



WMO/IOC/UNEP/ICSU
GLOBAL CLIMATE OBSERVING
SYSTEM (GCOS)

Doc. 5.29
(07.II.2024)

**15th GRUAN Implementation-
Coordination Meeting (ICM-15)**

Session 5

Bern

11 March - 15 March 2024

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 2022 to December 2023.

Overview

TENERIFE contributes currently to GRUAN with a twice-a-day sounding programme. In this Report Period (Jan 2022-Dec 2023), 1516 soundings were sent to LC in data stream RS41-SGP using the gtRsl tool.

In the future (early 2024) we expect to contribute also in the GNSS-PW data stream with new equipment installed in July 2023.

Change and change management

- Autolauncher software was updated in 2023 according to manufacturer recommendation on 18 October 2023 (MW41 software changed from version 2.17.1 to version 2.20). The change has been updated in the GtRsl config file.
- In December 2023 a topographic study was carried out. The geographical coordinates and altitudes were measured with accuracy. There is a difference of 1.5 m in the previously declared automatic weather station barometer altitude. This difference has been communicated to LC and we are waiting for OK to proceed with changes in software parameters.
- There is no significant change in environment. According to TN-9, pictures were uploaded in LC's ftp site in January 2022 and June 2023. We asked LC to allow only once-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.
- In relation to the TEN site information shown on the GRUAN website, it should be noted that this station also belongs to GUAN network (to be updated by LC)

Resourcing

Current reporting period had no resourcing issues. The resources are guaranteed for next period (2024-2025) 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 and on demand in case the system does not work properly.

Operations

Although sounding keep reaching regularly 10hPa level according to site reports, there have been periods of time when for a several week period the median altitude has lowered with no clear reason. We assume it is due to faulty balloon lot.

In order to reduce environment impact, new Vaisala cellulose-based string unwinders are in operation from January 25th 2024.

Covid-19

No impact.

Site assessment and certification

With recent GNSS installation we hope Tenerife can be certified within this year (2024). This topic should be addressed in ICM-15.

GRUAN-related research

As stated in 2021 Questionnaire, a humidity check experiment using the SHC for Vaisala autolaunchers was proposed by LC and TT Sites and started at PAYERNE. TENERIFE joined and we sent result in 2021 to LC.

Although no official LC results have been issued to our knowledge, we observed that for 100% (SHC) and 0% RH checks, 8 out of 10 radiosondes changed by 0.2% or less for a two-week period. The

sample included 10 RS41 radiosondes.

WG-GRUAN interface

OK.

Other archiving centers

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 campaign participation in the period.

Future plans

We have two main goals in near future:

1. Apply to GRUAN for inclusion of PW-GNSS data stream.
2. In connection to previous, apply for TENERIFE certification.



GRUAN Site Report for Tenerife (TEN), 2022

Reported time range is Jan 2022 to Dec 2022

Created by the Lead Centre

Version from 2024-03-01

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

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
TEN-RS-01	Tenerife Automatic Radiosonde Launch System (AUTOSONDE)	Sounding Site	2	777

1.2 General comments from Lead Centre

No comments from Lead Centre.

2 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

2.1 Lead Centre comments

2.1.1 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).

2.1.2 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.

2.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI
---------	---------	--------------------	-----------------	---------------------

2.2.1 Stream: RS41

RS41		777	777	
RS41-RAW	001		775	
RS41-EDT	001		758	
RS41-GDP	001		755	

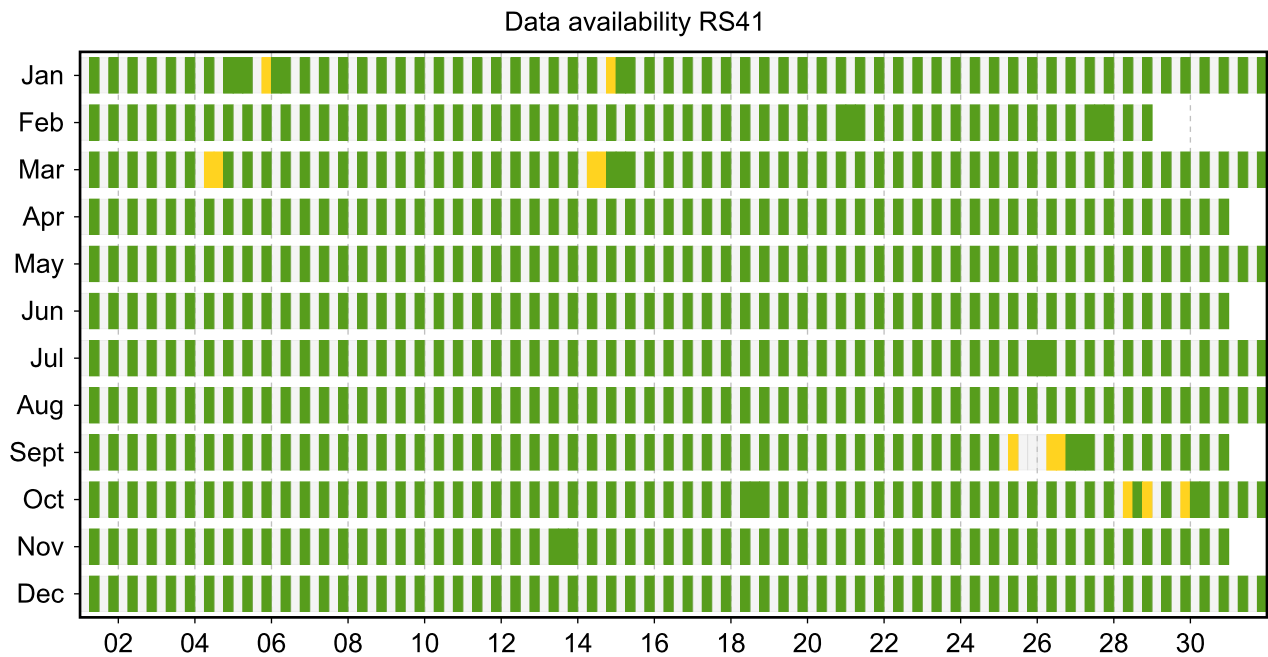
2.3 Availability of data products

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.

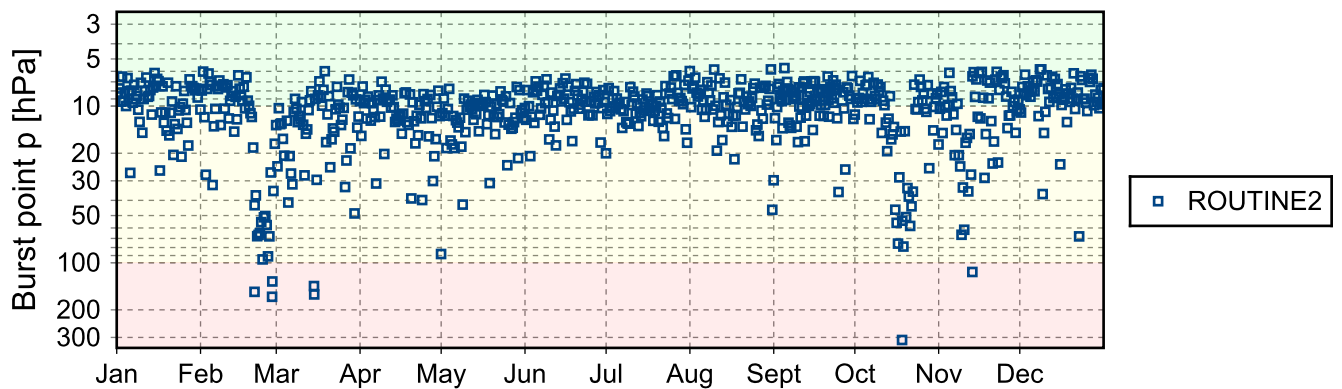
2.3.1 Stream: RS41



2.4 Instrument combinations of TEN-RS-01

Count	Instrument combination
777	RS41

2.6 Measurement events





GRUAN Site Report for Tenerife (TEN), 2023

Reported time range is Jan 2023 to Dec 2023

Created by the Lead Centre

Version from 2024-03-01

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

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
TEN-RS-01	Tenerife Automatic Radiosonde Launch System (AUTOSONDE)	Sounding Site	2	739

1.2 General comments from Lead Centre

No comments from Lead Centre.

2 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

2.1 Lead Centre comments

2.1.1 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).

2.1.2 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.

2.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI
---------	---------	--------------------	-----------------	---------------------

2.2.1 Stream: RS41

RS41		739	739	
RS41-RAW	001		736	
RS41-EDT	001		732	
RS41-GDP	001		731	

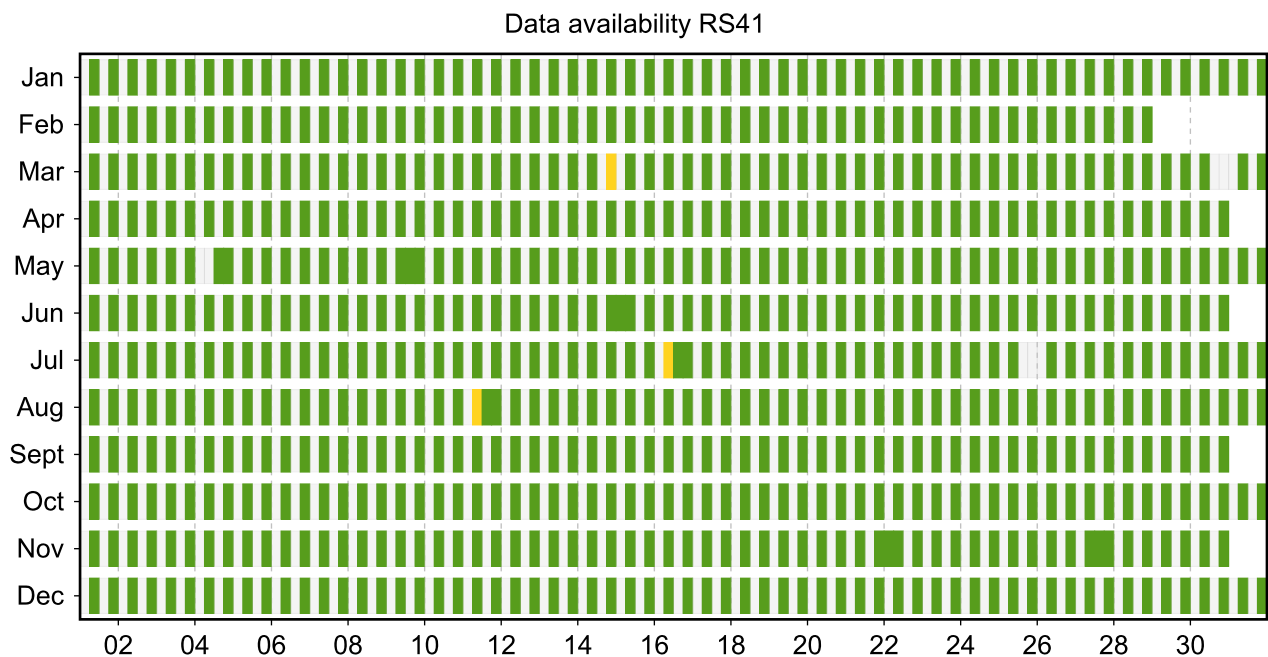
2.3 Availability of data products

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.

2.3.1 Stream: RS41



2.4 Instrument combinations of TEN-RS-01

Count	Instrument combination
739	RS41

2.6 Measurement events

