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GLOBAL CLIMATE OBSERVING SYSTEM (GCOS)

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Session 3

GRUAN Site Report for Tenerife

(Submitted by Miguel Hernández)

Summary and Purpose of this Document

Report from the GRUAN site Tenerife for the period January 2024 to December 2024.

Overview

TENERIFE currently contributes to GRUAN with a twice-a-day sounding programme. In this Report Period (Jan to Dec 2024), 753 soundings were sent to LC in data stream RS41-SGP using the gtRsl tool.

A GNSS measurement systems has been in place since mid-2023. Data from GNSS are regularly sent to GFZ Helmholtz Centre for Geosciences in order to refine and evaluate the GNSS-PW measurement derived from it. More on this topic below.

TEN has now two VAISALA Sounding Processing Subsystems, SPS311G. One at the site, working in standard autolauncher operation and a second one in reserve to be used in campaigns and laboratory RS experiments along with a SHC.

Change and change management

- On 17th September 2024, the AWS anemometer was changed from VAISALA WAA151 and WAV151 to ultrasonic model VAISALA WMT703.
- There is no significant change in environment. According to TN-9, pictures were uploaded in LC s ftp site in February (site view) and in January/September 2024 (instruments view). We asked LC to allow only once or twice-per-year pictures due to little seasonal change (subtropical).
- In July 2023 a GNSS receiver was installed at the Site. We contacted Galina Dick (TT GNSS-PW) and LC for advice and presented a location study. The system installed is a JAVAD TRE_3S receiver with a JAVRINGANT_G5T antenna. It started operations on September 2023. A custom-made software executed in the weather station datalogger was developed to generate required RINEX files with meteorological data. International GNSS code is TFEG. Since September 2023 we send data to GFZ-Potsdam for protocol adequacy and quality assess from the GNSS Group. During 2024 this data flow has continued. We are waiting for feedback on data quality so the GNSS-PW data can be included in GRUAN data flow.

Resourcing

Current reporting period had no resourcing issues. The resources are guaranteed for next period (2025-2026) in personnel, funding and materials for operational launchings. The site is visited at least once per week by AEMET's personnel. INEMET S.L. (Vaisala's certified contractor in Spain) performs twice-a-year mechanical and software maintenance.

There are 3 operators.

Operations

No significant operational challenges in the period.

Site assessment and certification

The certification process of TENERIFE has been on for some time now. In 2024 the station worked on improving its GNSS measurement system and data transmission as required by the certification protocol but has not yet received LC feedback on it. It is hoped that in 2025, TENERIFE can be certified.

GRUAN-related research

During the reporting period, no significant research has been done in the site. It must be mentioned a new SHC was acquired by the site as we had doubts about previous chamber performance. At present this site has two SHC, both working well.

The site has presence in TT-SITES. Although no listed in TT-RADIOSONDES, Tenerife has participated and continues to do so in this TT, contributing to radiosonde uncertainty studies in Autolaunchers.

WG-GRUAN interface

OK

Other archiving centres

The station belongs to AEMET's Thermodynamic Sounding Network (RST). This network management is ISO 9001:2008 certified. BUFR ascent and descent data are sent to GOS and the GUAN network.

Participation in campaigns

No campaigns participation in the period.

Future plans

- The main goal will be certification of the site.
- Participation in new autolauncher RS Study Led by Payerne Site in 2025.
- We hope LC will give formal OK to GNSS-PW data from TENERIFE.

GRUAN Site Report for Tenerife (TEN), 2024

Reported time range is Jan 2024 to Dec 2024
Created by the Lead Centre
Version from 2025-11-07

1 General GRUAN site information

Object	Value
Station name	Tenerife
Unique GRUAN ID	TEN
Geographical position	28.3184 °N, -16.3822 °W, 115.0 m
Operated by	AEMET | Agencia Estatal de Meteorología
Main contact	Hernández, Miguel
WMO no./name	60018 TENERIFE-GUIMAR
Operators	currently 0, changes +0 / -0
Sounding Site	1
GNSS	1

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
TEN-GN-01	GNSS Site TFEG	GNSS	1	operational
TEN-RS-01	Tenerife Automatic Radiosonde Launch System (AUTOSONDE)	Sounding Site	2	753

1.2 General comments from Lead Centre

No comments from Lead Centre.

2 System: GNSS Site TFEG (TEN-GN-01)

Object	Value
System name	GNSS Site TFEG
Unique GRUAN ID	TEN-GN-01
System type	GNSS (GN - GNSS)
Geographical position	28.1906 °N, -16.2259 °W, 121.0 m
Operated by	AEMET | Agencia Estatal de Meteorología
Instrument contact	Hernández, Miguel
Started at	2023-07-04
Defined setups	1 (HOURLY)
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

Dataflow of GNSS data to GRUAN LC and the GRUAN GNSS processing centre at GFZ was started in July 2023. The current dataflow includes manufacturer raw data, converted raw data (RINEX) and instrument logs, containing all equipment changes.

The operational processing as GNSS-PW-GDP is performed.

3 System: Tenerife Automatic Radiosonde Launch System (AUTOSONDE)

Object	Value
System name	Tenerife Automatic Radiosonde Launch System (AUTOSONDE)
Unique GRUAN ID	TEN-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	28.3184 °N, -16.3822 °W, 115.0 m
Operated by	AEMET | Agencia Estatal de Meteorología
Instrument contact	Hernández, Miguel
Started at	2002-09-10
Defined setups	2 (ROUTINE, ROUTINE2)
Possible streams	RS41, RS92

3.1 Lead Centre comments

3.1.1 Dataflow

Sonde dataflow to the GRUAN LC is operational since November 2017.

This dataflow includes stream of the Vaisala RS41-SGP (since December 2017). All launches are submitted using the GruanToolRsLaunch (gtRsl).

3.1.2 General

This is an autolauncher system.

Routine soundings are performed two times per day.

There is good performance in terms of burst altitude which is regularly 10 hPa and higher.

3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI

3.2.1 Stream: RS41

Product	Version	Soundings received	Available at LC	Distributed by NCEI
RS41		753	753	
RS41-RAW	001		752	
RS41-EDT	001		750	
RS41-GDP	001		735	

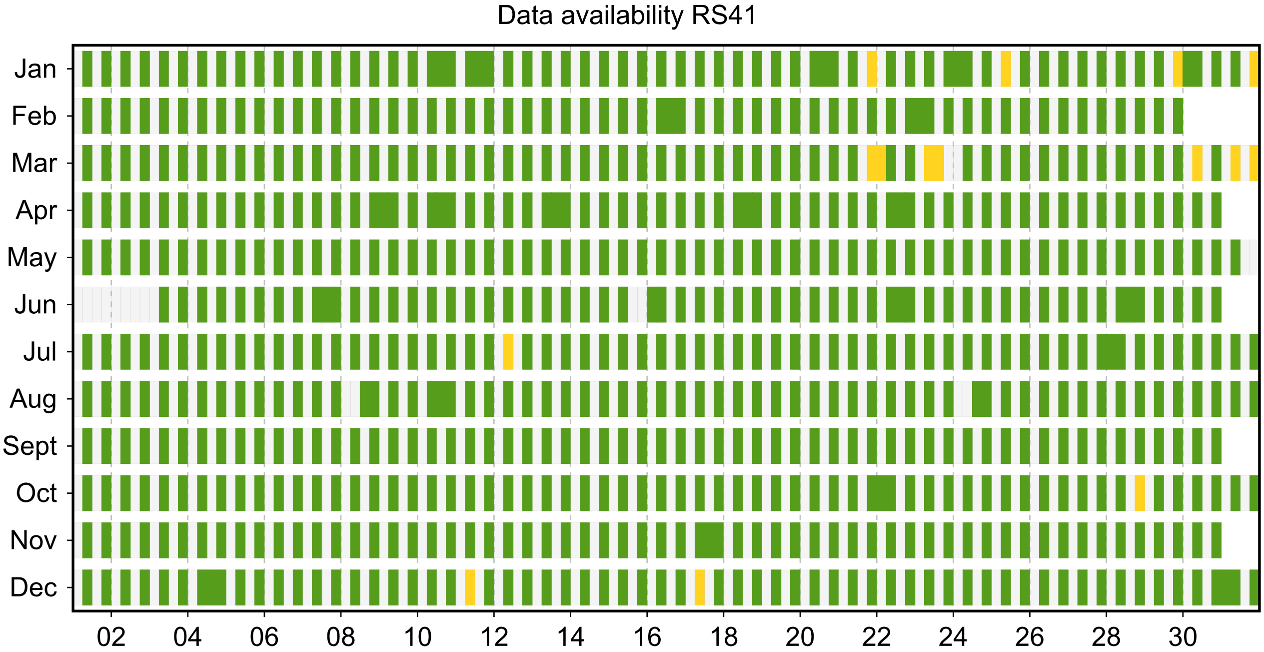
3.3 Availability of data products

Available (green): All steps of data processing have been successfully completed. The data product file is available at LC (e.g. files that didn't pass QA/QC or uncertified GRUAN data products) and/or at NCEI (a certified GRUAN data product file that did pass QA/QC).

Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software error.

Original (red): The original, manufacturer-produced, raw data file is available (e.g. MWX data file) but was not converted into a GRUAN-standardized raw data format (NetCDF). Reasons for this may be missing data conversion software, a software error, or a corrupt data file.

3.3.1 Stream: RS41



3.4 Instrument combinations of TEN-RS-01

Count	Instrument combination
753	RS41

3.6 Measurement events