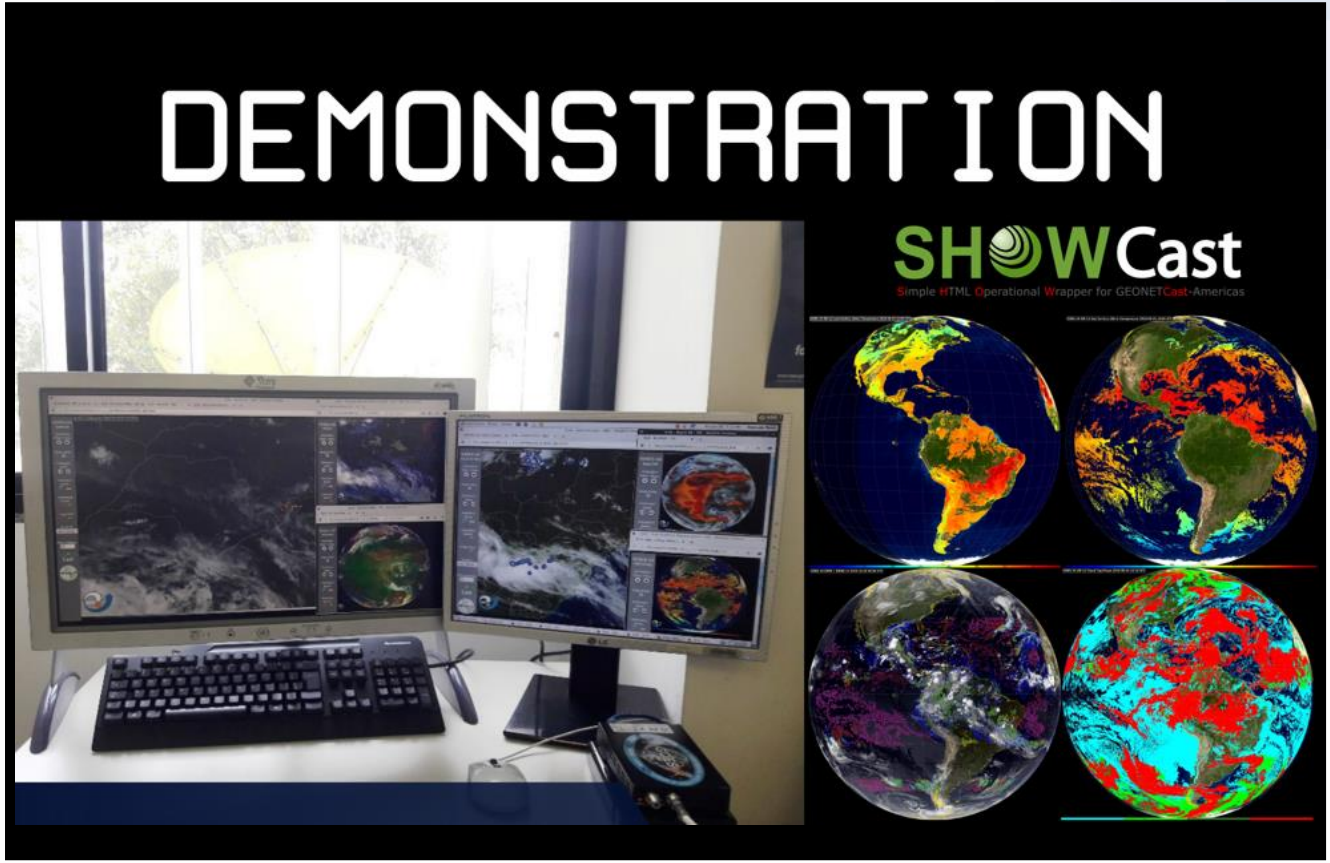
Credits: Dimitrious Papanastasiou (HNMS - Greece)



Credits: Kleber Ataíde (INMET – Brazil)

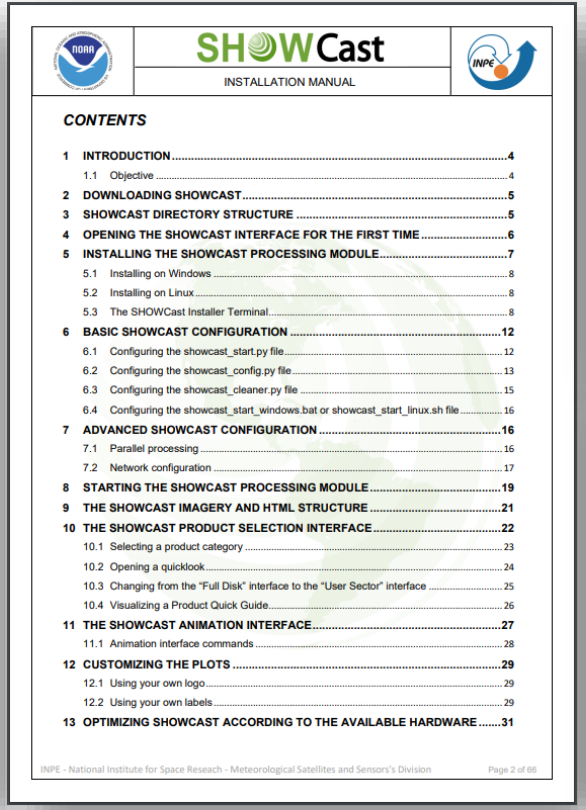
SHOWCast: Demonstration





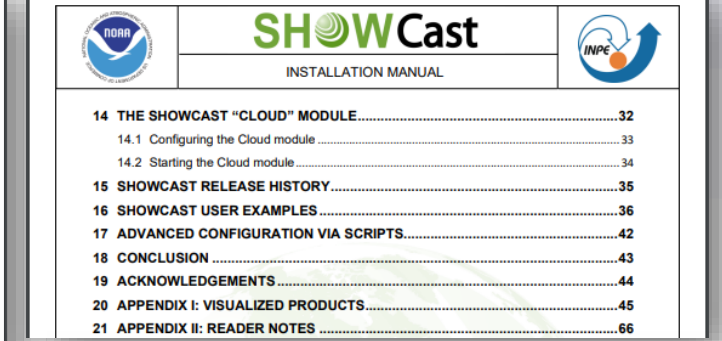
SHOWCast: Installation and Configuration

Download the latest version at: https://geonetcast.wordpress.com/showcast/



SHOWCast
INSTALLATION MANUAL

CONTENTS

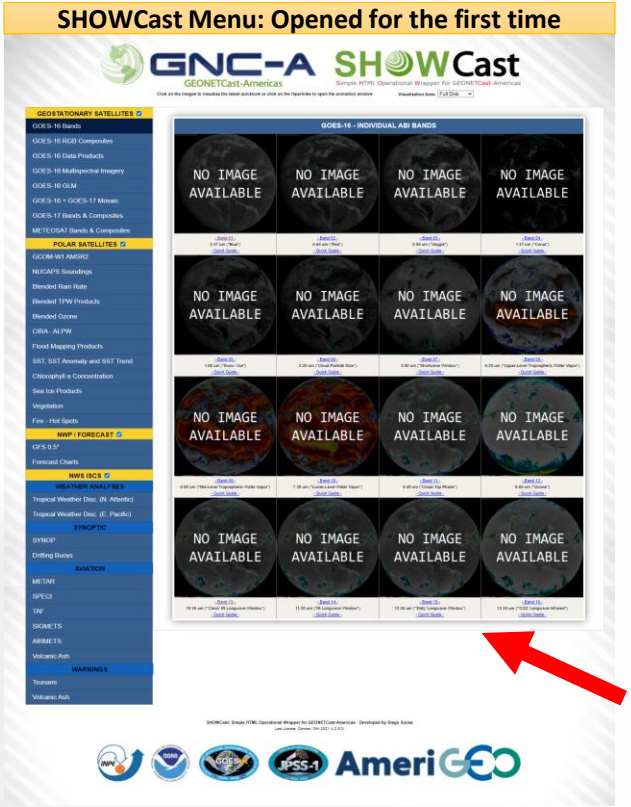


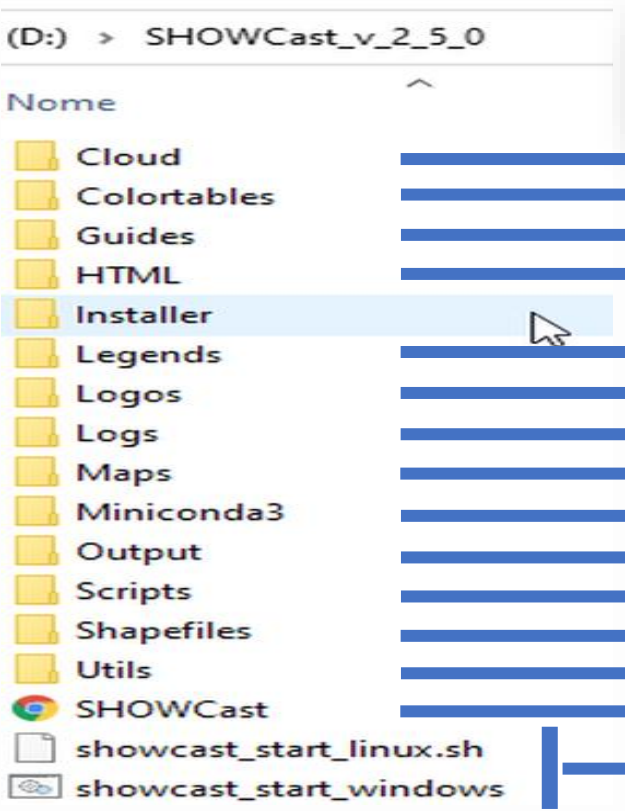
SHOWCast
INSTALLATION MANUAL

SHOWCast: Installation Procedure

Download the latest version at: https://geonetcast.wordpress.com/showcast/

SHOWCast Menu: Opened for the first time



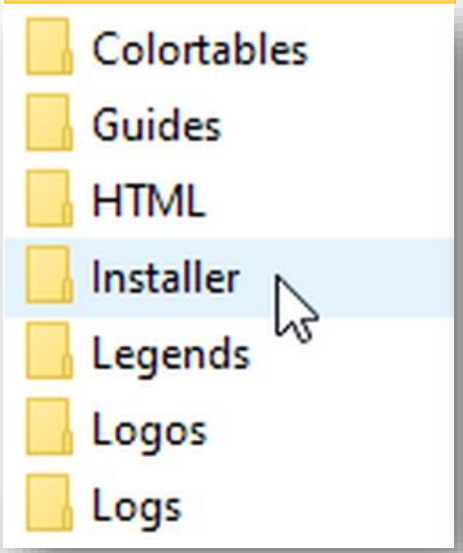


SHOWCast
Simple HTML Operational Wrapper for GEONETCast-Americas

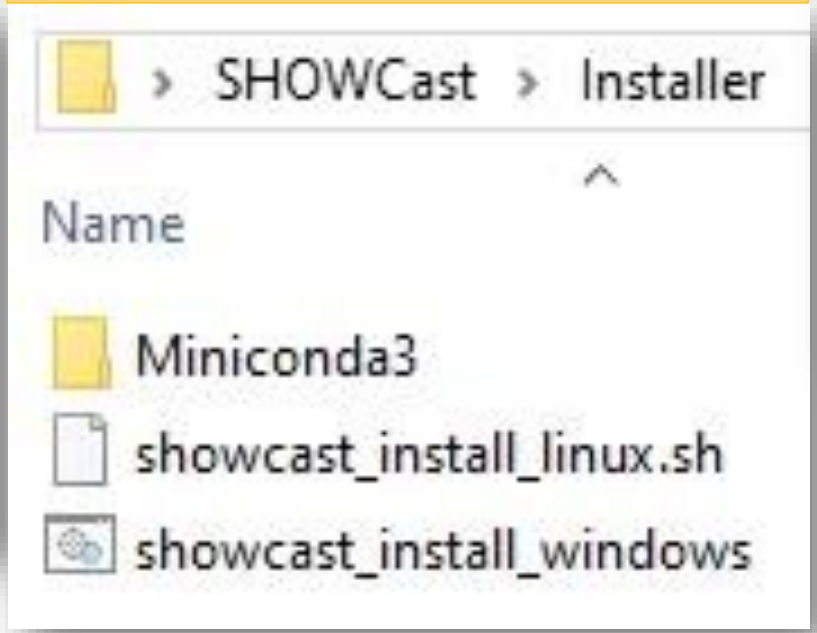
- "Cloud" module
- Some custom color palettes used
- Product "Quick Guides" (PDFs)
- HTML visualization structure
- Installation files
- Legends used by the scripts
- Logos used by the scripts
- Log Files (what have been processed)
- Background maps used by the scripts
- Python files (libraries and modules)
- Historical plots
- Python scripts
- Shapefiles used by the scripts
- Third party software
- SHOWCast visualization interface
- Starts the SHOWCast processing (Linux or Windows)

SHOWCast: Installation Procedure

Inside the “Installer” folder...



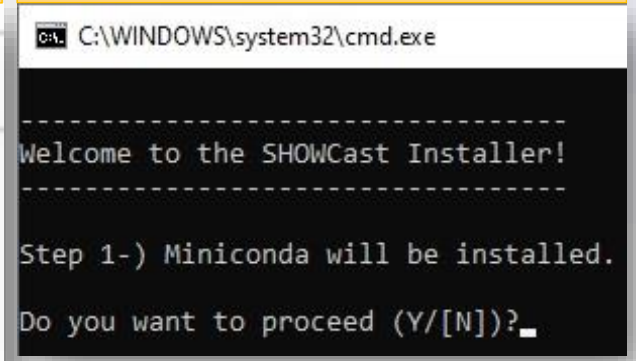
... We have two installation files (Windows or Linux)



Windows: Just double-click the ".bat" file

Linux: Change file permissions and run ".sh" script

The installation window will pop-up



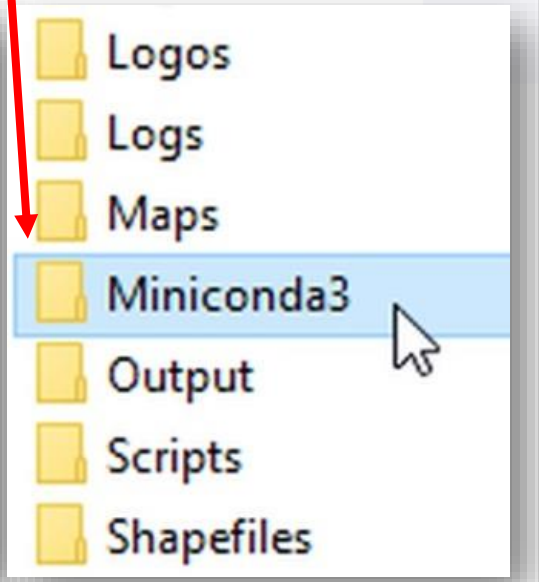
For both operating systems, the installation message will be the same.

This automated installation was introduced in version 2.0 and made things much easier for users.

SHOWCast: Installation Procedure

First, the “Miniconda 3” (virtual environment and package manager) will be installed and the “Miniconda3” folder will appear in the main SHOWCast directory. Note: You do not need to access this folder.

```
-----------------------------------
Welcome to the SHOWCast Installer!
-----------------------------------

Step 1-) Miniconda will be installed.

Do you want to proceed (Y/[N])?y

Miniconda installation directory: C:\SHOWCast\Miniconda3\

Installing Miniconda... [this will take some minutes]
```

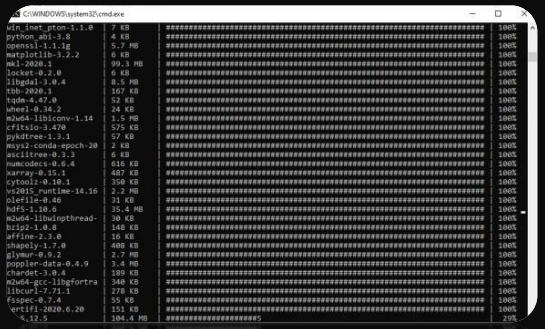


SHOWCast: Installation Procedure

Then, the "showcast" virtual environment is automatically created. This is where all the python libraries will be installed.

```
-----------------------------------
Welcome to the SHOWCast Installer!
-----------------------------------

Step 1-) Miniconda will be installed.

Do you want to proceed (Y/[N])?y

Miniconda installation directory: C:\SHOWCast\Miniconda3\

Installing Miniconda... [this will take some minutes]

Miniconda installation finished.

Step 2-) The SHOWCast environment will be created.

Do you want to proceed (Y/[N])?
```

```
Creating the SHOWCast environment... [this will take some minutes]

Collecting package metadata (repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: C:\SHOWCast\Miniconda3\envs\showcast

  added / updated specs:
    - cartopy
    - gdal
    - glymur
    - matplotlib
    - netcdf4
    - pillow
    - pyhdf
    - pyorbital
    - pyproj
    - pyresample
    - satpy
```

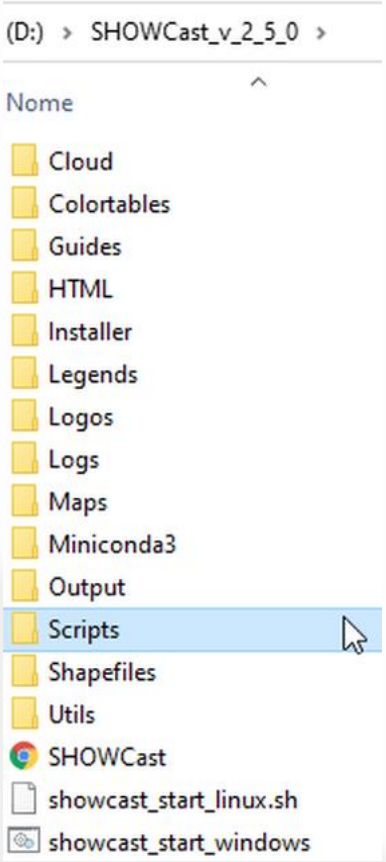


After a few minutes, when you see the following message, the SHOWCast procesing tools installation is complete.

```
jpeg-9d                  |  344 KB  | ################
m2w64-expat-2.1.1        |  160 KB  | ################
scipy-1.3.2              |   14.6 MB | ################
krb5-1.17.1              |  855 KB  | ################
pyproj-2.6.1.post1       |  376 KB  | ################
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate showcast
#
# To deactivate an active environment, use
#
#     $ conda deactivate

Press any key to continue . . .
```

SHOWCast is installed. Now we may proceed with the configuration.

SHOWCast: Configuration Procedure



We basically have to configure four files

showcast_start_linux.sh
showcast_start_windows

Parallel processing

showcast_cleaner.py
Arquivo PY
8,01 KB

showcast_config.py
Arquivo PY
405 KB

showcast_start.py
Arquivo PY
5,34 KB

Automatic deletion | **Product selection** | **Data reception**

showcast_start_linux.sh or showcast_start_windows.bat: Number of parallel processes

showcast_start.py: Your ingestion directory (from GNC-A, GRB, AWS, etc.)

showcast_config.py: Product configuration (which products you want to process and how you want to process them)

showcast_cleaner.py (optional): Automatic deletion of historical files (both ingestion and processing)

SHOWCast: showcast_start.py

```
41  #-----------------------------------------------------------------------------------------------
42  # GEONETCast-Americas ingestion directory (AVOID USING DIRECTORIES WITH SPACES)
43  ingest_dir = 'D://data//fazzt//'      # Windows Example - Change it according to your GNC-A Station
44
45  # SHOWCast visualization directory
46  vis_dir = showcast_dir + '//HTML//Output//'
47  #-----------------------------------------------------------------------------------------------
```

It is also possible to use network directories:

ingest_dir = '//150.163.187.66//fazzt//'
vis_dir = '//150.163.187.66//SHOWCast//HTML//Output//'

SHOWCast: showcast_config.py

```
#-----------------------------------------------------------------------------------------------------
gl6_band13_sec             = True # GOES-16 L2 CMI - Band 13 - USER SECTOR

gl6_band13_sec_process     = 1                                                    # Process cicle for this product
gl6_band13_sec_directory   = ingest_dir + 'GOES-R-CMI-Imagery//Band13//'           # Folder where the data is found
gl6_band13_sec_identifier  = '*L2-CMIPF-M*C13_G16*.nc'                            # Unique string on the file name
gl6_band13_sec_max_files   = 1                                                    # Max number of historical files to be processed
gl6_band13_sec_extent      = [-63.0, -35.0, -35.0, -10.0]                         # [min_lon, min_lat, max_lon, max_lat]
gl6_band13_sec_resolution  = 2  # Max Res.: 2 km                                  # Final plot resolution
gl6_band13_sec_interval    = '00,10,20,30,40,50'                                  # Processing interval
gl6_band13_sec_config      = '_SEC'                                               # Configuration string
gl6_band13_sec_script      = showcast_dir + '//Scripts//process_glX_bands_sec.py' # Script to activate
gl6_band13_sec_output      = showcast_dir + '//Output//'                          # Output folder

products.append('gl6_band13_sec') # Add the product to the list
#-----------------------------------------------------------------------------------------------------
```

SHOWCast: showcast_cleaner.py

```
31  #-----------------------------------------------------------------------------------------------------------
32  # USER CONFIGURATION BEGIN
33  #-----------------------------------------------------------------------------------------------------------
34  #-----------------------------------------------------------------------------------------------------------
35  # GEONETCast-Americas ingestion directory (AVOID USING DIRECTORIES WITH SPACES)
36  ingest_dir = 'D://data//fazzt//'          # Windows Path Separator according to your GNC-A Station
37
38  # To delete historical files in the output folder, set as True
39  delete_historical_output = True
40  # To delete historical files in the ingest folder, set as True
41  delete_historical_ingest = False
42
43  # Number of days and hours to keep files in the Output directory
44  # The number of hours will be added to the number of days
45  # e.g: Delete files older than 5 hours (max_days = 0 / max_hours = 5)
46  # e.g: Delete files older than 1 day and 2 hours (max_days = 1 / max_hours = 2)
47  max_days_output = 3
48  max_hours_output = 0
49
50  # Number of days and hours to keep files in the Ingest directory
51  # The number of hours will be added to the number of days
52  # e.g: Delete files older than 5 hours (max_days = 0 / max_hours = 5)
53  # e.g: Delete files older than 1 day and 2 hours (max_days = 1 / max_hours = 2)
54  max_days_ingest = 3
55  max_hours_ingest = 0
56  #-----------------------------------------------------------------------------------------------------------
57  #-----------------------------------------------------------------------------------------------------------
58  # USER CONFIGURATION END
59  #-----------------------------------------------------------------------------------------------------------
60  #-----------------------------------------------------------------------------------------------------------
```

Your ingestion directory

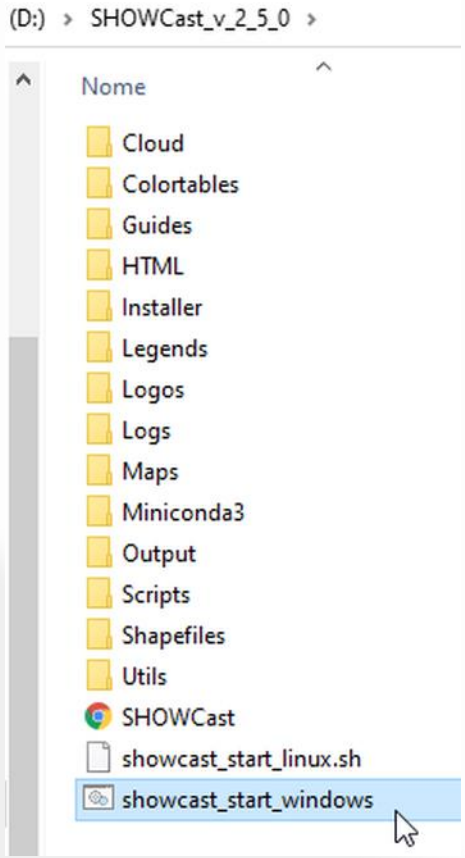
Do you want to delete SHOWCast historical plots?

Do you want to delete ingestion historical files?

For how many days do you want to keep SHOWCast plots?

For how many days do you want to keep the reception files?

SHOWCast: Starting the Data Monitor and Processing



This will start one terminal per parallel process that has ben configured:

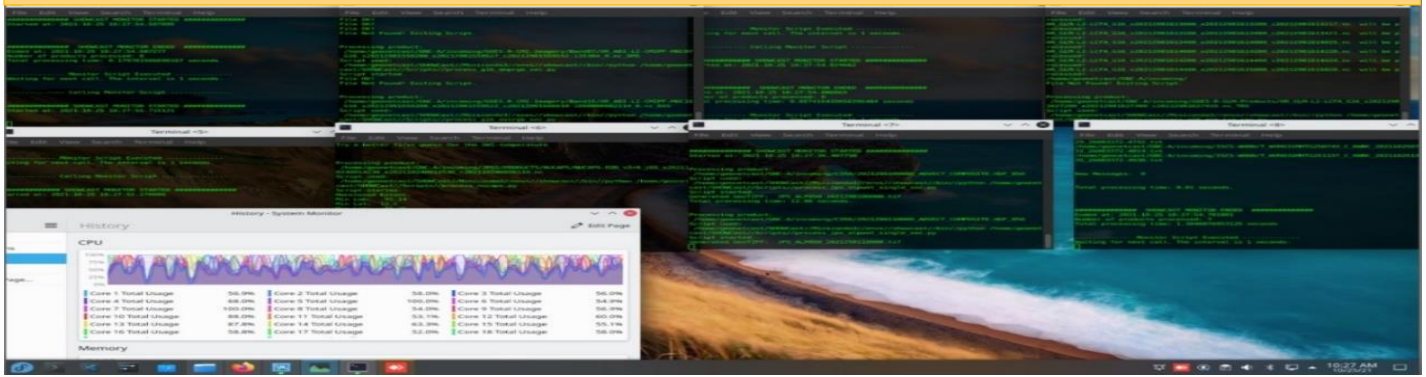
Windows:

```
:: Select the number of parallel SHOWCast processes
SET /A num_process=1
```

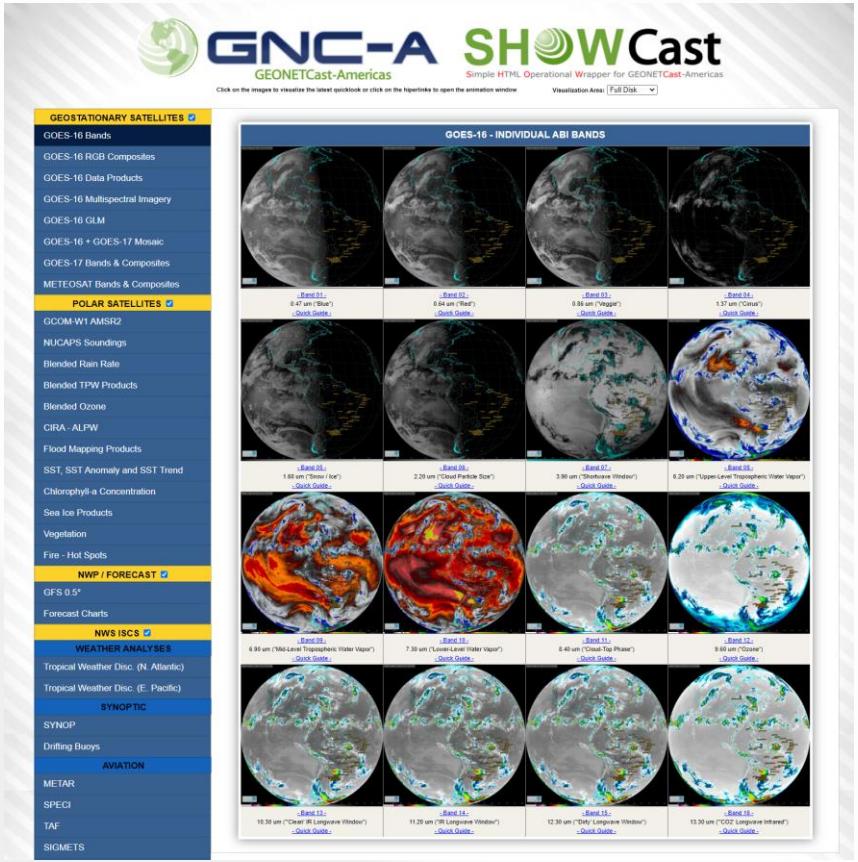
Linux:

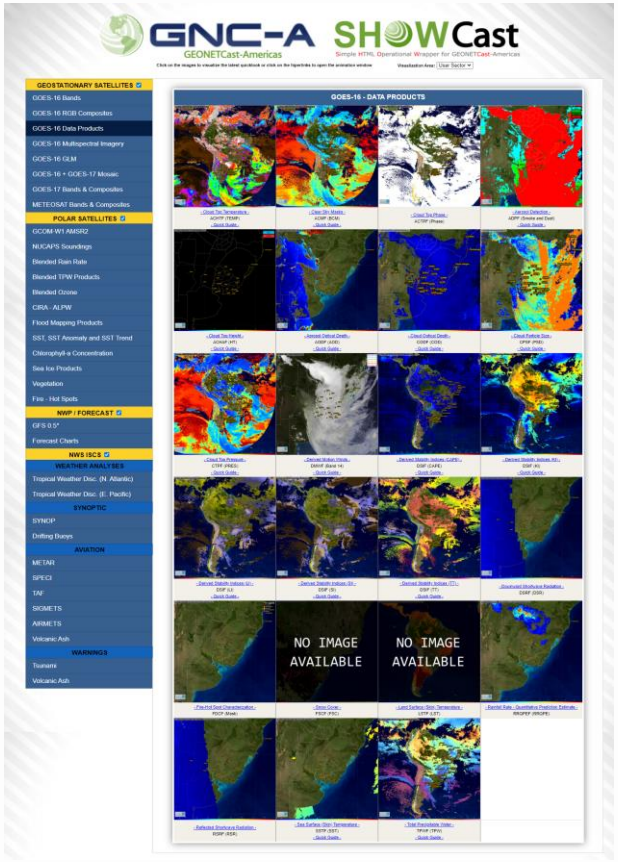
```
# Select the number of SHOWCast parallel processes
declare -i num_process=1
```

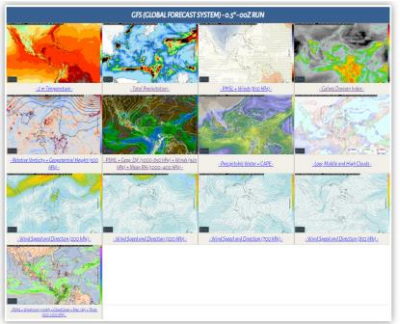
Each process will process "x" products, according to the configuration in showcast_config.py



SHOWCast: Images Will Start to Appear







SHOWCast: Visualized Products

GEOSTATIONARY SATELLITES ☑
- GOES-16 Bands
- GOES-16 RGB Composites
- GOES-16 Data Products
- GOES-16 Multispectral Imagery
- GOES-16 GLM
- GOES-16 + GOES-17 Mosaic
- GOES-17 Bands & Composites
- METEOSAT Bands & Composites

POLAR SATELLITES ☑
- GCOM-W1 AMSR2
- NUCAPS Soundings
- Blended Rain Rate
- Blended TPW Products
- Blended Ozone
- CIRA - ALPW
- Flood Mapping Products
- SST, SST Anomaly and SST Trend
- Chlorophyll-a Concentration
- Sea Ice Products
- Vegetation
- Fire - Hot Spots

NWP / FORECAST ☑
- GFS 0.5°
- Forecast Charts

NWS ISCS ☑

WEATHER ANALYSES
- Tropical Weather Disc. (N. Atlantic)
- Tropical Weather Disc. (E. Pacific)

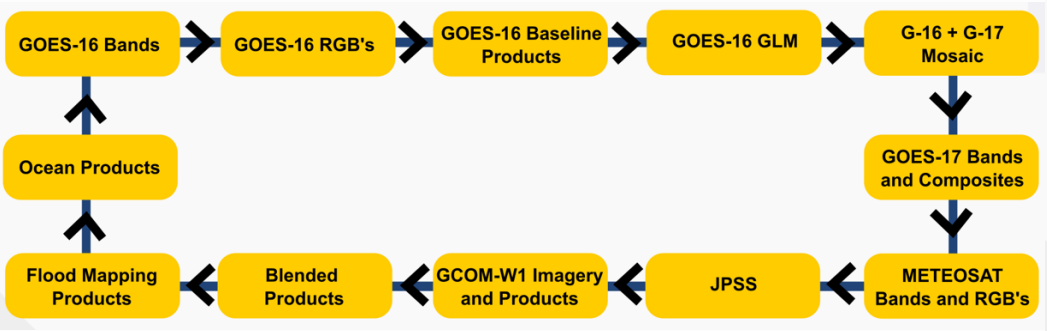
SYNOPTIC
- SYNOP
- Drifting Buoys

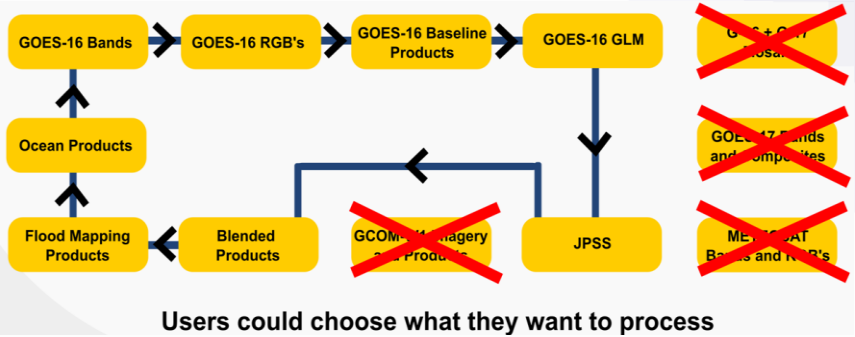
AVIATION
- METAR
- SPECI
- TAF
- SIGMETS
- AIRMETS
- Volcanic Ash

WARNINGS
- Tsunami
- Volcanic Ash

SHOWCast: Parallel Processing

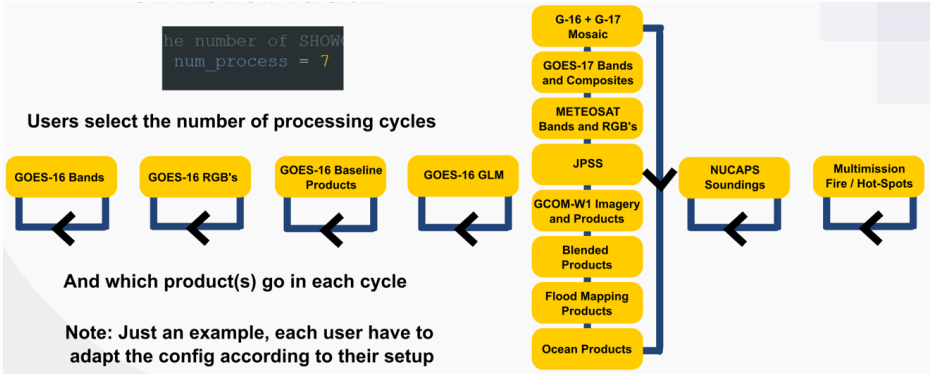
In old versions, all processing was done sequentially.





Users could choose what they want to process

In newer versions, users can start parallel processes and choose which product to go in each cycle.

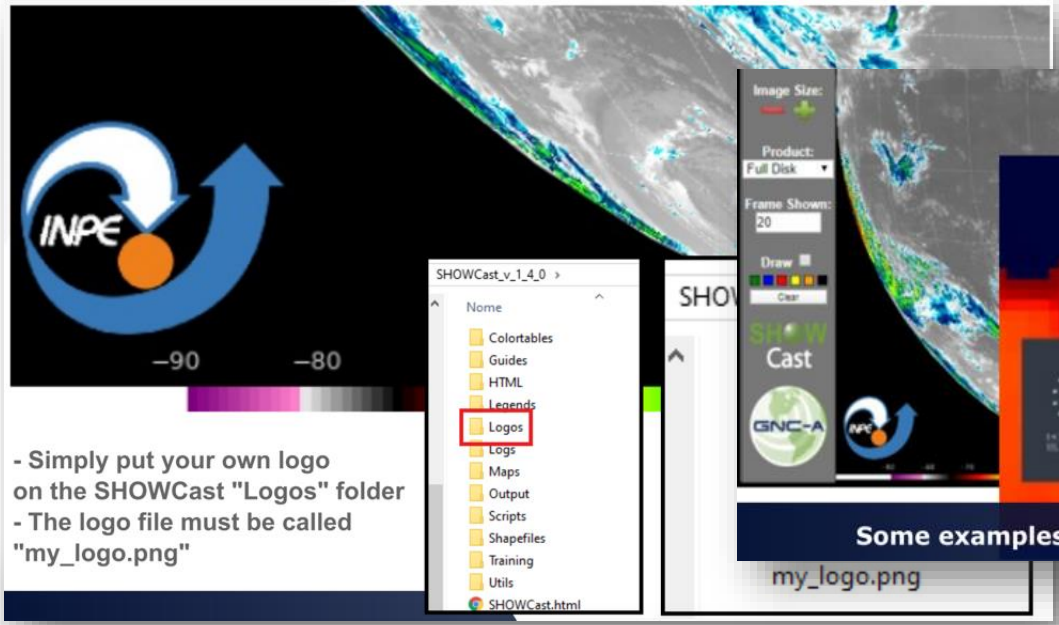


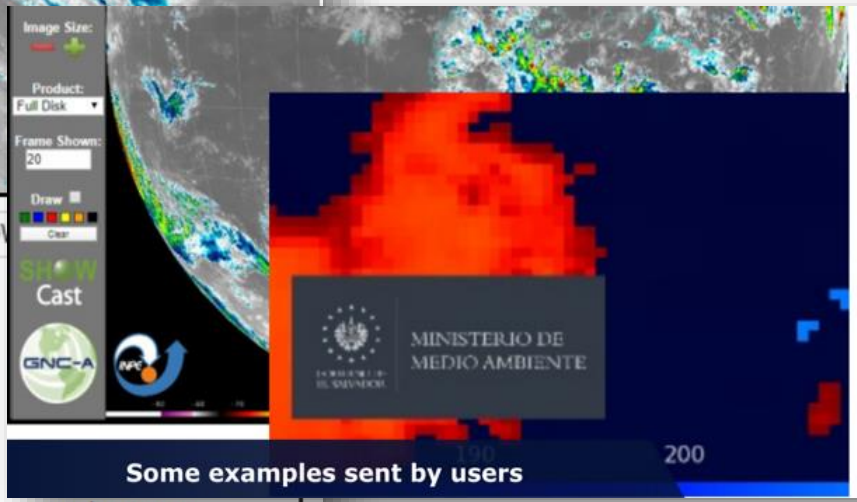
SHOWCast: Parallel Processing

In this variable, users select the process number for a given product

```
#-------------------------------------------------------------------------------------------------
gl6_band13_sec            = True # GOES-16 L2 CMI - Band 13 - USER SECTOR

gl6_band13_sec_process    = 1                                                    # Process cicle for this product
gl6_band13_sec_directory  = ingest_dir + 'GOES-R-CMI-Imagery//Band13//'          # Folder where the data is found
gl6_band13_sec_identifier = '*L2-CMIPF-M*C13_G16*.nc'                            # Unique string on the file name
gl6_band13_sec_max_files  = 1                                                    # Max number of historical files to be processed
gl6_band13_sec_extent     = [-63.0, -35.0, -35.0, -10.0]                         # [min_lon, min_lat, max_lon, max_lat]
gl6_band13_sec_resolution = 2  # Max Res.: 2 km                                  # Final plot resolution
gl6_band13_sec_interval   = '00,10,20,30,40,50'                                  # Processing interval
gl6_band13_sec_config     = '_SEC'                                               # Configuration string
gl6_band13_sec_script     = showcast_dir + '//Scripts//process_glX_bands_sec.py' # Script to activate
gl6_band13_sec_output     = showcast_dir + '//Output//'                          # Output folder

products.append('gl6_band13_sec') # Add the product to the list
#-------------------------------------------------------------------------------------------------
```

SHOWCast: Adding Your Own Logos





SHOWCast: Adding Your Own Labels

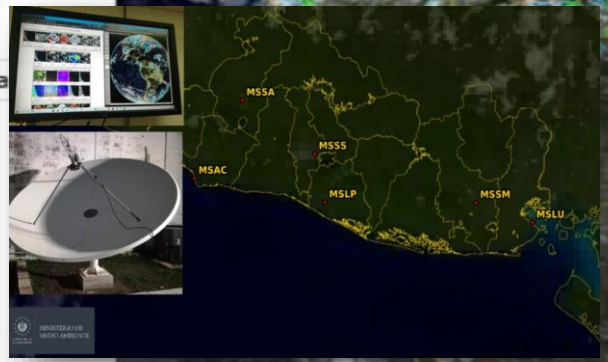
labels_g16.ini

```
[label_1]
label = My GNC-A
lon = -45.0075
lat = -22.6845
x_offset = 0.1
y_offset = 0.1
size = 8
color = gold
marker_type = bo
marker_color = red
marker_size = 5
```

SHOWCast_v_1_4_0 › Utils › La

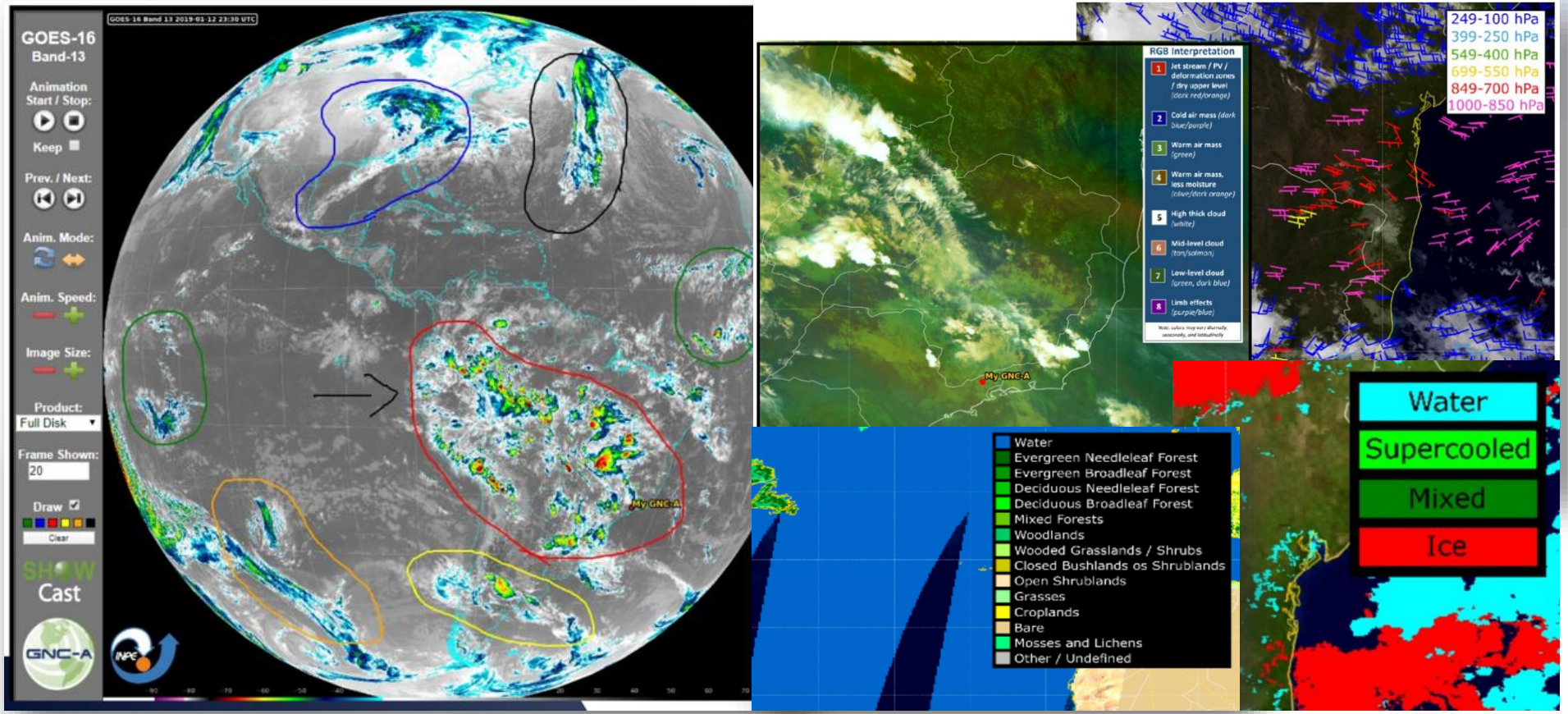
Nome

- labels_example.ini
- labels_g16.ini
- labels_g17.ini
- labels_msg.ini



Example label INI files available on SHOWCast

SHOWCast: Adding Drawings and Custom Legends



SHOWCast: Optimization x Hardware

It is possible to adapt SHOWCast to the available hardware, changing the following settings:

For each product:

- **Select which products will or not be processed.**
- **Parallel processing: Select in which process each product will be processed.**
- **The region we want to create the plot.**
- **Select the plot resolution.**
- **Select the plot interval (GOES-R)**
- **Use multiple servers to produce the imagery.**

```
#----------------------------------------------------------------------------------------------------
g16_band13_sec             = True # GOES-16 L2 CMI - Band 13 - USER SECTOR

g16_band13_sec_process     = 1
g16_band13_sec_directory   = ingest_dir + 'GOES-R-CMI-Imagery//Band13//'
g16_band13_sec_identifier  = '*L2-CMIPF-M*C13_G16*.nc'
g16_band13_sec_max_files   = 1
g16_band13_sec_extent      = [-63.0, -35.0, -35.0, -10.0]
g16_band13_sec_resolution  = 2  # Max Res.: 2 km
g16_band13_sec_interval    = '00,10,20,30,40,50'
g16_band13_sec_config      = '_SEC'
g16_band13_sec_script      = showcast_dir + '//Scripts//process_g1X_bands_sec.py'
g16_band13_sec_output      = showcast_dir + '//Output//'

products.append('g16_band13_sec') # Add the product to the list
#----------------------------------------------------------------------------------------------------
```

SHOWCast: Optimization x Hardware

Example 1

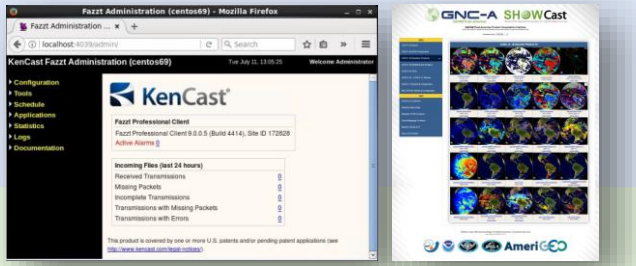
Old versions

AWS / UNIDATA Cloud Module

INTELSAT-21

DVB-S2 Receiver

FAZZT + SHOWCast



GNC-A Antenna

Reception + Processing + Visualization + Storage

SHOWCast: Optimization x Hardware

Example 2

Old versions

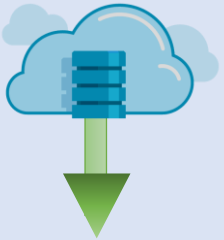
INTELSAT-21

GNC-A Antenna

DVB-S2 Receiver

Data Reception

AWS / UNIDATA Cloud Module



Data Processing + Visualization + Storage

SHOWCast: Optimization x Hardware

Example 3

New versions

SHOWCast Vis. + Processing

Processing 1 + Visualization

INTELSAT-21

AWS / UNIDATA Cloud Module

DVB-S2 Receiver

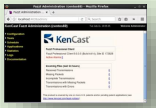
FAZZT Client

SHOWCast Processing

GNC-A Antenna

```
# SHOWCast visualization directory
vis_dir = '//192.168.0.11//SHOWCast//HTML//Output//'
```

Data Reception



Processing 2

SHOWCast: Secondary Goals

More than 120 Python script examples

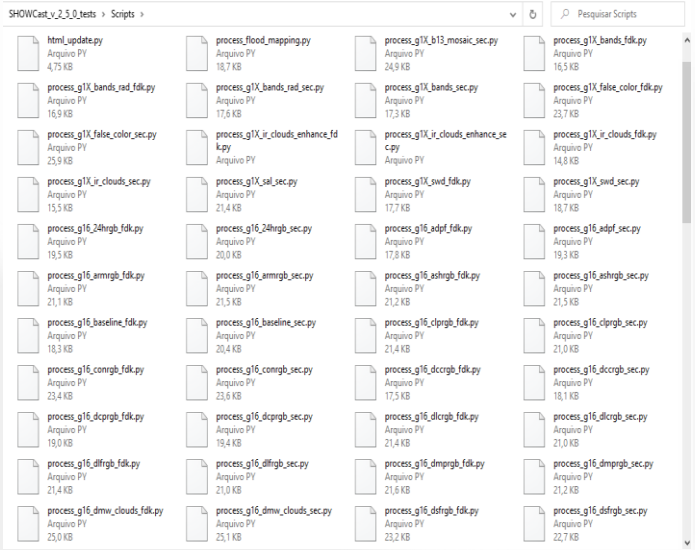
```python
# Training: Python and GOES-R imagery: Script 1 - Basic Plot / Extracting Pixel Values

# Required modules
from netCDF4 import Dataset      # Read / Write NetCDF4 files
import matplotlib.pyplot as plt  # Plotting library

# Open the GOES-R image
# Download files at this link: http://home.chpc.utah.edu/~u0553130/Brian_Blaylock/cgi-bin/goesi6_download.cgi
file = Dataset("OR_ABI-L2-CMIPF-M6C13_G16_s20191981200396_e20191981210116_c20191981210189.nc")

# Get the pixel values
data = file.variables['CMI'][:]

# Choose the plot size (width x height, in inches)
plt.figure(figsize=(7,7))

# Plot the image
plt.imshow(data, vmin=193, vmax=313, cmap='Greys')

# Save the image
plt.savefig('Image_01.png')

# Show the image
plt.show()
```

LIBRARIES

DATA READING AND MANIPULATION

PLOT CONFIGURATION

IMAGE GENERATION



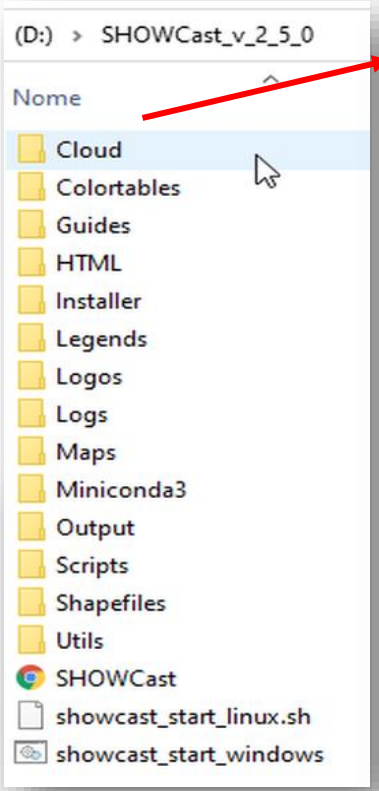
- Encourage users to learn programming so they can process weather / satellite data by providing example scripts and plots for different data sources.

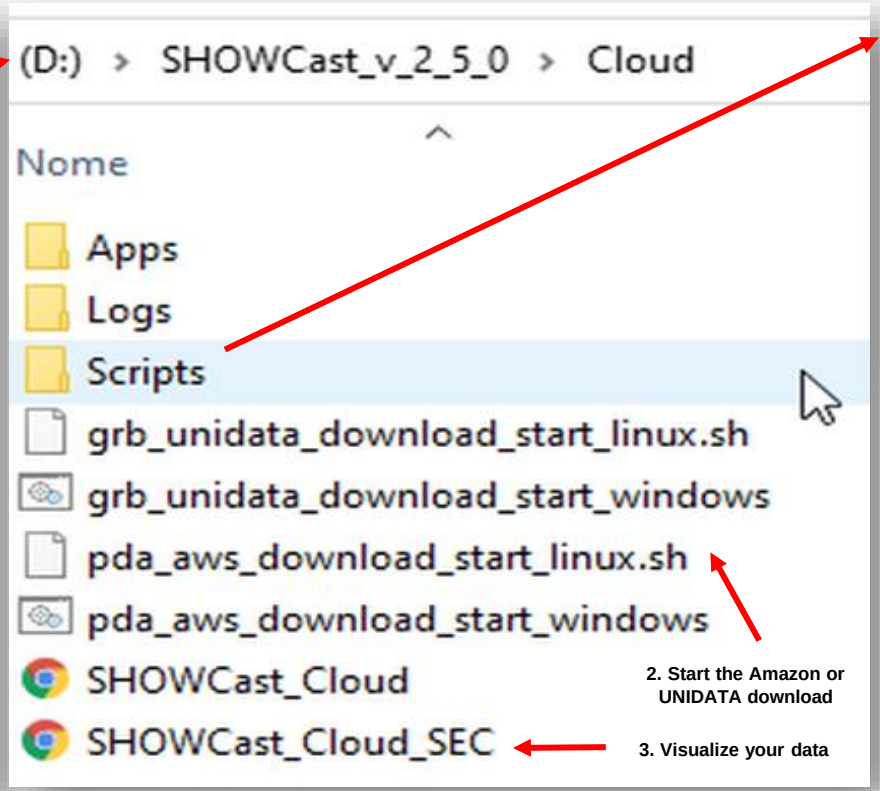
- Provide easy access to data for those without a receiving station.

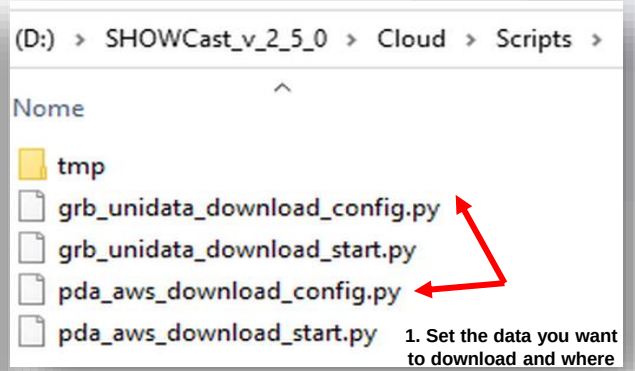
SHOWCast Cloud Module

SHOWCast: "Cloud" Module (AWS or UNIDATA)

"Cloud" Module Configuration








```
73  # Main ingest folder - Where your dow
74  ingest_folder = "C://VLAB//Cloud//"
```

If you configure the same directory for the Cloud module and the SHOWCast monitor, you can use SHOWCast without a station.

SHOWCast: "Cloud" Module (AWS or UNIDATA)

Select what you wish to download

```
#--------------------------------------------------------------------------------------------------------
# ABI L2 BANDS
#--------------------------------------------------------------------------------------------------------

# ABI L2 Cloud and Moisture Imagery - CONUS
ABI_L2_CMIPC         = False
ABI_L2_CMIPC_Product = 'ABI-L2-CMIPC'
ABI_L2_CMIPC_Channel = ['C01', 'C02', 'C03', 'C04', 'C05', 'C06', 'C07', 'C08', 'C09', 'C10', 'C11', 'C12', 'C13', 'C14', 'C15', 'C16']
ABI_L2_CMIPC_Minutes = ['01', '06', '11', '16', '21', '26', '31', '36', '41', '46', '51', '56']
ABI_L2_CMIPC_Folders = 'GOES-R-CMIPC-Imagery//'

# ABI L2 Cloud and Moisture Imagery - FULL DISK
ABI_L2_CMIPF         = True
ABI_L2_CMIPF_Product = 'ABI-L2-CMIPF'
ABI_L2_CMIPF_Channel = ['C01', 'C03', 'C04', 'C05', 'C06', 'C07', 'C08', 'C09', 'C10', 'C11', 'C12', 'C13', 'C14', 'C15', 'C16']
ABI_L2_CMIPF_Minutes = ['00', '10', '20', '30', '40', '50']
ABI_L2_CMIPF_Folders = 'GOES-R-CMI-Imagery//'

# ABI L2 Cloud and Moisture Imagery - MESOSCALE
ABI_L2_CMIPM         = False
ABI_L2_CMIPM_Product = 'ABI-L2-CMIPM'
ABI_L2_CMIPM_Channel = ['C01', 'C02', 'C03', 'C04', 'C05', 'C06', 'C07', 'C08', 'C09', 'C10', 'C11', 'C12', 'C13', 'C14', 'C15', 'C16']
ABI_L2_CMIPM_Mesoscl = ['M1', 'M2']
ABI_L2_CMIPM_Minutes = ['01', '02', '03', '04', '05', '06', '07', '08', '09', '10', '11', '12', '13', '14', '15', '16', '17', '18', '19', '20', '21',
 '22', '23', '24', '25', '26', '27', '28', '29', '30', '31', '32', '33', '34', '35', '36', '37', '38', '39', '40', '41', '42', '43', '44', '45', '46'
, '47', '48', '49', '50', '51', '52', '53', '54', '55', '56', '57', '58', '59']
ABI_L2_CMIPM_Folders = 'GOES-R-CMIPM-Imagery//'
```

What data sets you would like to download

What bands would you like to download?

What interval would you like to download?

What subfolder would you like to store the data?

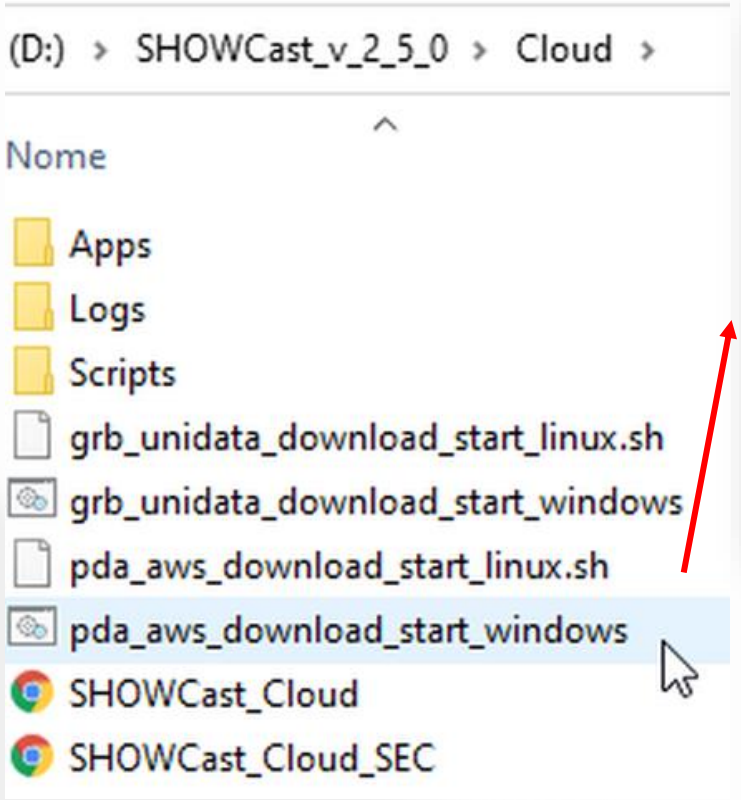
For now it is possible to download:

AWS: All GOES-R bands (L1b or L2) [CONUS, MESO y FULL DISK], All Level 2 products [CONUS, MESO y FULL DISK], GLM and SUVI data.

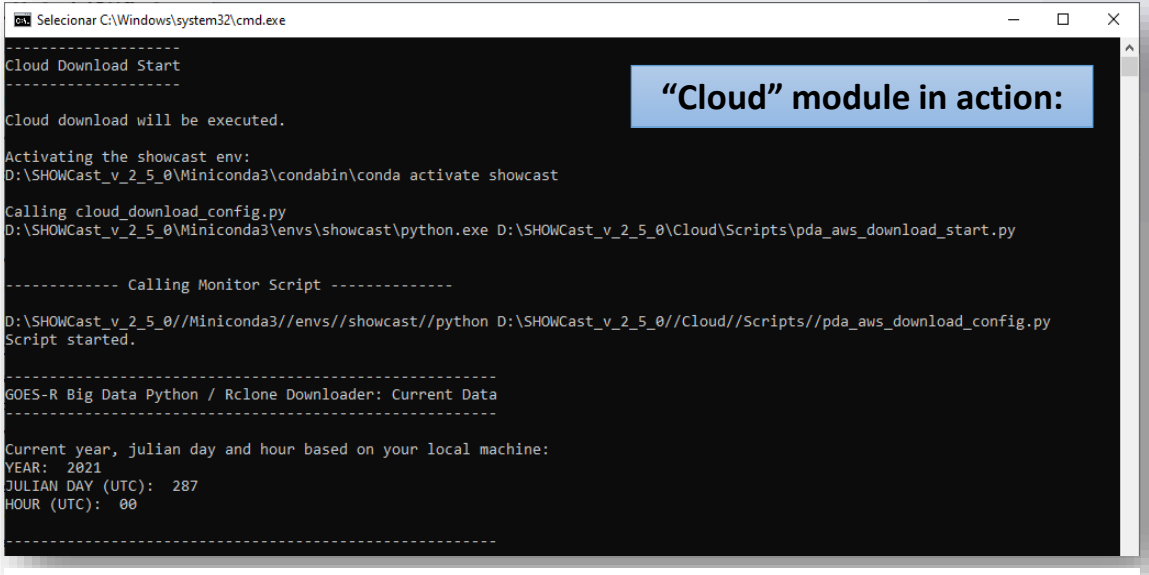
UNIDATA: All GOES-R bands (L1b) [CONUS, MESO y FULL DISK]

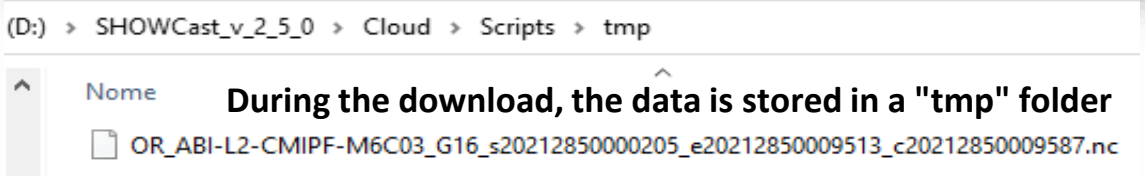
SHOWCast: "Cloud" Module (AWS or UNIDATA)

Starting the "Cloud" module:



"Cloud" module in action:





During the download, the data is stored in a "tmp" folder

SHOWCast: "Cloud" Module (AWS or UNIDATA)

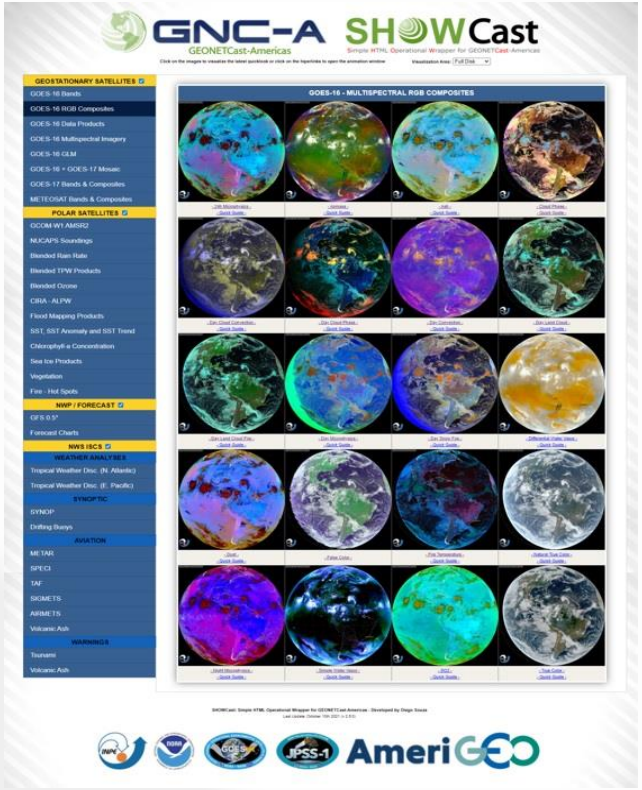
When the download is complete, the files are moved to the configured directory, and the file can be processed and viewed.

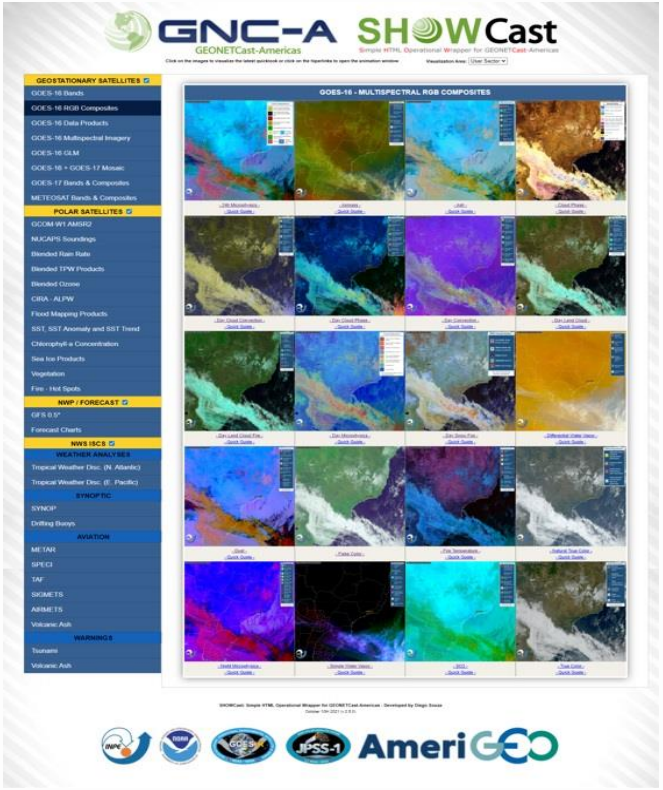
(C:) › VLAB › Cloud › GOES-R-CMI-Imagery › Band03

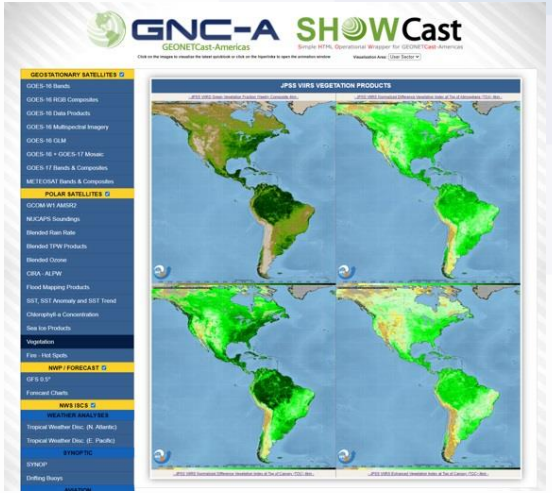
Nome

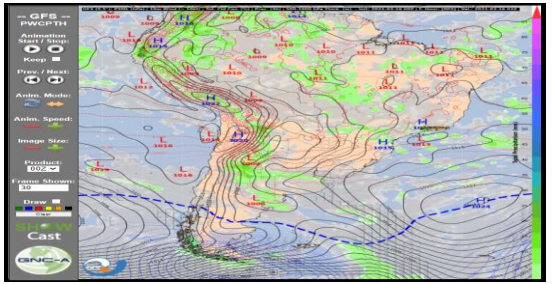
OR_ABI-L2-CMIPF-M6C03_G16_s20212841440207_e20212841449515_c20212841449586.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841500207_e20212841509515_c20212841509586.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841530207_e20212841539515_c20212841539597.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841600207_e20212841609515_c20212841609586.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841610207_e20212841619515_c20212841619585.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841640207_e20212841649515_c20212841649588.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841700205_e20212841709513_c20212841709586.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841730205_e20212841739513_c20212841739592.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841800205_e20212841809513_c20212841809589.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841820205_e20212841829513_c20212841829595.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841900205_e20212841909513_c20212841909593.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841920205_e20212841929513_c20212841929591.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212841940205_e20212841949513_c20212841949590.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212842010205_e20212842019513_c20212842019592.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212842040205_e20212842049513_c20212842049586.nc
OR_ABI-L2-CMIPF-M6C03_G16_s20212842100205_e20212842109513_c20212842109588.nc

SHOWCast: Version 2.5.1



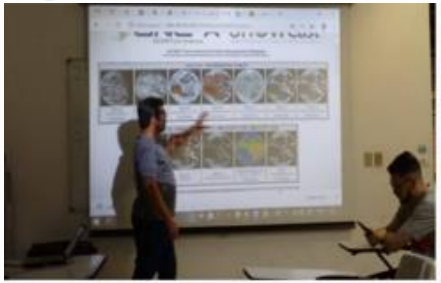


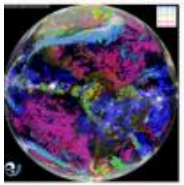


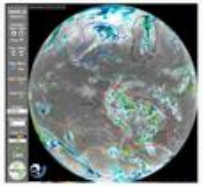


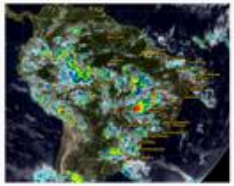
WebP image format support: Reduced file sizes by 30~80%

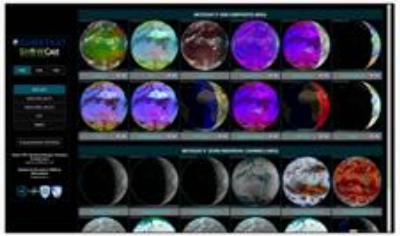
SHOWCast: Version History

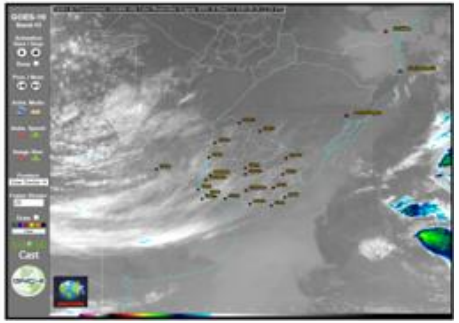












SHOWCast version history:

- V 1.0 (Nov 06 2019): Initial version (57 products)
- V 1.1 (Nov 14 2019): New products
- V 1.2 (Nov 27 2019): Region y resolution
- V 1.3 (Jan 20 2020): Logos, Labels, Annotations and Legends
- V 1.4 (Feb 04 2020): New products
- V 2.0 (Jul 8 2020): New interface, easier installation, new products
- V 2.1 (Jul 30 2020): “Cloud” module
- V 2.2 (Nov 23 2020): Parallel Processing / New products (121 products)
- V 2.3 (Mar 23 2021): 20 s GLM, GFS, ISCS, Ozone, (+140 products)
- V 2.4 (Jul 1 2021): ALPW, SST, SST-A, SST-T, OC, (+150 products)
- V 2.5 (Oct 8 2021): 16 Bands, RGB’s, WebP, Intervals
- V 2.5.1 (Oct 19 2021): Some corrections

SHOWCast: Pros and Cons

PROS

- It is simple
- It works with GNC-A, GRB, Cloud (AWS, OCC, UNIDATA, etc.) or any data reception mechanism that has the same files that it is configured to process.
- It's just a matter of configuring where your ingest directory is.
- Relatively easy to start. It can be used as a starting point for your own processing scheme.

CONS

- For some users it may be too simple.
- Given the simplicity of the current architecture, it is not easy to add more powerful features.
- Development is limited (best effort basis).
- Scripts can be optimized.

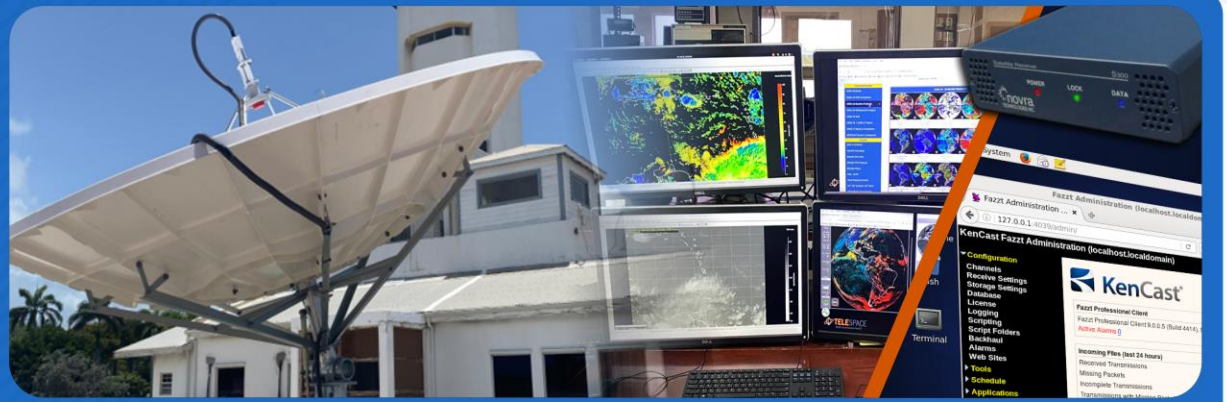
GEONETCast-Americas Training for the Eastern Caribbean States

Day 6 - May 15th

Session 3:

Introduction to SHOWCast

THANK YOU! QUESTIONS?



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DISSM - Meteorological Satellites and Sensors' Division
CGCT - General Coordination of Earth Sciences
INPE - National Institute for Space Research

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