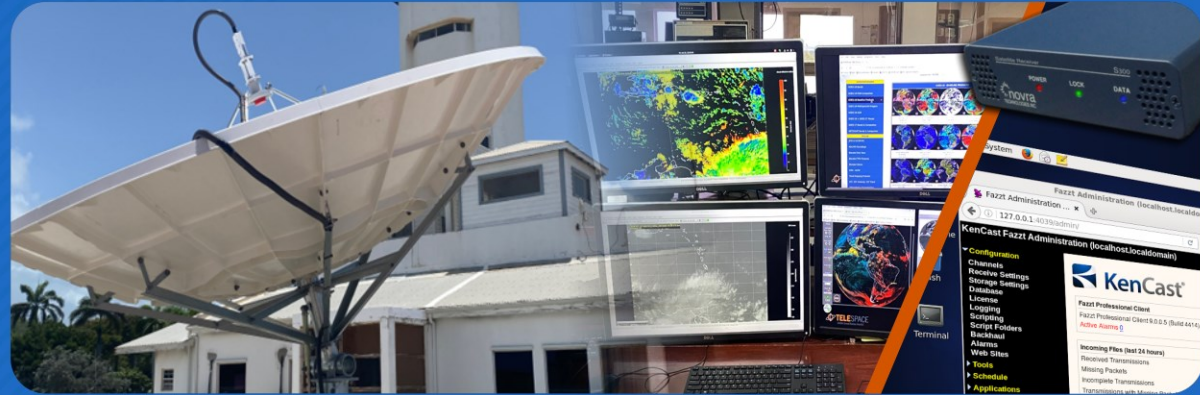


GEONETCast-Americas Webinar in Preparation for CARIBE WAVE 26

March 12th 2026 18:30 UTC

GNC-A Overview, Operation and Product Suite



Diego Souza

diego.souza@inpe.br

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

MINISTÉRIO DA
CIÊNCIA, TECNOLOGIA
E INOVAÇÕES





Hi! I'm Diego Souza (INPE - Brazil)



Diego Souza

diego.souza@inpe.br



Integration and Testing Laboratory - INPE



Meteorological Satellites Division - INPE



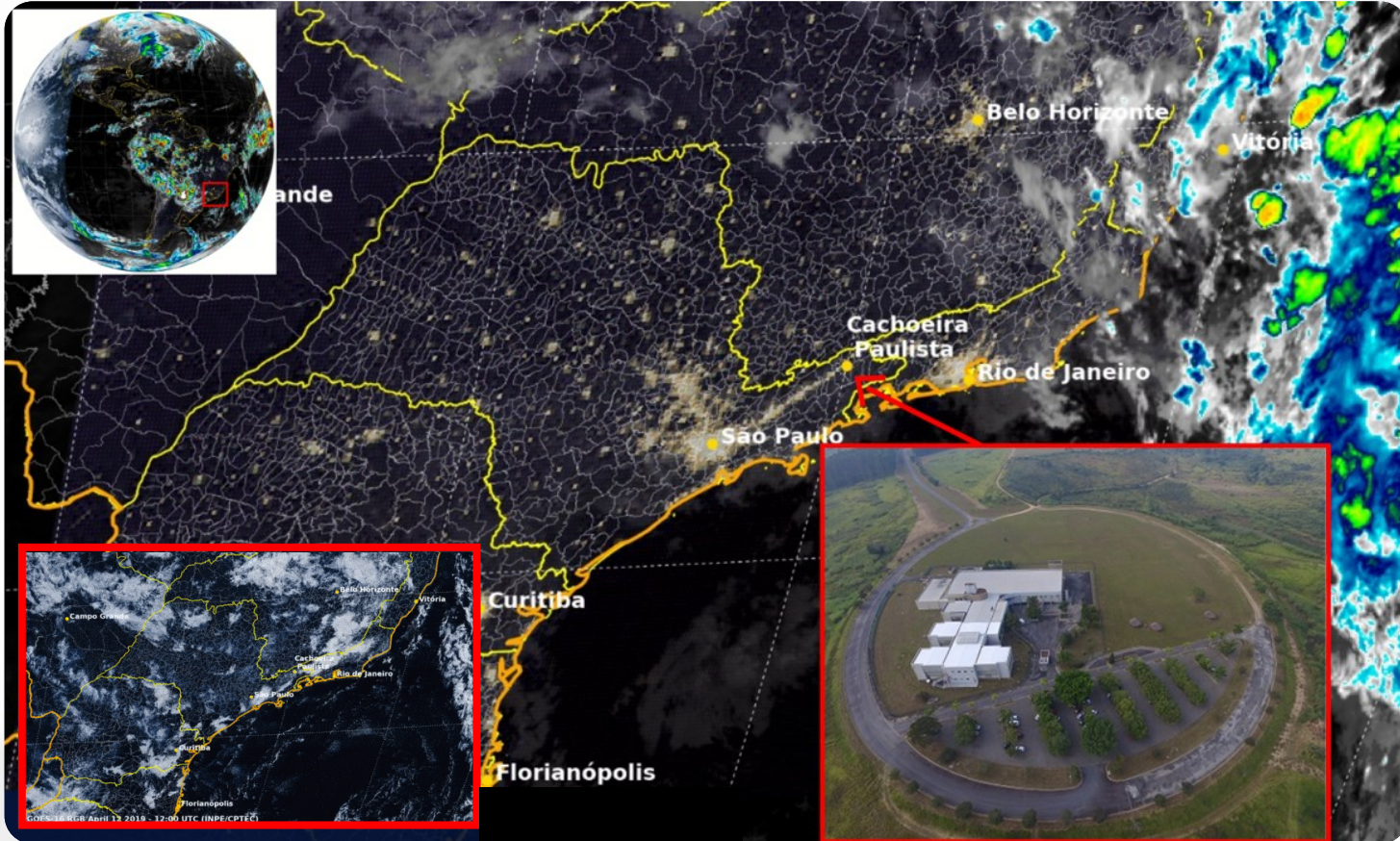
10th Meeting of the VLab Management Group



5th Meeting of the WMO Satellite Data Requirements Group



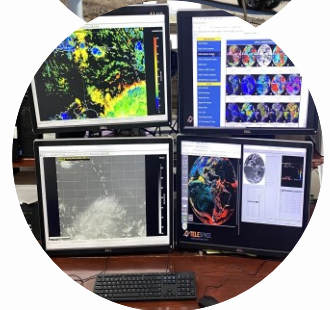
INPE - DISSM: Meteorological Satellites Division





Presentation Outline

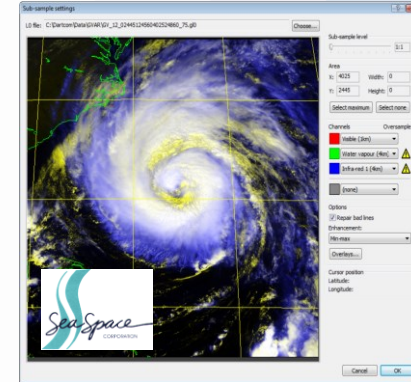
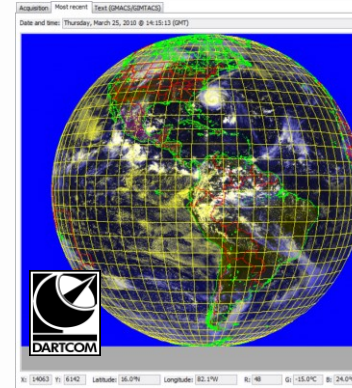
- **GEONETCast-Americas (GNC-A) Overview**
 - Architecture, Hardware and Community
- **Ingestion Directory and Product Suite**
 - Demonstration (Online Ingestion Directory)
 - **Tsunami Products**
 - Demonstration (Online Interface with Products)
- **Maintenance Aspects**
- **Disaster Capabilities**
 - No internet required, power outages, portable station and survival wind speed
- **Documentation and Support**
 - Demonstration (Exploring the Documents)



Before GOES-R became a reality, receiving satellite data was more complex. "Turnkey" stations and proprietary software were some of the limited solutions available and the file format was not as straightforward to process.



GVAR Antennas receiving
GOES-13 in 2013
(DISSM/CGCT/INPE - Brazil)



GOES-N Series



Today: Satellite Data Reception Mechanisms

Direct Readout / Rebroadcast

GRB - GOES REBROADCAST



HRIT / EMWIN



HIGH RATE DATA - HRD



GEONETCAST-AMERICAS (GNC-A)



Cloud Services / Internet

NOAA Open Data Dissemination



Google Cloud



unidata IDD



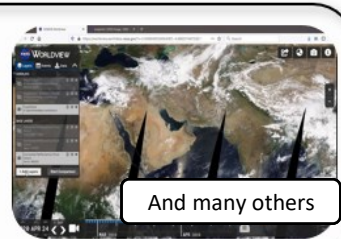
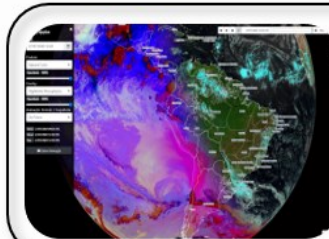
EUMETSAT Data Access Client (EUMDAC)

Among others...

Archive



Webpages

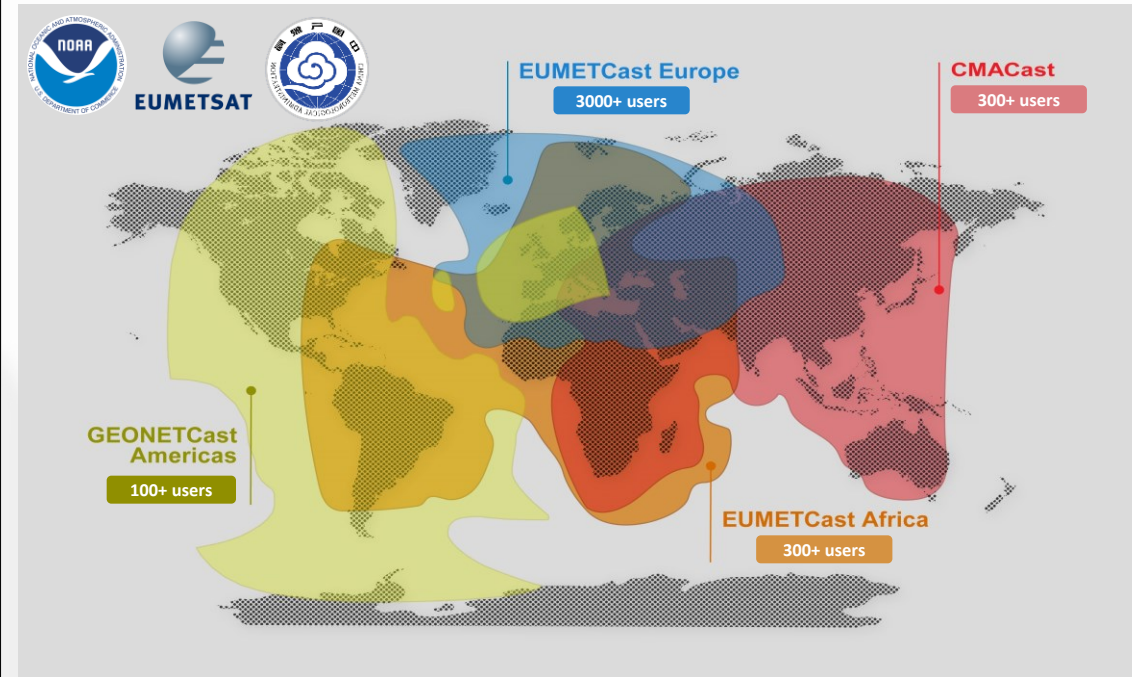


And many others



The GEONETCast Global System

- GEONETCast** is a low-cost global environmental information delivery system that transmits satellite and in-situ data, products, and services to users through commercial TV satellites, using multi-cast, access-controlled broadband capability. **GEONETCast** it is a distribution system for environmental satellite data and products using commercial TV satellites.





The GEONETCast-Americas (GNC-A) Satellite Broadcast

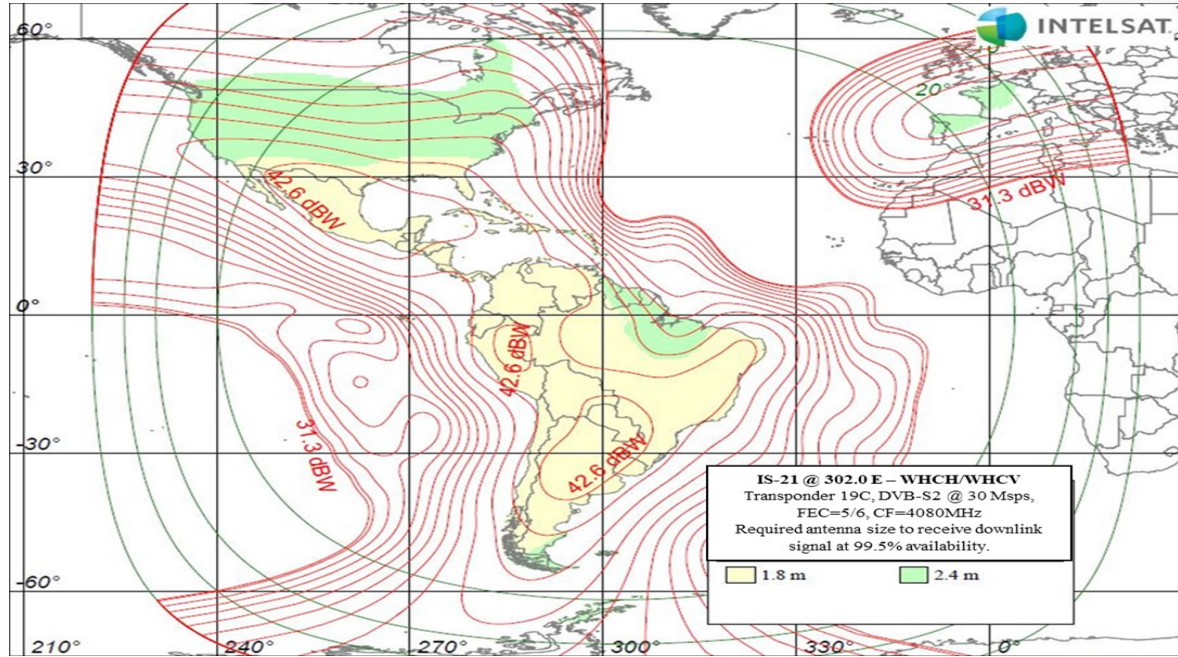


GNC-A

GEONETCast-Americas

INTELSAT-21 GEO Satellite @ 58° West	"19C" Transponder
Center Frequency	4080 MHz
Data Rate	20 Mbps
Modulation	8PSK
Polarization	Linear - Vertical
Symbol Rate	30000 Msps
Forward Error Correction	5/6
Data Format	DVB-S2
Packet Identifier	4201
Effective Isotropic Radiated Power Coverage	> 31.3 dBW
Peak G/T (antenna gain-to-noise temperature)	Up to 2.5 dB/K
Datacasting Client Software (Required)	KenCast FAZZT Professional Client

GNC-A is an "Americas" focused C-Band broadcast with a regional footprint that encompasses most of North / South America in exception of Northern Canada and Alaska



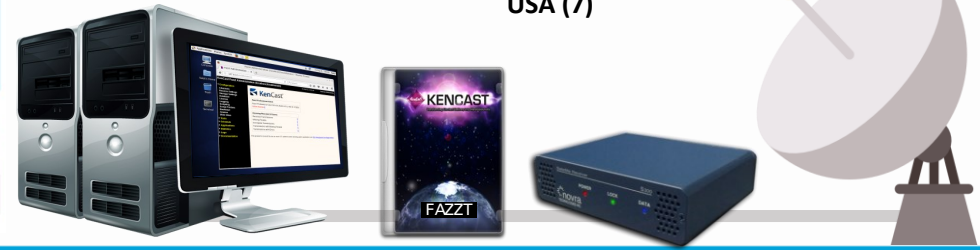


GEONETCast-Americas User Community

Known GNC-A Stations

<https://geonetcast.wordpress.com/stations-gallery/>

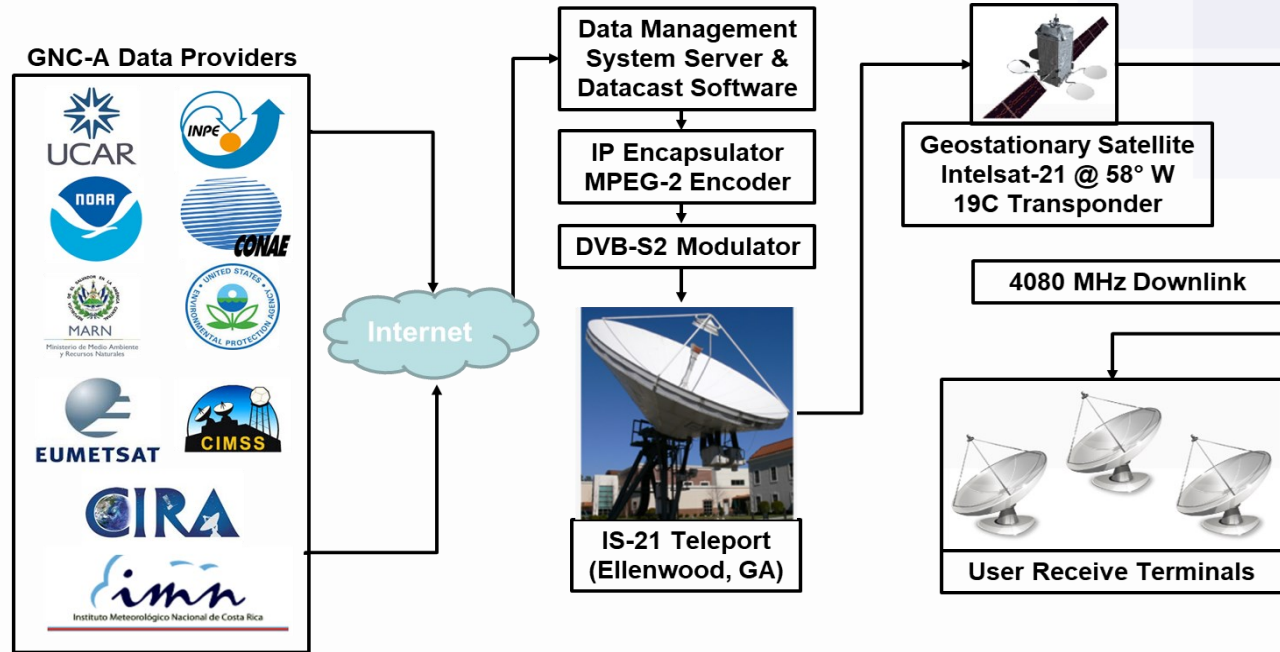
- Antigua and Barbuda (1)
- Argentina (3)
- Barbados (1)
- Brazil (35)
- Chile (2)
- Colombia (6)
- Costa Rica (3)
- Cuba (1)
- Dominica (1)
- Ecuador (2)
- El Salvador (5)
- France (1)
- Grenada (1)
- Guatemala (1)
- Honduras (1)
- Haiti (1)
- Mexico (11)
- Panama (2)
- Paraguay (2)
- Peru (6)
- Dominican Republic (1)
- St. Kitts and Nevis (1)
- St. Vincent & Grenadines (1)
- Uruguay (3)
- USA (7)





GNC-A System Ground Architecture

- Ground architecture allows for **external data providers** to supply data to the broadcast.
- **No cap or limit** to who can supply data to the broadcast (only bandwidth limitations)
- GNC-A currently has **12 data providers**





Scalable Satellite Data Rate

GEONETCast-Americas Bandwidth

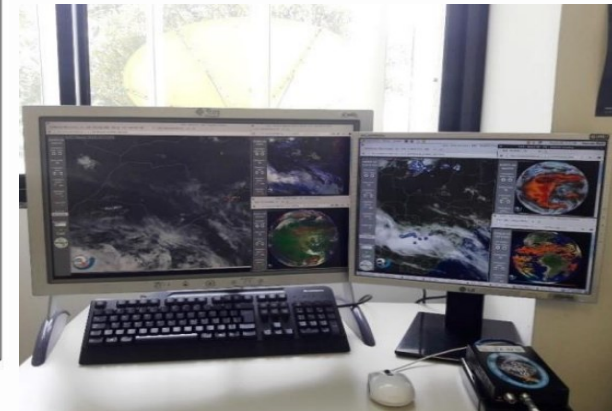
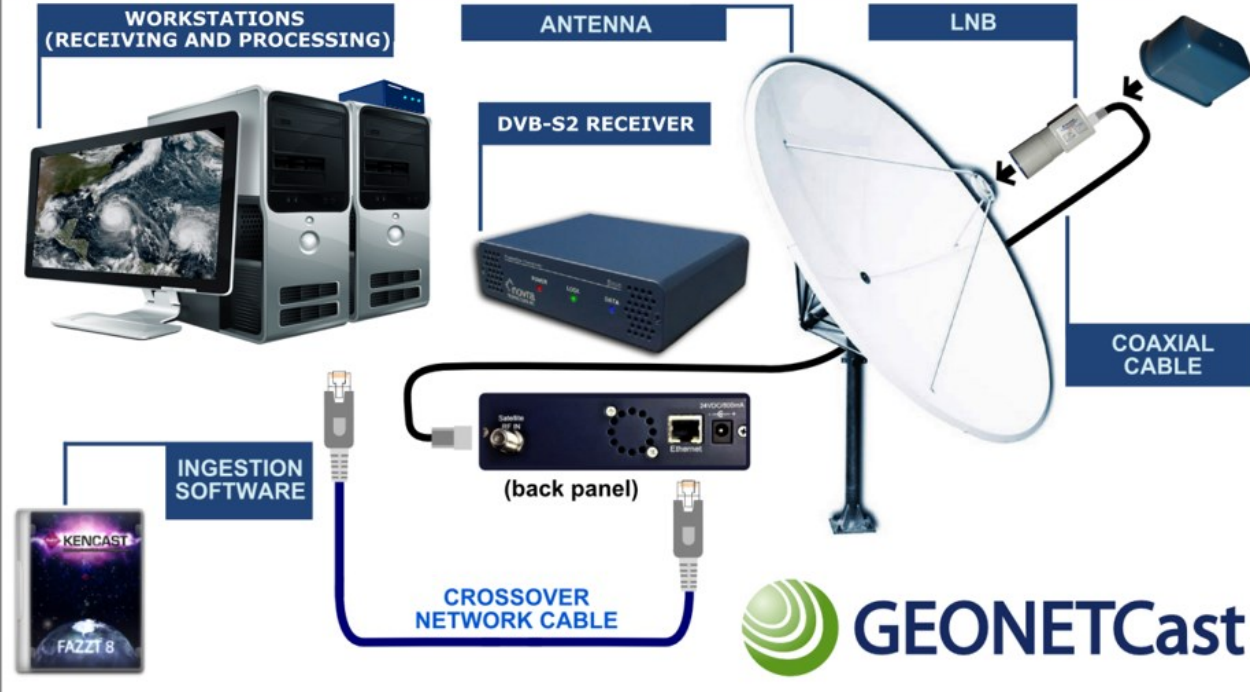
2013	2014	2015	2016	2017	2018	2019	2020
2.0 Mbps	2.0 Mbps	2.0 Mbps	6.7 Mbps	12.0 Mbps	12.0 Mbps	12.0 Mbps	20.0 Mbps
21 GB Day	21 GB Day	21 GB Day	72 GB Day	125 GB Day	129 GB Day	129 GB Day	134 GB Day

- The GNC-A broadcast has increased its data rate **three times** over the past decade to accommodate both the **JPSS** and **GOES-R satellite missions**.
- Commercial satellite transponders have the capability to be scalable if **more data** is needed or the need for **better performance**.



GNC-A Station Reception Hardware

BASIC COMPONENTS OF A GNC-A STATION





GNC-A Station Components

Commercial Rebroadcast Satellite

INTELSAT-21

2. LNB / Feed

Amplifies the received signal and then down-converts frequencies to frequencies that are more manageable via common coaxial cable and electronics in the DVB-S2 receiver

5. Processing and Visualization

Data from GNC-A providers may be processed and visualized using proprietary and / or open source solutions

4080 MHz (C-Band)

1070 MHz (L-Band)



1. Antenna

Receives the INTELSAT-21 (IS-21) signal and projects it on the LNB.

3. DVB-S2 Receiver

Converts the signal from the LNB to data that can be managed by a computer

4. FAZZT Professional Client

Un-encapsulates and organizes the received data (in the original format, as shared by GNC-A Data Providers)

UPS (uninterruptible power supply)

Allows the station to keep running for a period of time when incoming power is interrupted



A Real GNC-A Station: St. Kitts (2023)

5. Processing and Visualization

Data from GNC-A providers may be processed and visualized using proprietary and / or open source solutions

4. FAZZT Professional Client

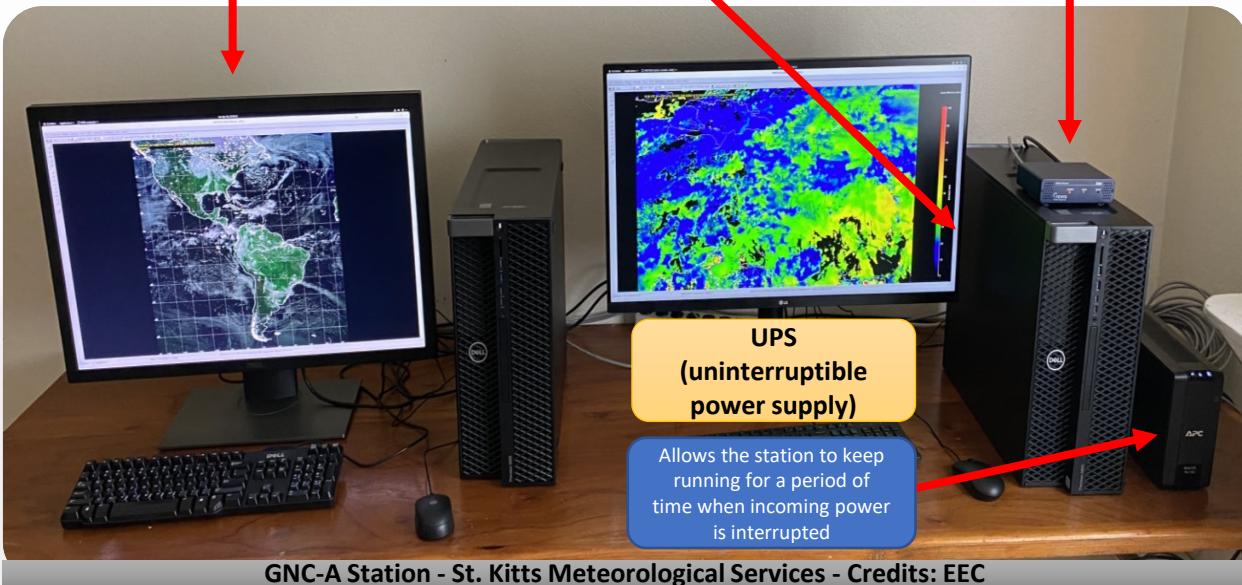
Un-encapsulates and organizes the received data (in the original format, as shared by GNC-A Data Providers)

3. DVB-S2 Receiver

Converts the signal from the LNB to data that can be managed by a computer

2. LNB / Feed

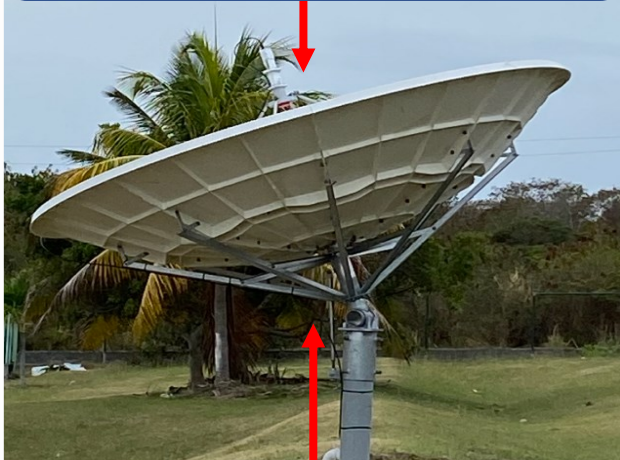
Amplifies the received signal and then down-converts frequencies to frequencies that are more manageable via common coaxial cable and electronics in the DVB-S2 receiver



UPS
(uninterruptible power supply)

Allows the station to keep running for a period of time when incoming power is interrupted

GNC-A Station - St. Kitts Meteorological Services - Credits: EEC



1. Antenna

Receives the INTELSAT-21 (IS-21) signal and projects it on the LNB.



Different Equipment Can Be Used For GNC-A

Different antennas and LNBS

Different DVB-S2 receivers

Different workstations / PCs

Single Client



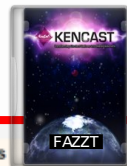
The components for an entire receiving station can be purchased for ~ \$15,000.

A Turn-Key system can be purchased by ~ \$50,000



When Everything is Ready, a Lot of Files are Received

- Products are separated by **broadcast channels**
- Users can **activate** channels they wish to receive and **deactivate** the channels they wish not to receive
- **FAZZT** software interface is very user friendly
- Products are still in their **native format** and remain unchanged



Ingestion Software Configuration Interface

The screenshot shows the 'Channels' section of the Ingestion Software Configuration Interface. It features a 'Receive Channels' table with columns for Channel, Type, and actions (Delete, Reload, Disable). A red arrow points from the 'Data Providers' section of the diagram to the 'Receive Channels' table.

Channel	Type	Actions
1_Main	IP Receive (Multicast)	Delete Reload Disable
100_INPE	IP Receive (Multicast)	Delete Reload Disable
200_EUMETSAT	IP Receive (Multicast)	Delete Reload Disable
300_Info & Admin	IP Receive (Multicast)	Delete Reload Disable
400_Trainco	IP Receive (Multicast)	Delete Reload Disable
500_CONAE	IP Receive (Multicast)	Delete Reload Disable
600_ALERT	IP Receive (Multicast)	Delete Reload Disable
700_NOAA-NESDIS	IP Receive (Multicast)	Delete Reload Disable
800_WMO-WMC Washington	IP Receive (Multicast)	Delete Reload Disable
900_INPE-CostaRica	IP Receive (Multicast)	Delete Reload Disable
1000_NADM	IP Receive (Multicast)	Delete Reload Disable
1100_USERA	IP Receive (Multicast)	Delete Reload Disable
1200_InfE-Charter	IP Receive (Multicast)	Delete Reload Disable
1300_InfE-Charter-INPE	IP Receive (Multicast)	Delete Reload Disable
1400_VLab_Trainco	IP Receive (Multicast)	Delete Reload Disable
1500_TEST	IP Receive (Multicast)	Delete Reload Disable
1600_MARN-El Salvador	IP Receive (Multicast)	Delete Reload Disable
1700_ISCS-ANLZ-CLIMATE	IP Receive (Multicast)	Delete Enable
1800_MSG-Odearee/IMG-3h	IP Receive (Multicast)	Delete Reload Disable
1900_MSG-Odearee/MetProducts	IP Receive (Multicast)	Delete Reload Disable

The diagram illustrates the data flow: Data Providers and Other GEONETCast Systems connect to the Internet, which then connects to a satellite dish. Web-Enabled NOAA Access also connects to the Internet. A red dashed box highlights the 'Data Providers' and 'Other GEONETCast Systems' sections.

Ingestion Directory

- Name
- EUMETSAT
 - GOES-R-RGB-Composites
 - ISCS-GRIB2
 - ISCS-SURFACE
 - ISCS-UA
 - ISCS-FCAST
 - INPE
 - ISCS-WARN
 - ISCS-BUFR
 - ISCS-RADAR
 - GOES-R-GLM-Products
 - USEPA
 - ISCS-PIC
 - ISCS-ADMIN
 - RANET
 - NOAA-NESDIS
 - ISCS-SAT
 - ISCS-ANLZ-CLIMATE
 - IMN-CostaRica
 - CONAE
 - ISCS-GRIB1
 - MARN-El Salvador
 - NADM
 - CIMSS



Let's Explore the GNC-A Ingestion Directory

Index of /geonetcast

Not secure | geonetcast.ssec.wisc.edu/geonetcast/

Index of /geonetcast

Name	Last modified	Size	Description
Parent Directory		-	
CIMSS/	2021-12-22 14:25	-	
CIRA/	2023-03-01 19:04	-	
CONAE/	2021-05-23 06:55	-	
EUMETSAT/	2023-03-01 20:39	-	
GOES-R-CMI-Imagery/	2021-09-14 12:45	-	
GOES-R-DCS/	2023-03-01 20:42	-	
GOES-R-GLM-Products/	2023-03-01 20:41	-	
GOES-R-Level-2-Produ.>	2021-02-15 23:19	-	
GOES-R-RGB-Composites/	2021-08-31 23:57	-	
GOES-S-CMI-Imagery/	2021-02-15 22:33	-	
GOES-T-CMI-Imagery/	2022-06-03 13:15	-	
IMN-CostaRica/	2023-03-01 14:03	-	
INPE/	2023-03-01 19:03	-	
ISCS-ADMIN/	2023-03-01 20:33	-	
ISCS-ANLZ-CLIMATE/	2023-03-01 20:38	-	
ISCS-BUFR/	2023-03-01 19:36	-	
ISCS-FCAST/	2023-03-01 20:41	-	
ISCS-GRIB1/	2023-03-01 16:58	-	
ISCS-GRIB2/	2023-03-01 16:48	-	
ISCS-PIC/	2023-03-01 20:39	-	
ISCS-RADAR/	2023-03-01 20:40	-	
ISCS-SAT/	2023-03-01 19:07	-	
ISCS-SURFACE/	2023-03-01 20:41	-	
ISCS-UA/	2023-03-01 20:39	-	
ISCS-WARN/	2023-03-01 20:41	-	
Info & Admin/	2022-04-08 10:05	-	
Info&Admin/	2023-03-01 11:05	-	
JPSS/	2021-02-15 22:33	-	
MARN-El Salvador/	2023-03-01 18:29	-	
MSG-0degree/	2021-02-16 00:03	-	
NADM/	2023-02-25 06:03	-	
NOAA-NESDIS/	2023-03-01 17:17	-	
RANET/	2023-03-01 20:31	-	
Test/	2023-03-01 17:04	-	
Training/	2023-02-26 12:28	-	
USEPA/	2023-03-01 19:45	-	

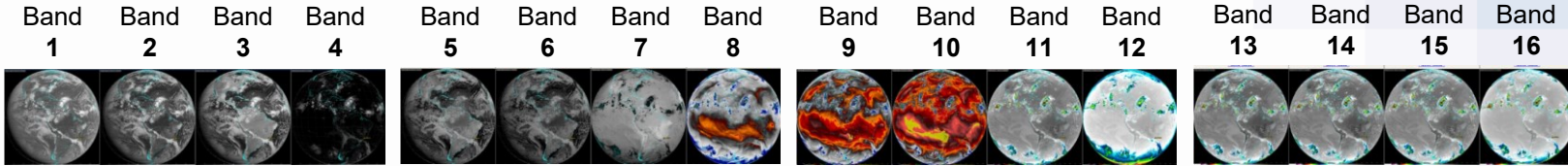
DEMONSTRATION

<http://geonetcast.ssec.wisc.edu/geonetcast/>



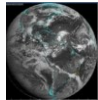
GOES ABI Level II Products on GNC-A

GOES-19 "Cloud and Moisture Imagery": Full Disk

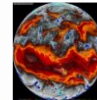


GOES-18 "Cloud and Moisture Imagery": Full Disk

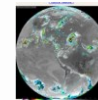
Band 2



Band 9



Band 13



Other GOES-19 Level II Products

Aerosol Detection and Optical Depth



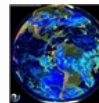
Clear Sky Masks



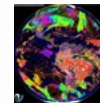
Cloud Optical Depth



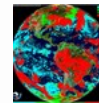
Cloud Particle Size



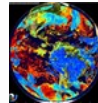
Cloud Top Height



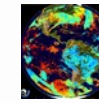
Cloud Top Phase



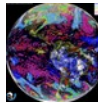
Cloud Top Pressure



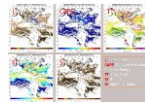
Cloud Top Temperature



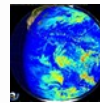
Derived Winds



Derived Stability Indices



Reflective SW Radiation



Fire / Hot Spot Characterization



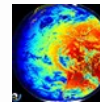
GLM



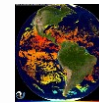
Land Surface Temperature



Downward SW Radiation



Sea Surface Temperature



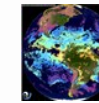
Snow Cover



Rainfall Rate / QPE



Total Precip. Water



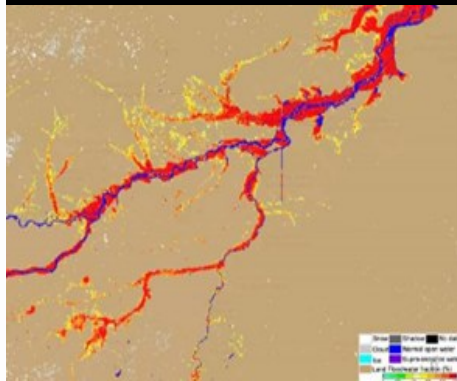
For more product detail please visit

<https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



JPSS Products on GNC-A

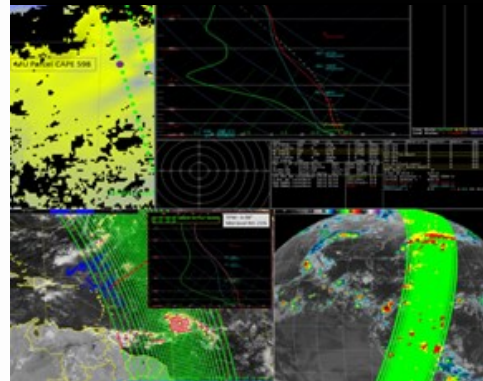
VIIRS / ABI Flood Mapping



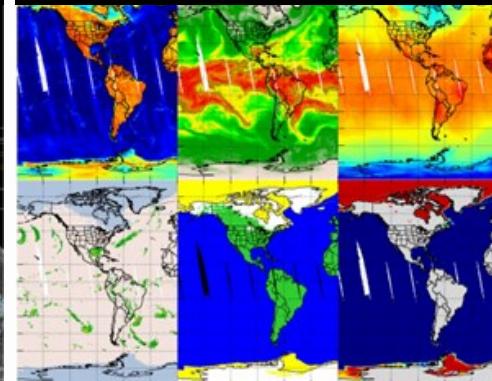
VIIRS Active Fires



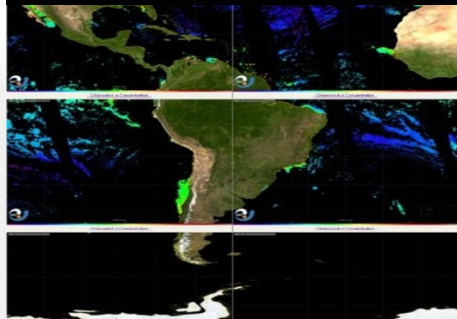
NUCAPS Soundings



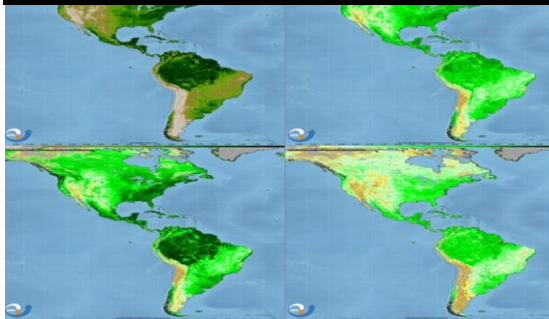
MiRS System



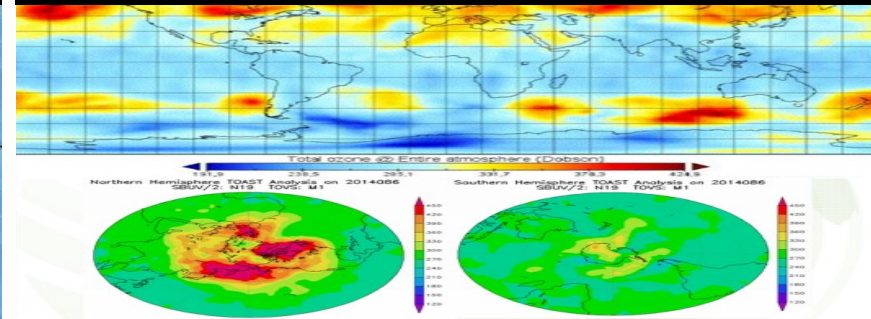
VIIRS Ocean Color



VIIRS Vegetative Fraction and Indices

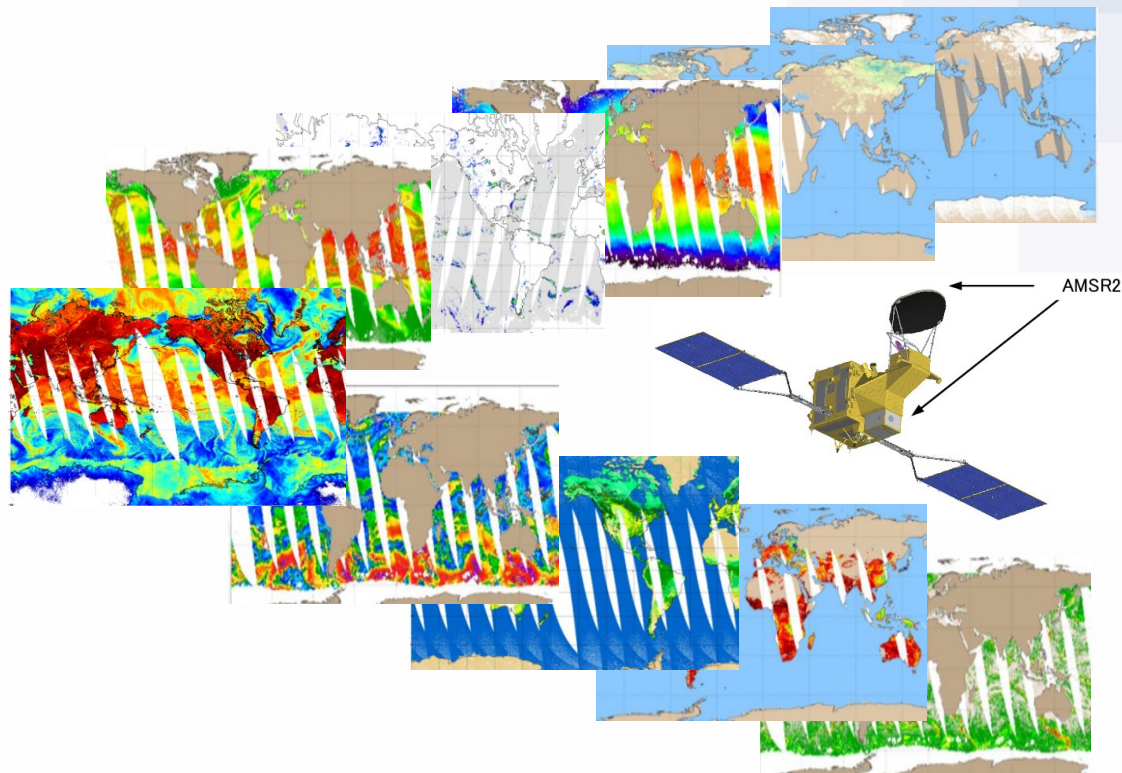


Ozone Products (TOAST)



For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>

- **AMSR2** Brightness Temps
- **Precipitation** (Rain Rate, Convective and Probability)
- **Soil Moisture**
- **Land Cover Type**
- **Snow Cover**, Depth, Water Equivalent
- **Ocean Products** (SST, Ocean Wind speed, Ocean TPW and Ocean Cloud Liquid Water)
- **Arctic Sea Ice Concentration**

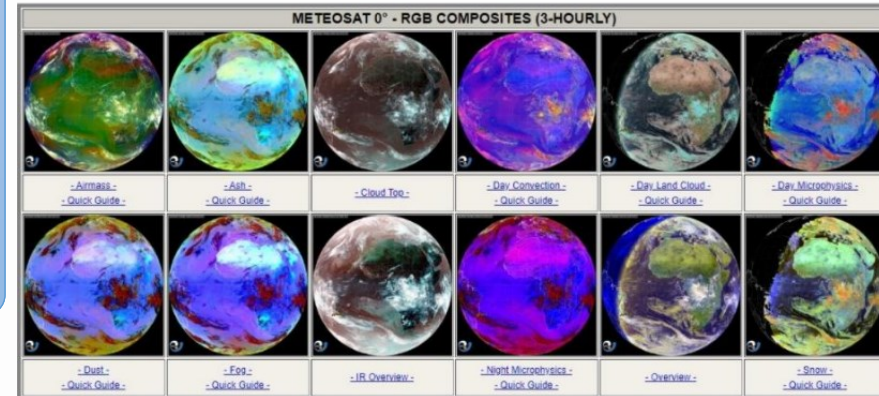
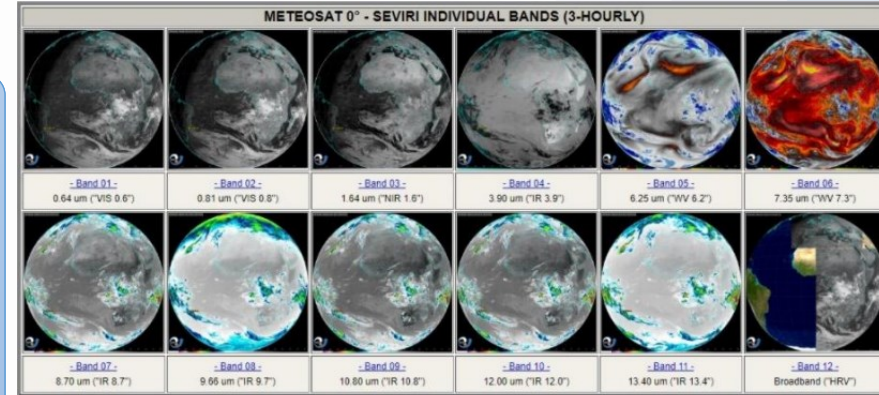


For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



EUMETSAT Products on GNC-A

- **SEVIRI Full Disk Imagery**
- **ASCAT Coastal Winds 12.5km**
- **ASCAT Coastal Winds 25km**
- **Medium/Low Resolution METOP Sea Ice Drift**
- **Medium/Low Resolution METOP Sea Ice Concentration**
- **Global Sea Ice Emissivity**
- **METOP SST IASI**
- **METEOSAT 0° SST**
- **Active Fire Monitoring**
- **Atmospheric Motion Vectors**
- **Cloud Mask**
- **Cloud Top Height**
- **Global Instability Index**
- **Accumulated Precipitation**
- **METOP/NOAA-19 ATOVS Sounder Products**

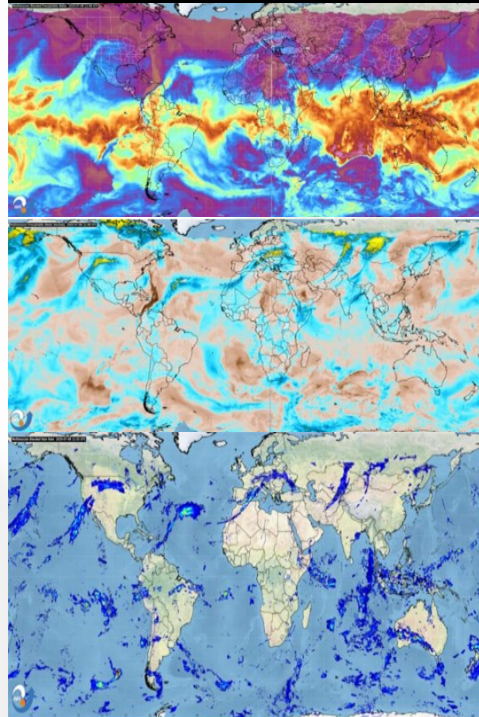


For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>

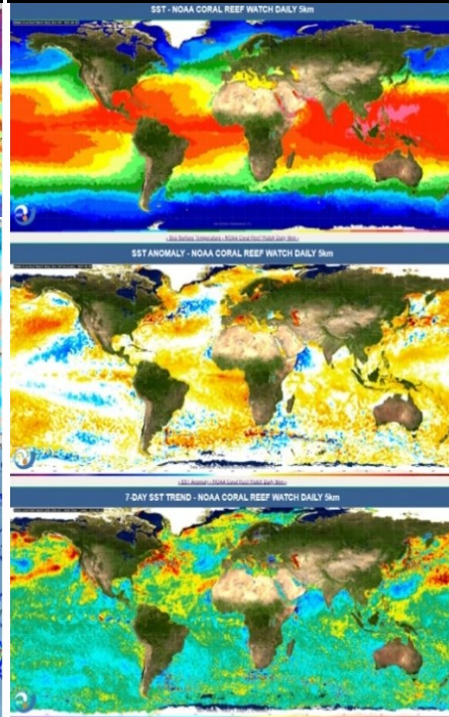


Multi-Satellite Blended Products on GNC-A

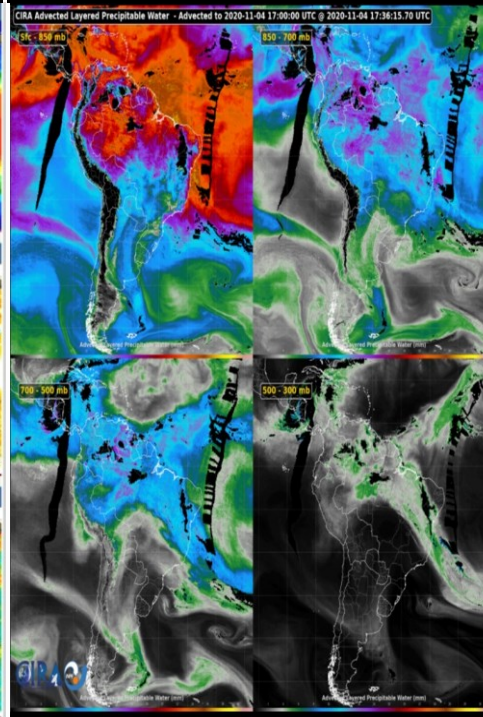
Blended TPW, TPW Anomaly and Rain Rate



Blended SST, 7-Day SST Average and SST Anomaly



CIRA Advected Layered Precipitable Water



Monitoring of Vegetation Fires



For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>

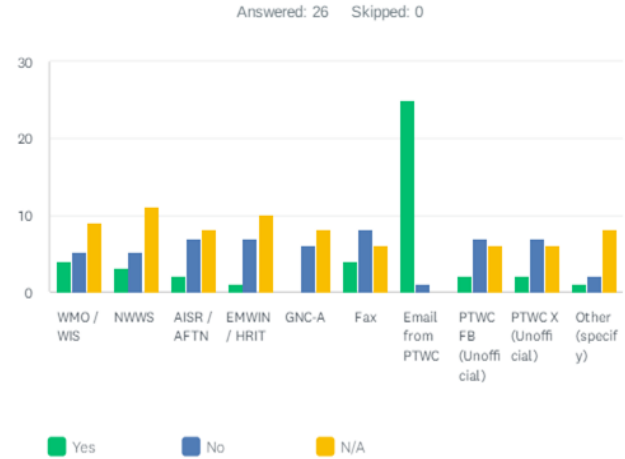


NWS ISCS Products on GNC-A

<https://www.weather.gov/iscs/>

- ISCS Surface:** International and WFO METARS and surface observations
- ISCS Forecast:** Forecast summaries/TAF's
- ISCS Warning: Watches/Warnings/Advisories**
- ISCS Climate:** Weather summaries & climate
- ISCS BUFR:** BUFR atmospheric/oceanic products
- ISCS RADAR:** Radar PNG/GIF products
- ISCS Upper Air:** Upper Air products
- ISCS GRIB:** GRIB GFS forecast products
- ISCS SAT:** Multiple graphic format products
- ISCS PIC:** Multiple graphic format products

Q5 The PTWC issued the CARIBE WAVE 24 Dummy Message by several methods. Please check all methods through which the message was received by the TWFP/NTWC.



From past Webinars: “Note the lack of TWFP/NTWCs using GNC-A - it is important to verify with the Met Services that they are using these systems for the receipt of tsunami messages.”

For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



NOAA Tsunami Products on GNC-A

Region	WMO Header	NWS AWIPS ID	TWC	Explanations
Alaska, British Columbia, U.S. West Coast	Example: WEPA41 PAAQ Example: WEPA41 PAAQ Example: WEPA41 PAAQ	TSUWCA	NTWC	Segmented Tsunami Warnings, Watches, and Advisories
	Example: WEAK51 PAAQ Example: WEAK51 PAAQ Example: WEAK51 PAAQ	TSUAK1	NTWC	Tsunami Warnings, Watches, and Advisories
	Example: WEAK61 PAAQ Example: WEAK61 PAAQ Example: WEAK61 PAAQ	TSUSPN	NTWC	Spanish Tsunami Warnings, Watches, and Advisories
	Example: WEAQ53 PAAQ	TIBAK1	NTWC	Tsunami Information Statements
	Example: WEAQ63 PAAQ	TIBSPN	NTWC	Spanish Tsunami Information Statements
	Hawaii	Example: WEHW40 PHEB	TSUHWX	PTWC
Example: WEHW42 PHEB		TIBHWX	PTWC	Tsunami Information Statements
American Samoa	Example: WEZS40 PHEB	TSUPPG	PTWC	Tsunami Warnings, Watches, and Advisories
	Example: WEZS42 PHEB	TIBPPG	PTWC	Tsunami Information Statements
Guam, CNMI	Example: WEGM40 PHEB	TSUGUM	PTWC	Tsunami Warnings, Watches, and Advisories
	Example: WEGM42 PHEB	TIBGUM	PTWC	Tsunami Information Statements
Non U.S. Pacific	Example: WEPA40 PHEB	TSUPAC	PTWC	Tsunami Threat Messages
	Example: WEPA42 PHEB	TIBPAC	PTWC	Tsunami Information Statements

U.S. Atlantic, Gulf of America, Canada	Example: WEXX20 PAAQ Example: WEXX20 PAAQ Example: WEXX20 PAAQ	TSUAT1	NTWC	Segmented Tsunami Warnings, Watches, and Advisories
	Example: WEXX30 PAAQ Example: WEXX30 PAAQ Example: WEXX30 PAAQ	TSUATE	NTWC	Tsunami Warnings, Watches, and Advisories
	Example: WEXX40 PAAQ Example: WEXX40 PAAQ Example: WEXX40 PAAQ	TSUSPA	NTWC	Spanish Tsunami Warnings, Watches, and Advisories
	Example: WEXX32 PAAQ	TIBATE	NTWC	Tsunami Information Statements
	Example: WEXX42 PAAQ	TIBSPA	NTWC	Spanish Tsunami Information Statements
Puerto Rico, Virgin Islands	Example: WECA40 PHEB Example: WECA40 PHEB Example: WECA40 PHEB	TSUCAR	PTWC	Tsunami Warnings, Watches, and Advisories
	Example: WECA50 PHEB Example: WECA50 PHEB Example: WECA50 PHEB	TSUSP1	PTWC	Spanish Tsunami Warnings, Watches, and Advisories
	Example: WECA60 PHEB Example: WECA60 PHEB Example: WECA60 PHEB	TSUCA1	PTWC	Segmented Tsunami Warnings, Watches, and Advisories
	Example: WECA42 PHEB	TIBCAR	PTWC	Tsunami Information Statements
	Example: WECA52 PHEB	TIBSP1	PTWC	Spanish Tsunami Information Statements
Non U.S. Caribbean	Example: WECA41 PHEB	TSUCAX	PTWC	Tsunami Threat Messages
	Example: WECA43 PHEB	TIBCAX	PTWC	Tsunami Information Statements
Test	Example: NTXX98 PHEB	TSTMSG	PTWC	Test Messages
	Example: NTXX98 PAAQ	TSTMSG	NTWC	Test Messages

T1T2:

- **SE** Surface data - Seismic data
- **NW** Notices - Warning related and/or cancellation
- **WA** Warnings - Airmet
- **WC** Warnings - Tropical cyclone (SIGMET)
- **WE** Warnings - Tsunami
- **WF** warnings - Tornado
- **WG** Warnings - Hydrological/river flood
- **WH** Warnings - Marine/coastal flood
- **WO** Warnings - Other
- **WR** Warnings - Flash flood
- **WS** Warnings - SIGMET
- **WT** Warnings - Tropical cyclone (typhoon/hurricane)
- **WU** Warnings - Severe thunderstorm
- **WV** Warnings - Volcanic ash clouds (SIGMET)
- **WW** Warnings - Warnings & weather summary

For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



NOAA Tsunami Products on GNC-A

Tsunami Product Codes - WMO and AWIPS (effective April 2017)				
WMO ID	NWW PIL	AWIPS ID	Message Explanation	
WEPA41 PAAQ	ANCTSUWCA	TSUWCA	Segmented Tsunami Warning/Watch/Advisory	West Coast/BC/Alaska
WEAK51 PAAQ	ANCTSUA1	TSUA1	Tsunami Warning/Watch/Advisory	
WEAK61 PAAQ	ANCTSUSPN	TSUSPN	Spanish Tsunami Warning/Watch/Advisory	
WEAK53 PAAQ	ANCTIBAK1	TIBAK1	Tsunami Information Statement	
WEAK63 PAAQ	ANCTIBSPN	TIBSPN	Spanish Tsunami Information Statement	
WEXX20 PAAQ	ANCTSUAT1	TSUAT1	Segmented Tsunami Warning/Watch/Advisory	
WEXX30 PAAQ	ANCTSUATE	TSUATE	Tsunami Warning/Watch/Advisory	
WEXX40 PAAQ	ANCTSUSPA	TSUSPA	Spanish Tsunami Warning/Watch/Advisory	
WEXX32 PAAQ	ANCTIBATE	TIBATE	Tsunami Information Statement	
WEXX42 PAAQ	ANCTIBSPA	TIBSPA	Spanish Tsunami Information Statement	
NTXX98 PAAQ	ANCTSTMSG	TSTMSG	Test Message	Test

WMO ID	NWW PIL	AWIPS ID	Message Explanation	
WEPA40 PHEB	HFOTSUPAC	TSUPAC	Tsunami Threat Message	Pacific
WEPA42 PHEB	HFOTIBPAC	TIBPAC	Tsunami Information Statement	
WEHW40 PHEB	HFOTSUHWX	TSUHWX	Tsunami Warning/Watch/Advisory	Hawaii
WEHW42 PHEB	HFOTIBHWX	TIBHWX	Tsunami Information Statement	
WEZS40 PHEB	HFOTSUPPG	TSUPPG	Tsunami Warning/Watch/Advisory	American Samoa
WEZS42 PHEB	HFOTIBPPG	TIBPPG	Tsunami Information Statement	
WEGM40 PHEB	HFOTSUGUM	TSUGUM	Tsunami Warning/Watch/Advisory	Guam / CNMI
WEGM42 PHEB	HFOTIBGUM	TIBGUM	Tsunami Information Statement	
WECA41 PHEB	HFOTSUCAX	TSUCAX	Tsunami Threat Message	Carib.
WECA43 PHEB	HFOTIBCA1	TIBCA1	Tsunami Information Statement	
WECA40 PHEB	HFOTSUCAR	TSUCAR	Tsunami Warning/Watch/Advisory	PR/VI
WECA50 PHEB	HFOTSUSP1	TSUSP1	Spanish Tsunami Warning/Watch/Advisory	
WECA60 PHEB	HFOTSUCA1	TSUCA1	Segmented Tsunami Warning/Watch/Advisory	
WECA42 PHEB	HFOTIBCAR	TIBCAR	Tsunami Information Statement	
WECA52 PHEB	HFOTIBSP1	TIBSP1	Spanish Tsunami Information Statement	
NTXX98 PHEB	HFOTSTMSG	TSTMSG	Test Message	

For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



Where to Find Tsunami Warnings on GNC-A

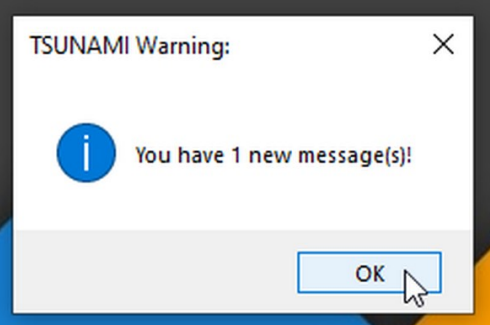
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Name	Last modified
Parent Directory	
CIMSS/	2021-12-22 14:25
CIRA/	2025-03-06 12:17
CONAE/	2021-05-23 06:55
EUMETSAT/	2025-03-06 13:19
GOES-R-CMI-Imagery/	2023-09-08 01:44
GOES-R-DCS/	2025-03-06 13:14
GOES-R-GLM-Products/	2025-03-06 13:14
GOES-R-Level-2-Produ...	2021-02-17 23:19
GOES-R-RGB-Composites/	2021-08-11 23:57
GOES-S-CMI-Imagery/	2021-02-15 22:33
GOES-T-CMI-Imagery/	2022-04-03 13:15
IMN-CostaRica/	2025-03-05 14:04
INPE/	2025-03-01 03:01
ISCS-ADMIN/	2025-03-06 13:06
ISCS-ANLZ-CLIMATE/	2025-03-06 13:01
ISCS-BUFR/	2025-03-06 13:07
ISCS-FCAST/	2025-03-06 13:14
ISCS-GRIB1/	2025-03-06 10:17
ISCS-GRIB2/	2025-03-06 10:45
ISCS-PIC/	2025-03-06 13:02
ISCS-RADAR/	2025-03-06 13:02
ISCS-SAT/	2025-03-06 13:07
ISCS-SURFACE/	2025-03-06 13:14
ISCS-TIA/	2025-03-06 13:10
ISCS-WARN/	2025-03-06 13:10
Info & Admin/	2022-04-08 10:05
Info&Admin/	2025-03-06 11:05
JPSS/	2021-02-15 22:33
MARN-EI Salvador/	2025-03-06 06:10
MSG-0degree/	2021-02-16 00:03
NADM/	2025-03-05 06:03
NOAA-NESDIS/	2025-03-06 09:14
RANET/	2025-03-06 12:30
Test/	2025-03-06 13:05
Training/	2025-03-02 12:16
USEPA/	2024-03-21 11:41

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T_WEAK53PAAQ12131_C.>	2025-02-21 21:33 1.2K
T_WEAK53PAAQ12131_C.>	2025-02-21 21:34 1.2K
T_WEAK53PAAQ250543_C.>	2025-02-25 05:45 1.2K
T_WEAK53PAAQ250543_C.>	2025-02-25 05:46 1.2K
T_WEAK63PAAQ031305_C.>	2025-03-03 13:06 1.4K
T_WEAK63PAAQ031305_C.>	2025-03-03 13:27 1.3K
T_WEAK63PAAQ062246_C.>	2025-03-06 22:48 1.4K
T_WEAK63PAAQ062246_C.>	2025-03-06 22:50 1.3K
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T_WECA52PHEB100244_C.>	2025-03-10 02:45 2.5K
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T_WEXX30PAAQ251730_C.>	2025-02-25 17:34 1.5K
T_WEXX30PAAQ251730_C.>	2025-02-25 17:38 1.5K
T_WEXX32PAAQ100239_C.>	2025-03-10 02:40 1.6K
T_WEXX32PAAQ100239_C.>	2025-03-10 02:42 1.5K

WMO ID	NWW PIL	AWIPS ID	Message Explanation	
WEPA40 PHEB	HFOTSUPAC	TSUPAC	Tsunami Threat Message	Pacific
WEPA42 PHEB	HFOTIBPAC	TIBPAC	Tsunami Information Statement	
WEHW40 PHEB	HFOTSUHWX	TSUHWX	Tsunami Warning/Watch/Advisory	Hawaii
WEHW42 PHEB	HFOTIBHWX	TIBHWX	Tsunami Information Statement	
WEZ540 PHEB	HFOTSUPPG	TSUPPG	Tsunami Warning/Watch/Advisory	American Samoa
WEZ542 PHEB	HFOTIBPPG	TIBPPG	Tsunami Information Statement	
WEGM40 PHEB	HFOTSUGUM	TSUGUM	Tsunami Warning/Watch/Advisory	Guam / CNMI
WEGM42 PHEB	HFOTIBGUM	TIBGUM	Tsunami Information Statement	
WECA41 PHEB	HFOTSUCAX	TSUCAX	Tsunami Threat Message	Carib.
WECA43 PHEB	HFOTIBCA	TIBCA	Tsunami Information Statement	
WECA40 PHEB	HFOTSUCAR	TSUCAR	Tsunami Warning/Watch/Advisory	PR/VI
WECA50 PHEB	HFOTSUSP1	TSUSP1	Spanish Tsunami Warning/Watch/Advisory	
WECA60 PHEB	HFOTSUCA1	TSUCA1	Seppented Tsunami Warning/Watch/Advisory	
WECA42 PHEB	HFOTIBCAR	TIBCAR	Tsunami Information Statement	
WECA52 PHEB	HFOTIBSP1	TIBSP1	Spanish Tsunami Information Statement	
NTXX98 PHEB	HFOTSTMSG	TSTMSG	Test Message	Test

Originated by PTWC



This is an example of how a programming language like Python can be used to monitor and filter incoming warnings, triggering specific tasks, such as activating an alarm like in this example (it could be an email relaying this message to other organizations, etc.)

For more product detail please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



Example Issued by PTWC

Originated by PTWC	WMO ID	NWW PIL	AWIPS ID	Message Explanation	
	WEPA40 PHEB	HFOTSUPAC	TSUPAC	Tsunami Threat Message	Pacific
	WEPA42 PHEB	HFOTIBPAC	TIBPAC	Tsunami Information Statement	
	WEHW40 PHEB	HFOTSUHWX	TSUHWX	Tsunami Warning/Watch/Advisory	Hawaii
	WEHW42 PHEB	HFOTIBHWX	TIBHWX	Tsunami Information Statement	
	WEZS40 PHEB	HFOTSUPPG	TSUPPG	Tsunami Warning/Watch/Advisory	American Samoa
	WEZS42 PHEB	HFOTIBPPG	TIBPPG	Tsunami Information Statement	
	WEGM40 PHEB	HFOTSUGUM	TSUGUM	Tsunami Warning/Watch/Advisory	Guam / CNMI
	WEGM42 PHEB	HFOTIBGUM	TIBGUM	Tsunami Information Statement	
	WECA41 PHEB	HFOTSUCAX	TSUCAX	Tsunami Threat Message	Carib.
	WECA43 PHEB	HFOTIBCAx	TIBCAx	Tsunami Information Statement	
	WECA40 PHEB	HFOTSUCAR	TSUCAR	Tsunami Warning/Watch/Advisory	PR/VI
	WECA50 PHEB	HFOTSUSP1	TSUSP1	Spanish Tsunami Warning/Watch/Advisory	
	WECA60 PHEB	HFOTSUCA1	TSUCA1	Seggented Tsunami Warning/Watch/Advisory	
WECA42 PHEB	HFOTIBCAR	TIBCAR	Tsunami Information Statement		
WECA52 PHEB	HFOTIBSP1	TIBSP1	Spanish Tsunami Information Statement		
NTXX98 PHEB	HFOTSTMSG	TSTMSG	Test Message	Test	

****000002224****
WECA41 PHEB 061530
TSUCAX

TEST...TSUNAMI DUMMY - COMMUNICATIONS TEST...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1530 UTC THU MAR 6 2025

THIS IS A TEST MESSAGE. THIS MESSAGE APPLIES ONLY TO COUNTRIES AND TERRITORIES WITHIN AND BORDERING THE CARIBBEAN SEA THAT PARTICIPATE IN THE TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS - THE CARIBE-EWS.

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST PTWC MONTHLY CARIBE-EWS COMMUNICATIONS TEST...

PLEASE NOTE - THE WEBSITE FOR PTWC MESSAGES IS NOW AT
TSUNAMI.GOV
THE FORMER WEBSITE HAS NOW BEEN RETIRED.
PLEASE UPDATE YOUR BOOKMARKS ACCORDINGLY.

THIS IS A TEST MESSAGE. THIS IS A SCHEDULED TEST OF THE COMMUNICATION METHODS USED TO DISSEMINATE TSUNAMI INFORMATION FROM THE PACIFIC TSUNAMI WARNING CENTER TO THE CARIBE-EWS TSUNAMI WARNING FOCAL POINTS AND NATIONAL TSUNAMI WARNING CENTERS.

THIS TEST IS CONDUCTED ON THE FIRST THURSDAY OF EACH MONTH AT 1530 UTC. THE MESSAGE IS SENT BY SEVERAL COMMUNICATIONS METHODS INCLUDING THE GLOBAL TELECOMMUNICATIONS SYSTEM OR GTS... THE AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK OR AFTN... BY EMAIL... AND BY TELEFAX.

THIS MESSAGE SHOULD ARRIVE BY ALL DESIGNATED METHODS WITHIN A FEW MINUTES OF ITS BEING DISSEMINATED. TSUNAMI WARNING FOCAL POINTS AND NATIONAL TSUNAMI WARNING CENTERS SHOULD CHECK THAT IT WAS RECEIVED BY ALL METHODS IN A TIMELY FASHION.

RESPONSE - IT IS ONLY NECESSARY TO RESPOND IF THE TEST WAS UNACCEPTABLY DELAYED OR NOT RECEIVED BY ONE OR MORE DESIGNATED COMMUNICATION METHODS. IN THAT CASE... PLEASE NOTIFY THE PACIFIC TSUNAMI WARNING CENTER BY EMAIL... INDICATING WHICH METHOD OR METHODS FAILED AND THE EMAIL OF A PERSON OR PERSONS TO CORRESPOND WITH REGARDING THE PROBLEM.

PACIFIC TSUNAMI WARNING CENTER EMAIL - COMMS@PTWC.NOAA.GOV

THE IOC... THE U.S. CARIBBEAN TSUNAMI WARNING PROGRAM... AND THE PACIFIC TSUNAMI WARNING CENTER WILL WORK TO RESOLVE ANY COMMUNICATIONS PROBLEMS THAT ARE IDENTIFIED.

THIS IS A TEST MESSAGE. THANK YOU FOR YOUR PARTICIPATION IN THIS TEST.

T_ **WECA41** PHEB061530_C_KWBC_20250306153035_20316596-6074-TSUCAX.txt



Product Visualization and Manipulation

SHOWCast

(Simple HTML Operational Wrapper for GEONETCast-Americas)

<https://github.com/diegormsouza/showcast>

- Developed by Brazilian GNC-A partner **National Institute for Space Research (INPE)** in November 2019 for GNC-A users
- **Open source** software visualization suite, available for download off INPE's GNC-A blog/ GitHub and the broadcast stream
- Allows users to visualize and animate over **120+ different GNC-A products** in **Windows** or **Linux OS**
- Provides / allows terrestrial internet cloud capability (AWS and UNIDATA) for contingencies and data gaps

The screenshot displays the SHOWCast web interface. At the top, it features the GNC-A SHOWCast logo and a navigation menu. The main content area is divided into several sections:

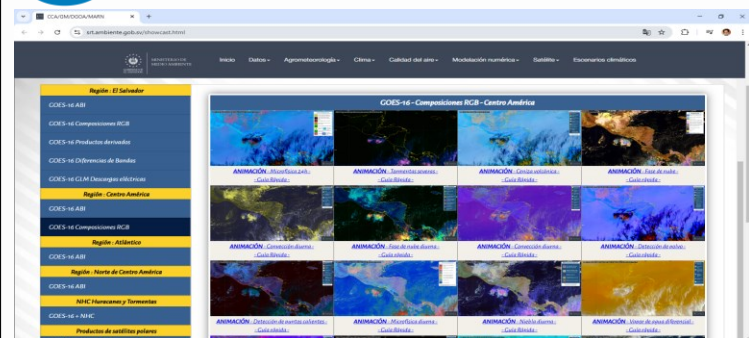
- GEOSTATIONARY SATELLITES G:** A list of products including GOES-16 Bands, GOES-16 RGB Composites, GOES-16 Data Products, GOES-16 Multippectral Imagery, GOES-16 CLM, GOES-16 + GOES-17 Mosaic, GOES-17 Bands & Composites, and METEOSAT Bands & Composites.
- POLAR SATELLITES G:** A list of products including GCOM W1 AMR2, NUCAPS Soundings, Blended Rain Rate, Blended TPW Products, Blended Ozone, CIRA -ALW, Flood Mapping Products, SST, SST Anomaly and SST Trend, Chlorophyll a Concentration, Sea Ice Products, and Vegetation.
- WPP / FORECAST G:** A list of products including GFS 0.5° and Forecast Charts.
- NWS ICS G:** A list of products including WEATHER ANALYSES, Tropical Weather (Disc. (N. Atlantic)), Tropical Weather (Disc. (E. Pacific)), and SYNOPSIS.
- SYNOPSIS:** A list of products including Drifting Buoy.
- AVIATION:** A list of products including METAR, SPECI, TAF, SKIMETS, AIRMETS, Volcanic Ash, and WARNINGS.
- WARNINGS:** A list of products including Tsunami and Volcanic Ash.

Below the menu, there is a grid of satellite imagery thumbnails. To the right, a large weather map is displayed with various overlays, including pressure systems, wind vectors, and precipitation. The interface also includes a control panel with options for animation, zoom, and product selection.

At the bottom of the interface, there are logos for INPE, NOAA, and AmeriGOO, along with the text "SHOWCast: Simple HTML, Operational Wrapper for GEONETCast-Americas. Developed by Diego Souza." and "Copyright 2019 INPE. All rights reserved."



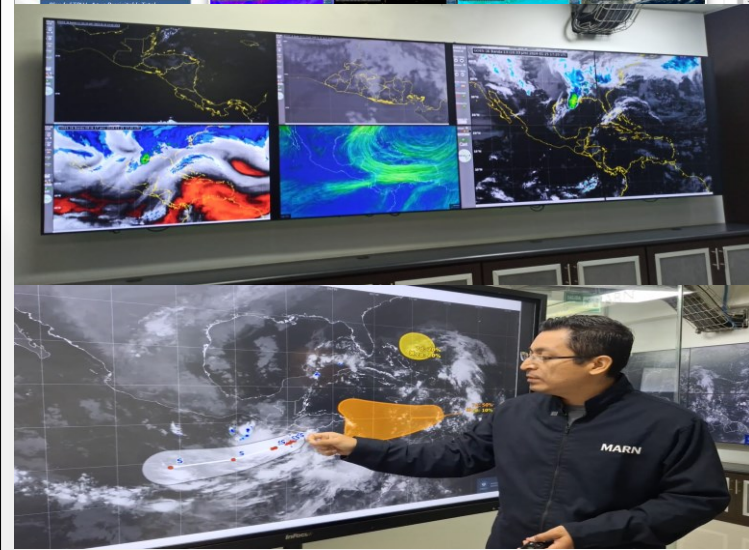
Let's Explore an Online Interface Displaying GNC-A Data



The imagery you will see in this online page have been generated using Python

DEMONSTRATION

<http://srt.ambiente.gov.sv/showcast.html>





GNC Maintenance Aspects



Commercial Rebroadcast Satellite

INTELSAT-21

2. LNB / Feed

Amplifies the received signal and then down-converts frequencies to frequencies that are more manageable via common coaxial cable and electronics in the DVB-S2 receiver

5. Processing and Visualization

Data from GNC-A providers may be processed and visualized using proprietary and / or open source solutions



WHAT SHOULD WE DO IF THE STATION STOPS RECEIVING DATA?

1. Antenna

Receives the INTELSAT-21 (IS-21) signal and projects it on the LNB.

3. DVB-S2 Receiver

Converts the signal from the LNB to data that can be managed by a computer

4. FAZZT Professional Client

Un-encapsulates and organizes the received data (in the original format, as shared by GNC-A Data Providers)

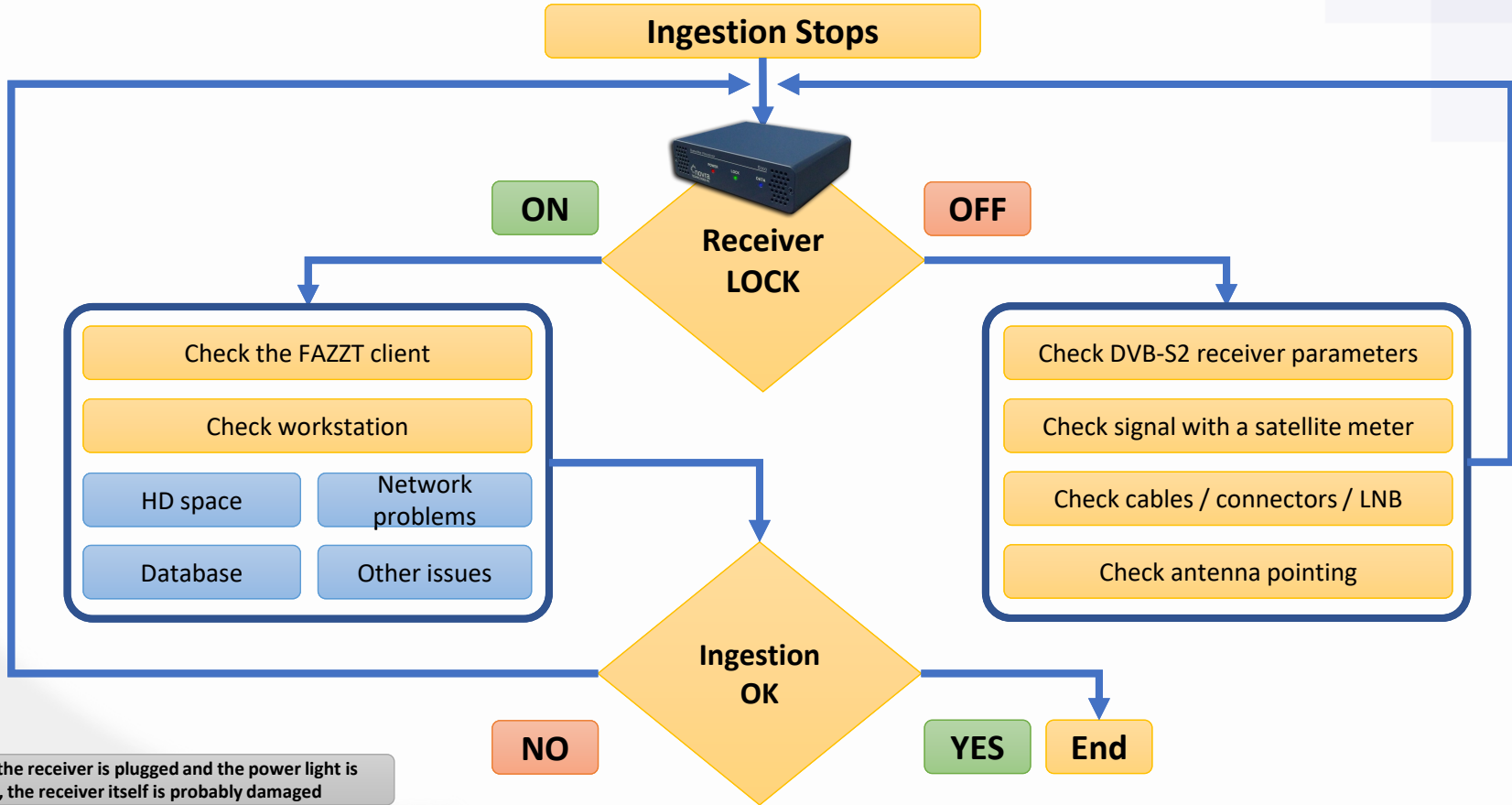
UPS (uninterruptible power supply)

Allows the station to keep running for a period of time when incoming power

Let's see...



Maintenance Flowchart



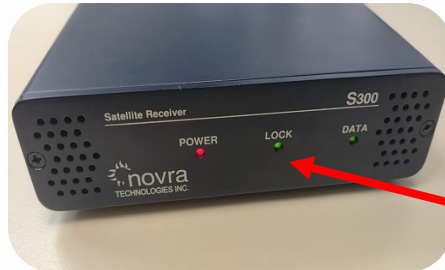
Note: If the receiver is plugged and the power light is OFF, the receiver itself is probably damaged



Check the DVB-S2 Receiver Parameters

If the "LOCK" light is **ON**:

- We could have a problem on the workstation (e.g. HD without space)
- We could have a problem with the FAZZT client (e.g.: it is not able to communicate with the DVB-S2 receiver for some reason – like a problem with the network card).

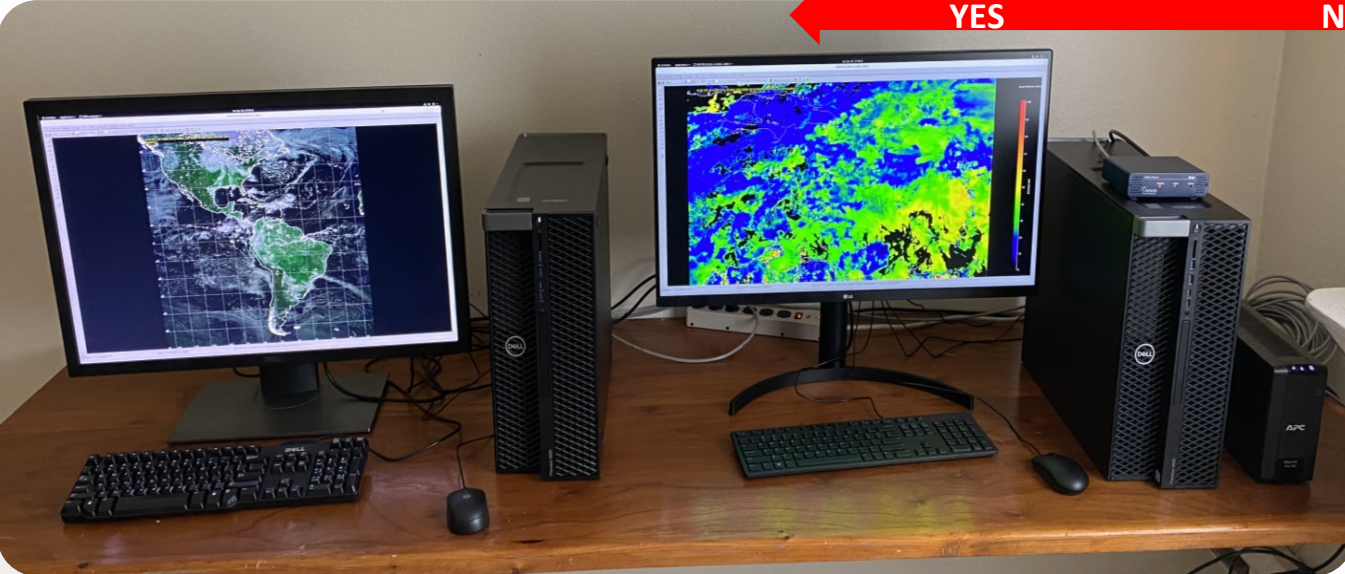


The NOVRA S300D DVB-S2 Receiver is our starting point

Is the "LOCK" light on?

If the "LOCK" light is **OFF**:

- The LNB could be damaged
- The receiver itself could be damaged (e.g. lightning surge)
- The antenna alignment may have been lost (e.g. strong wind gust)





Check the DVB-S2 Receiver Parameters

Command Line Tool (CMCS)

Graphical Interface (NOVRA Management Console)

```
C:\cmcs\cmcs300.exe

CMCS> login 192.168.0.11
Password:
CMCS 192.168.0.11> show satellite
Satellite Interface Settings:

Receiver MAC Address: 00-06-76-05-2a-8c
Receiver Mode: DVBS2
Frequency: 1070.0 MHz
Symbol Rate: 30.000 Msps (Auto)
ModCod: 5/6 8PSK (ANY)
Gold code: 0
Input Stream Filter: Off
Input Stream ID: 0

Signal Lock: On
Data Lock: On

Uncorrectable Rate: 0/Second
Packet Error Rate: 0.0000e+00

Carrier to Noise C/N: 12.4dB
Signal Strength: -36 dBm

CMCS 192.168.0.11>
```

command: show satellite or show sat

Signal Lock: On
Data Lock: On

S300D Management Console V6.3.15.0

File Control Video Wizard Help

Interfaces: Network Satellite CAM IP Data: Content IP Remap A/V Data: Content PAT Control: Reboot

Selected Device: S300D -> IP: 192.168.0.11 MAC: 00-06-76-05-2a-8c

Status: Signal Data CA Module LNB

Signal Strength:

Signal Quality:

Uncorrectables: LDPC BER: Carrier to Noise:

DVB: DVB Packets Accepted: MPE Packets Processed:

DVBS2 Signal Parameters: Carrier Freq: Symbol Rate: Msps MODCOD:

Ethernet: Total Ethernet Packets Sent: Total Ethernet Packets Received: Ethernet Receive Errors:

If you can't even connect to the receiver with the CMCS or Mgmt. software, the receiver could be damaged or there's a network failure.

If you can connect, the "LOCK" is OFF but there is a weak carrier to noise and / or signal strength levels, it could be a problem with the antenna / LNB



GNC-A Maintenance Checklist

Parameter	Reference	Status
DVB-S2 Receiver POWER LED	Must be ON	
DVB-S2 Receiver LOCK LED	Must be ON	
DVB-S2 Receiver DATA LED	Must be blinking	
DVB-S2 Receiver Carrier to Noise (C/N)	The higher the better (at least more than 10 dB)	
DVB-S2 Receiver Signal Strength (dBm)	The higher the better (around -40 and -35 dBm)	
DVB-S2 Receiver L Band Frequency (MHz)	Must be configured to 1070 MHz	
DVB-S2 Receiver Symbol Rate (Msps)	Must be around 30 Msps	
DVB-S2 Uncorrectable Rate (BER)	The lower the better (ideally zero)	
FAZZT Client Alerts	It should have no major alerts active	
FAZZT Client Statistics (24 h missing packets [%])	The lower the number of package losses the better	
FAZZT Client Received Files Log (arriving normally?)	Files should be arriving normally and routinely	
FAZZT IP Receive Interface	The IP interface should be available	
FAZZT "Main" Channel	MUST be active	
FAZZT - Desired Channels are Active?	The channels I want to receive MUST be active	
Workstation HD Space	Space MUST be available	

General Notes:



GNC-A Disaster Capabilities

While internet and other communications means exist, satellite broadcasts are inexpensive to operate and provide a method of communication removed from other terrestrial network limitations of periodic failures.



UPLINK (Ellenwood, Georgia, USA)

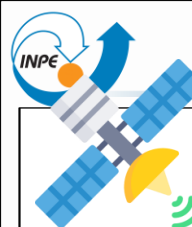


REBROADCAST (INTELSAT-21)



RECEPTION (User Ground Station)

Antigua & Barbuda Meteorological Services - Credits: EEC



GNC-A Disaster Capabilities: No Internet Required

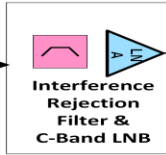
eTeleCast Ground System Configuration

Linear Polarization Feed

Satellite Transmissions:
3.96 – 4.2 GHz



C-band Antenna
WAN



IF Cable



EEC100-H
DVB-S/S2 Receiver

CAT 6
Cable



Data Acquisition Server

Network
Switch/Firewall

LAN

In case of internet failure, the dataflow is not interrupted



Data Processing/
Visualization

TELESPACE
Satellite Ground Stations From EEC

128 South Industrial Blvd
Enterprise, AL 36330

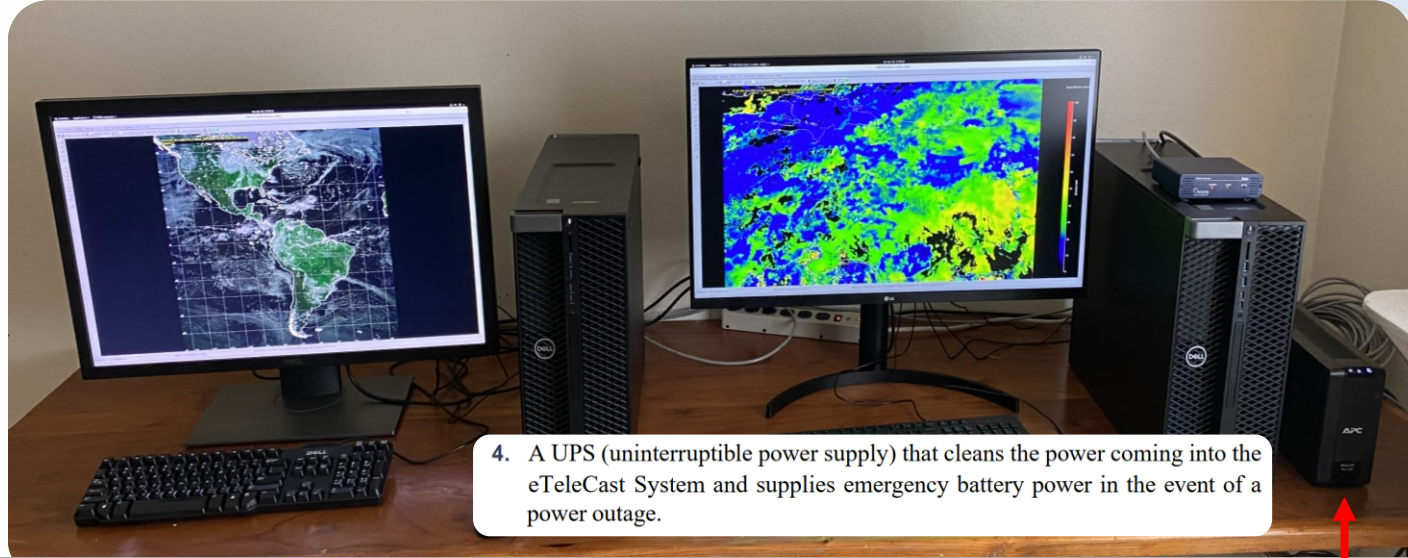
Aug. 5, 2020

eTeleCast
Ground
System

eTeleCast Ground System Configuration - Credits: EEC



GNC-A Disaster Capabilities: Power Outages



4. A UPS (uninterruptible power supply) that cleans the power coming into the eTeleCast System and supplies emergency battery power in the event of a power outage.

GNC-A Station - St. Kitts Meteorological Services - Credits: EEC

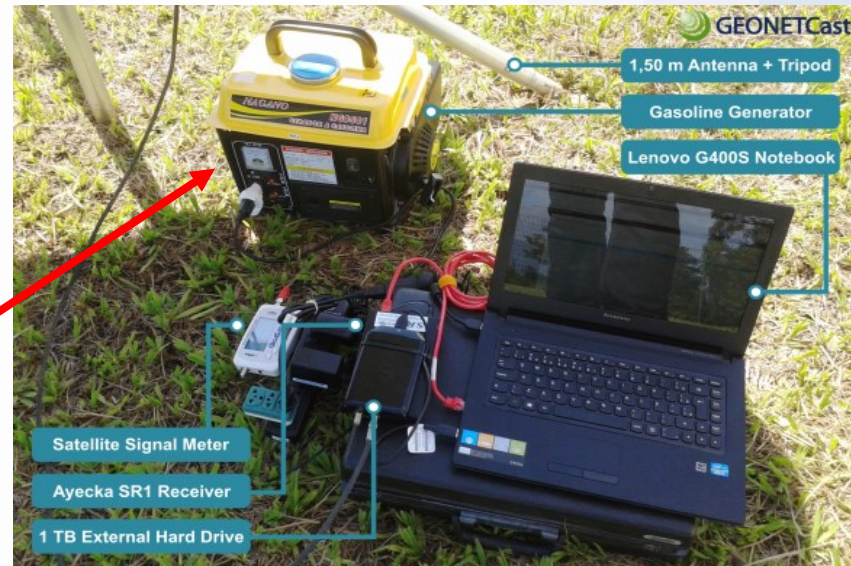
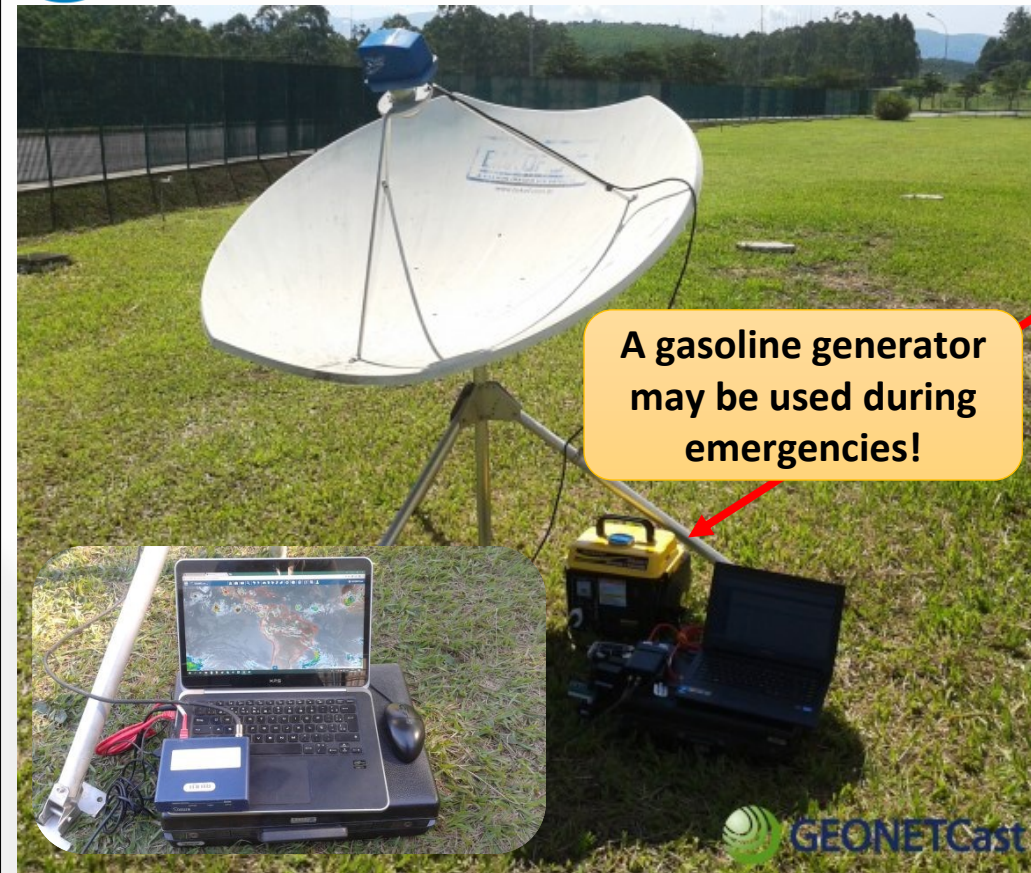
Only need power for the computer(s) and DVB-S2 Receiver (the DVB-S2 receiver provides power to the LNB circuitry).

UPS (uninterruptible power supply)

Allows the station to keep running for a period of time when incoming power is interrupted

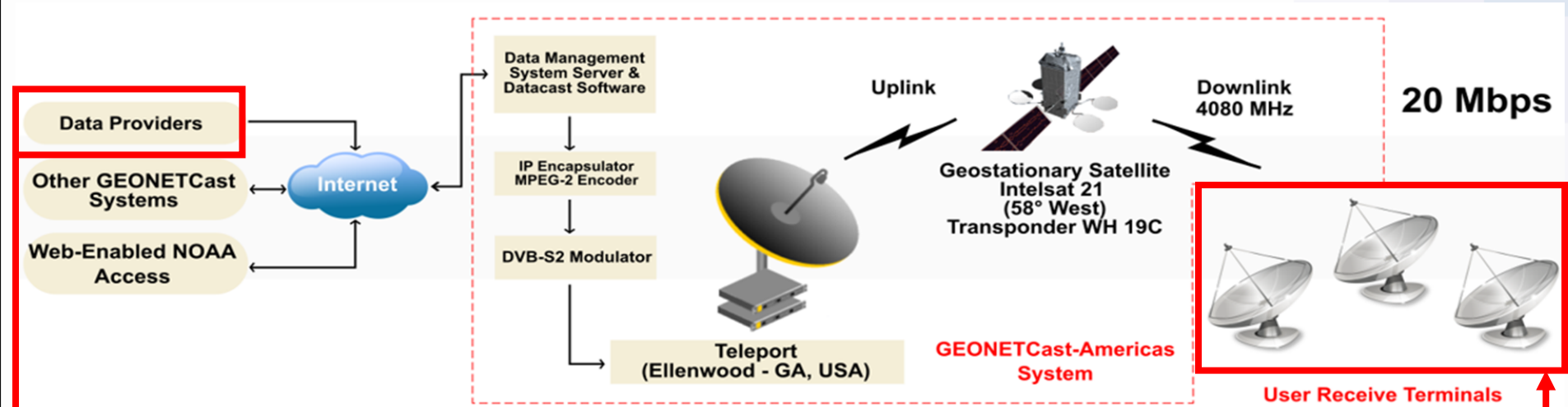


GNC-A Disaster Capabilities: Power Outages





GNC-A Disaster Capabilities: Data Upload (Ad-Hoc)

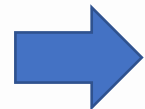


Apart from the data that is normally broadcasted, ability to **add data** to GNC-A on a ad-hoc basis: **no format restriction**

Text Files, Imagery, Alerts, etc.
 Requires coordination between project managers and GNC-A management.

Ability to **add data** prepared **within or outside of the region of interest**

GNC-A Data Provider(s)



GNC-A User(s) Under Emergency Situation



GNC-A Disaster Capabilities: Portable Stations

MOBILE GNC-A RECEIVING STATION EXAMPLE

Portable antenna



External DVB-S2 Receiver



Laptop running the FAZZT Client

Gasoline Power Generator

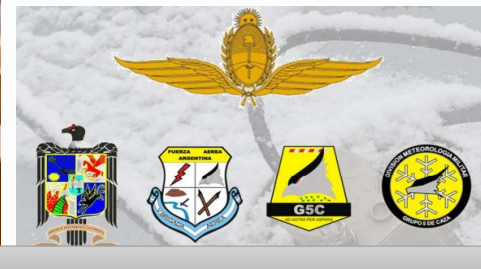
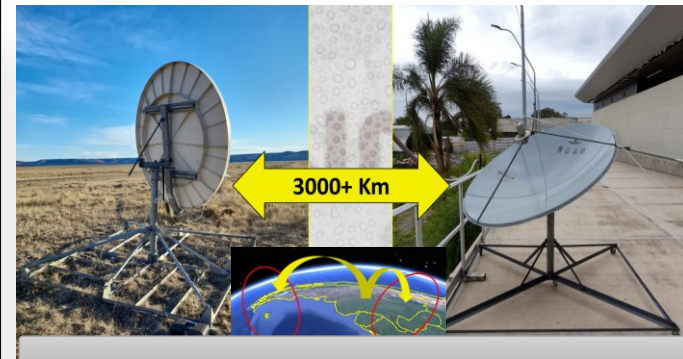
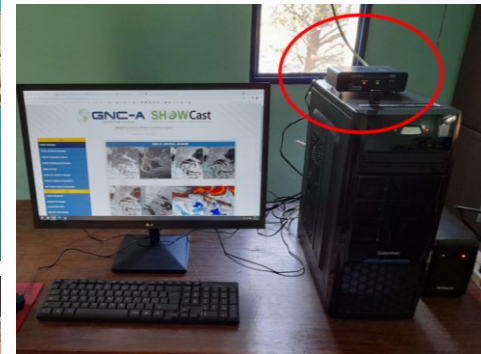
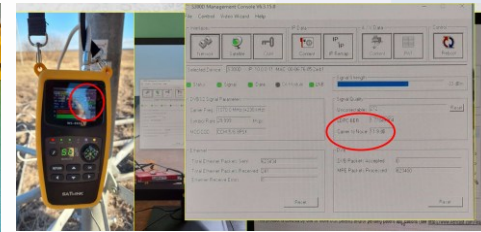


GNC-A Portable Station - Credits: Argentinean Air Force





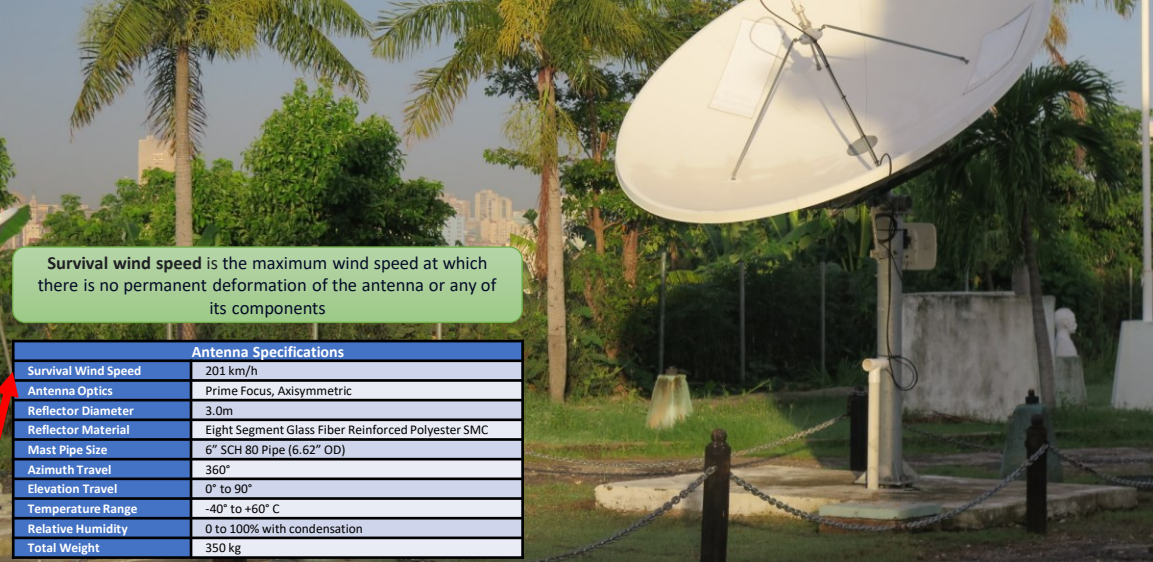
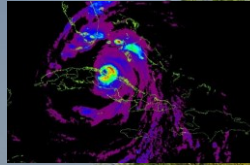
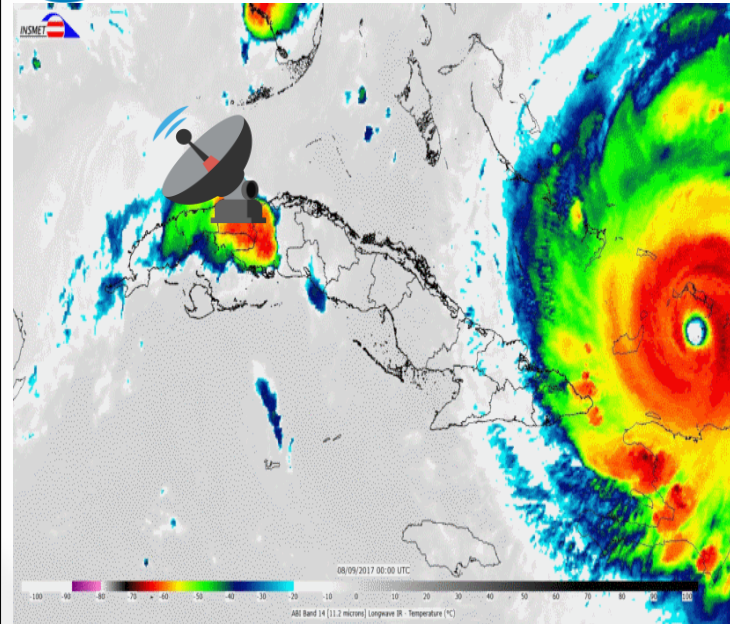
GNC-A Disaster Capabilities: Portable Stations



GNC-A Portable Station - Credits: Argentinean Air Force



GNC-A Disaster Capabilities: Survival Wind Speed



Survival wind speed is the maximum wind speed at which there is no permanent deformation of the antenna or any of its components

Antenna Specifications	
Survival Wind Speed	201 km/h
Antenna Optics	Prime Focus, Axisymmetric
Reflector Diameter	3.0m
Reflector Material	Eight Segment Glass Fiber Reinforced Polyester SMC
Mast Pipe Size	6" SCH 80 Pipe (6.62" OD)
Azimuth Travel	360°
Elevation Travel	0° to 90°
Temperature Range	-40° to +60° C
Relative Humidity	0 to 100% with condensation
Total Weight	350 kg

Hurricane Irma
 9 Sept. 2017 0000 UTC
 10 Sept. 2017 2300 UTC
 Animation kindly provided by CIMO - INSMET - Cuba

Winds of 120 km/h

GNC-A Station Antenna (PRODELIN 3.0 m) - Credits: CIMO - INSMET - Cuba



GNC-A
GEONETCast-Americas
Delivering Environmental Data to Users in the Americas

**STATION
INSTALLATION
AND MAINTENANCE**

■ **GNC-A Installation Manual**
November 11, 2021

Developed by INPE - National Institute for Space Research - Brazil
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GNC-A
GEONETCast-Americas
Delivering Environmental Data to Users in the Americas

**ILLUSTRATED
PRODUCT CATALOG**

■ **Illustrated Product Catalog**
October 08, 2021

Developed by INPE - National Institute for Space Research - Brazil
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GNC-A
GEONETCast-Americas
Delivering Environmental Data to Users in the Americas

SHOWCast

■ **SHOWCast Installation Manual**
October 26, 2021

Developed by INPE - National Institute for Space Research - Brazil
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For more details please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



GNC-A Documents: Reference Slides

GEONETCast-Americas Training for the Eastern Caribbean States

Comprehensive Slide Compilation:
All You Need to Know About GNC-A



Diego Souza
diego.souza@inpe.br

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



Caribbean Institute
for Meteorology
and Hydrology



geonetcast.wordpress.com | my.cimh.edu.bb/course/view.php?id=196

GEONETCast-Americas Training for the Eastern Caribbean States

Comprehensive Slide Compilation:
Data Processing With Python



Diego Souza
diego.souza@inpe.br

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



Caribbean Institute
for Meteorology
and Hydrology



geonetcast.wordpress.com | my.cimh.edu.bb/course/view.php?id=196

For more details please visit: <https://geonetcast.wordpress.com/geonetcast-americas-documentation/>

Procedure to access CIMHs Moodle: <https://geonetcast.wordpress.com/2023/07/14/geonetcast-python-training-for-eastern-caribbean-states-moodle-is-now-open/>



Let's Explore the GNC-A Documentation

**ILLUSTRATED
PRODUCT CATALOG**

Illustrated Product Catalog
October 08, 2021

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**STATION
INSTALLATION
AND MAINTENANCE**

GNC-A Installation Manual
November 11, 2021

SHOWCast

SHOWCast Installation Manual
October 26, 2021

GEONETCast-Americas Training for the Eastern Caribbean States

Comprehensive Slide Compilation;
All You Need to Know About GNC-A

Diego Souza
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INPE - National Institute for Space Research

SDCR PROJECT USAID

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DEMONSTRATION

<https://geonetcast.wordpress.com/geonetcast-americas-documentation/>



The GNC-A User Group Webinar

A series of User Group webinars to facilitate communication among, and provide updates to GEONETCast-Americas users.

GNC-A USER GROUP webinar

GNC-A User Group Webinar

20 June 2018

Natalia Donoho / Diego Souza



GEONETCast-Americas Overview

Diego Souza
diego.souza@cptec.inpe.br

INPE - National Institute for Space Research
CPTec - Center for Weather Forecasting and Climate Research
DSA - Satellite and Environmental Systems Division

satellite.cptec.inpe.br

▶ GEONETCast-Americas User Group Webinar | 20th June, 2018

GEONETCast-Americas USER GROUP webinar #12

Save the Date! - ¡Reserva la Fecha!

We will hold the 12th GNC-A User Group Webinar on **Thursday February 10, 2022 at 13:00 EST / 18:00 UTC until 14:30 EST / 19:30 UTC**
 Realizaremos el 12° Seminario Web del Grupo de Usuarios de GNC-A el **Jueves, 10 de febrero de 2022 a las 18:00 UTC hasta las 19:30 UTC**
 Realizaremos a 12° Webinar do Grupo de Usuários GNC-A na **quinta-feira, 10 de fevereiro de 2022, às 18:00 UTC até 19:30 UTC**

Webex link: <https://spsd.webex.com/spsd/j.php?MTID=m955f9a0fe3e32ba90a8c0955b63f044>

Agenda

- **NOAA & INPE Updates - Actualizaciones - Atualizações:**
GNC-A / GOES-R / JPSS / GeoXO
- **NOAA Product Usage Training:**
NOAA-20 VIIRS Chlorophyll-A Merge Ocean Color Product
- **GEONETCast-Americas User Case Study:**
PUCV (Pontifical Catholic University of Valparaiso - Chile)
GNC-A Station n°95
- **Data Processing and Visualization:**
GEOs: Open Source Observational Geoportal Associated with a Collaborative Development Information System (PUCV)
- **Mesooscal Domain Sector (MDS)**
International Requests:
SMN Argentina - Case Study

The first edition was held on 20 June 2018. Since then, we had 14 editions, the latest on 2 March 2023.



The GNC-A User Group Webinars

**GEONETCast-Americas
GNC-A USER GROUP
webinar #12**

Save the Date! - ¡Reserva la Fecha!

We will hold the 12th GNC-A User Group Webinar on
Thursday February 10, 2022 at 13:00 EST / 18:00 UTC until 14:30 EST / 19:30 UTC

Realizaremos el 12° Seminario Web del Grupo de Usuarios de GNC-A el
jueves, 10 de febrero de 2022 a las 18:00 UTC hasta las 19:30 UTC

Realizaremos a 12° Webinar do Grupo de Usuários GNC-A na
quinta-feira, 10 de fevereiro de 2022, às 18:00 UTC até 19:30 UTC

Webex link: <https://spsd.webex.com/spsd/j.php?MTID=m955f9a0fe3e32ba90a8cf0955b63f044>

Agenda

• NOAA & INPE Updates - Actualizaciones - Atualizações:
GNC-A / GOES-R / JPSS / GeoXO

• NOAA Product Usage Training:
NOAA-20 VIIRS Chlorophyll-A Merge Ocean Color Product

• GEONETCast-Americas User Case Study:
PUCV (Pontifical Catholic University of Valparaiso - Chile)
GNC-A Station n°95

• Data Processing and Visualization:
GEOOS: Open Source Observational Geoportal Associated
with a Collaborative Development Information System
(PUCV)

• Mesoescala Domain Sector (MDS) -
International Requests:
SMN Argentina - Case Study



**GEONETCast-Americas
GNC-A USER GROUP
webinar #13**

Save the Date! - ¡Reserva la Fecha!

We will hold the 13th GNC-A User Group Webinar on
Thursday May 19, 2022 at 13:00 EST / 17:00 UTC until 14:30 EST / 18:30 UTC.

Realizaremos el 13° Seminario Web del Grupo de Usuarios de GNC-A el
jueves, 19 de mayo de 2022 a las 17:00 UTC hasta las 18:30 UTC.

Realizaremos o 13° Webinar do Grupo de Usuários GNC-A na
quinta-feira, 19 de maio de 2022, às 17:00 UTC até 18:30 UTC.

Webex link: <https://spsd.webex.com/spsd/j.php?MTID=m0dee1e869ef8c92b2734b80ce9a8419>

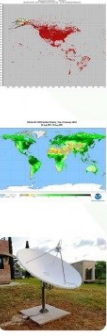
Agenda

• NOAA & INPE Updates - Actualizaciones - Atualizações:
GNC-A / GOES-R / JPSS / GeoXO

• GOES DCS:
Data Collection System
Overview
Tests on GNC-A

• NOAA Product Usage Training:
VIIRS Vegetation Products

• GEONETCast-Americas User Case Study:
Solar Energy Laboratory (LES)
University of the Republic (Udelar) - Uruguay
GNC-A Station n°61



**GEONETCast-Americas
GNC-A USER GROUP
webinar #14**

Save the Date! - ¡Reserva la Fecha!

We will hold the 14th GNC-A User Group Webinar on
Thursday March 02, 2023 at 12:00 EST / 17:00 UTC until 13:30 EST / 18:30 UTC.

Realizaremos el 14° Seminario Web del Grupo de Usuarios de GNC-A el
jueves, 02 de marzo de 2023 a las 17:00 UTC hasta las 18:30 UTC.

Realizaremos o 14° Webinar do Grupo de Usuários GNC-A na
quinta-feira, 02 de março de 2023, às 17:00 UTC até 18:30 UTC.

Webex link: <https://spsd.webex.com/spsd/j.php?MTID=m486050c5771b469deadee1a380544049>

Agenda

• openDCS: an open-source software package for retrieving and
manipulating GOES Data Collection System messages.

The GEONETCast-Americas broadcast includes DCS messages broadcast by Data Collection Platforms within the
reception footprints of the GOES-East and West satellites.



The GNC-A Product Usage Trainings


<https://geonetcast.wordpress.com/gnc-a-product-usage-trainings/>

Introduction to JPSS Data Products for GNC-A Users



LIHANG ZHOU¹, MITCH GOLDBERG²
¹ JPSS STAR (JSTAR) PROGRAM MANAGER
 ALGORITHM MANAGEMENT PROJECT (AMP) DEPUTY FOR SCIENCE
 NOAA/NESDIS/JSTAR
² JPSS PROGRAM SCIENTIST: NOAA/NESDIS/JPSS

CONTRIBUTIONS FROM
 JPSS STAR (JSTAR) SCIENCE TEAM MEMBERS
 JPSS PROGRAM SCIENCE OFFICE (PSO)
 JPSS ALGORITHM MANAGEMENT PROJECT (AMP)
 ARE THANKFULLY ACKNOWLEDGED



Introduction to JPSS Data Products for GNC Users:

- JPSS VIIRS Day-Night-Band Products (PALs: Shuang Qiu; John Paquette)
- GCOM AMSR-2 Products (PAL: Limin Zhao)

Presented by: Lihang Zhou
 DPMS Deputy and Satellite Product Manager
 NOAA/NESDIS/Joint Polar Satellite System (JPSS)

Contributions from Mitch Goldberg
 JPSS STAR Science Team Members
 OSPO PALs
 JPSS Program Science Office
 JPSS Data Products and Management Services (DPMS)
 are thankfully acknowledged



NOAA's GOES Data Collection System (DCS) Overview

Version 051322

Prepared by: Seth Clevestine

National Environmental Satellite, Data, and Information Service

Last Updated: 05/13/2022

NOAA Global Flood Product GeoNetCast Overview

Presented by William Straka III (SSEC/CIMSS)
 Algorithm Lead - Sanmei Li (GMU)
 Assistance provided by Jay Hoffman (SSEC/CIMSS)

Funding provided by JPSS/NOAA

May 14, 2020



Advectively blended Layered Precipitable Water Product (ALPW)

José Manuel Gálvez
 SRG @ WPC/NWS/NOAA

10th GNC-A Users Meeting
 8 July 2021



GNC-A Seminar: VIIRS Ocean Color Near-Real Time Products

Dr. Sheekela Baker-Yeboah,
 NOAA/NESDIS/OSPO

February 10, 2022

VOLCANIC ASH PRODUCT - JPSS

Jamie Kibler
 VAAC Washington Manager



The GNC-A User Case Studies

<https://geonetcast.wordpress.com/gnc-a-user-study-cases/>

Brazil – National Weather Service
 INSTITUTO NACIONAL DE METEOROLOGIA
 Seção de Produtos de Imagens de Satélites



INMET
GNC-A

FUER Argentina – Air Force
BRIGADA AEREA



GEONETCAST STATION N° 92 - Mobile

06 JUL 24
 Alfy Ricardo C. Valcárcel

MEXICO – National Water Commission
 NATIONAL WATER COMMISSION
 NATIONAL METEOROLOGICAL SERVICE



GEONETCAST AMERICAS SYSTEM
 IN MEXICO

Colombia - IDEAM
 APLICACIONES DE
 GEONETCAS EN EL IDEAM



Brazil - CLIMATEMPO



CLIMATEMPO
 A Inmetec Company

Brazil - UNESP / IPMET
 GNC-A: Nowcasting & Teaching

Demilson Quintão
 UNESP / FC / IPMET





Chile – Universidad de La Serena

CENTRO DE ESTUDIOS ESPACIALES
 UNIVERSIDAD DE LA SERENA

DrC Ricardo Cabezas Carlos
 Centro de Estudios Espaciales
 Co-Chair CIBELVYC
 Universidad de La Serena
 Chile



Brazil - APAC

Chamada MCTI/CNPq/FNDCT - Ação Transversal N° 65/2013 - Pesquisa e Desenvolvimento em Meteorologia e Climatologia

Geonetcast: Um Sistema de Monitoramento e Previsão de Curto Prazo baseado em Produtos de Sensoriamento Remoto: O SigmaCast
 Coordenador Luiz Machado DAS/INPE

Brazil - CENSIPAM

EXPERIÊNCIA DO CENSIPAM COM O SISTEMA GEONETCAST AMERICAS E A APLICAÇÃO SIGMACAST



Brazil - CENSIPAM
 CENTRO GESTOR E OPERACIONAL DO SISTEMA DE PROTEÇÃO DA AMAZÔNIA

CENSIPAM



Brazil - FUNCEME

Sistema GEONETCast de Recepção de Produtos Meteorológicos na FUNCEME

Congresso Brasileiro de Meteorologia – CBMET 2016
 10 de Novembro de 2016

EL Salvador – MARN

El Sistema GNC en El Salvador

Juan Figueroa@mar.d.gob.sv
 edibonascobar@mar.d.gob.sv
 07/06/2016

3 años garantía: mejor precio, asistencia, soporte técnico y transparencia

EL Salvador - MARN

Ministerio de Medio Ambiente y Recursos Naturales – El Salvador

W. Alvarado, w.alvarado@marn.gob.sv
 J. J. Figueroa, juanfigueroa@marn.gob.sv

Brazil - LAMET

Universidade Estadual do Norte Fluminense Darcy Ribeiro (UENF)

Laboratório de Meteorologia (LAMET)

Maria Gertrudes Justi
 justimeteor@gmail.com

Peru - Universidad de La Molina

UNIVERSIDAD NACIONAL AGRARIA LA MOLINA

Asesorías con el sistema GEONETCAST

Brazil - FURNAS



Energy that drives Brazil

Uruguay – Air Force



OBSERVAR, PREDECIR, PROTEGER

Paraguay - DINAC / Universidad Católica

Geonetcast en Paraguay

Wilson Caballero
 Dirección de Meteorología e Hidrología
 DINAC

Evel Barreto
 Centro de Tecnología Ambiental
 Universidad Católica de Asunción

Brazil - UEMA
 GOVERNO DO MARANHÃO

GNC-A UEMA



Uruguay - INUMET



El Salvador - MARN

Interference to the GEONETCast signal

William Alvarado, w.alvarado@marn.gob.sv
 06/04/2016

Chile – PUCV

Open Source Observational Geoportual Associate with a Collaborative Development Information System



8. Hernandez J., Barrios, J., Rodriguez, M., Fernandez, D., Quiñones
 Fundación San Ignacio del Huayco
 PUCV, 2017

Chile - PUCV

GEONETCast - Americas
 Estación PUS
 Incorporación al Geoportual Observacional GEOOS

8. Hernandez J., Barrios, J., Rodriguez, M., Fernandez, D., Quiñones
 Fundación San Ignacio del Huayco
 PUCV, 2017

Uruguay - IES - Universidad de la Republica
 Satellite based operational products for solar energy applications in South America

Dr. Eng. Rodrigo Alonso Suárez
 Centro de Investigación Científica
 IES - UR



LABORATORIO DE ENERGIA SOLAR



GEONETCast-Americas **Contacts and Links**

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GEONETCast-Americas (GNC-A Program Management)

Elliott Matthews: elliott.matthews@noaa.gov

NESDIS International and Interagency Affairs

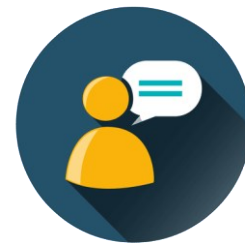
Diego Souza (INPE)

diego.souza@inpe.br

Technical Information

Kelvin Xu: kelvin.xu@noaa.gov and Toby Hutchings: toby.hutchings@noaa.gov

Chief, Direct Services Branch | Direct Readout Program Manager



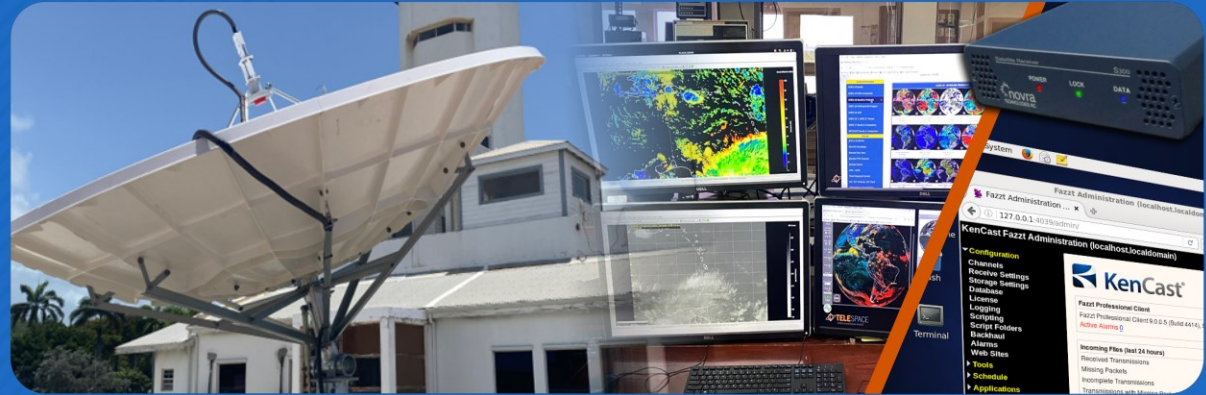
Web Pages: www.geonetcastamericas.noaa.gov | www.geonetcast.wordpress.com

GEONETCast-Americas Webinar in Preparation for CARIBE WAVE 26

March 12th 2026 18:30 UTC

GNC-A Overview, Operation and Product Suite

THANK YOU! QUESTIONS?



Diego Souza

diego.souza@inpe.br

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

MINISTÉRIO DA
CIÊNCIA, TECNOLOGIA
E INOVAÇÕES

