



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

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Doc. 6.09  
(6.III.2014)

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**6th GRUAN Implementation-  
Coordination Meeting (ICM-6)**

Session 6

Greenbelt, USA

10 March – 14 March 2014

## GRUAN Station Report for Manus

*(Submitted by Lead Centre)*

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### Summary and Purpose of Document

Report from the GRUAN station Manus for the period Nov 2012 to Oct 2013.

*Note: For all ARM sites, the station report from the site representative is presented in Doc 6.06: "GRUAN Station Report for Lamont (SGP)".*

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# GRUAN Station Report for Manus (MAN), 2013

Reported time range is Nov 2012 to Oct 2013

Created by the Lead Centre

Version from 2014-02-20

## 1 General GRUAN station information

Info	Value
Station name	Manus
Unique GRUAN ID	MAN
Geographical position	-2.0600 °S, 147.4200 °E, 6.0 m
Operated by	ARM   US DOE Atmospheric Radiation Measurement (ARM) Program
Main contact	Sisterson, Doug
WMO no./name	-
Operators	current 0, change +0 / -0
Sounding Site	1
GNSS	1

### 1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
MAN-GN-01	GNSS	0	0	not scheduled
MAN-RS-01	Sounding Site	1	834	114.25 %

### 1.2 General comments from Lead Centre

#### 1.2.1 General

ARM site.

Ground check procedures for the Vaisala RS92 launches at the Manus site do not appear to follow standard operating procedures. It is requested, that the sonde preparation at SGP follow standard Vaisala protocol, use a well calibrated station pressure sensor as reference for the Vaisala RS92 sonde re-calibration, and use the proper GC-25 recalibration for temperature and humidity.

It is strongly recommended that the site uses a manufacturer independent ground check for the Vaisala radiosonde.

ARM is using an automated routine to transmit data and raw data. ARM is requested to inform the Lead Centre of all upcoming changes in equipment, launch schedule or procedures to be able to update the metadata database.

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## 2 System: GNSS Site SA42 (MAN-GN-01)

<b>Info</b>	<b>Value</b>
System name	GNSS Site SA42
Unique GRUAN ID	MAN-GN-01
System type	GNSS (GN - GNSS)
Geographical position	-2.0609 °S, 147.4253 °E, 85.8 m
Operated by	ARM   US DOE Atmospheric Radiation Measurement (ARM) Program
Instrument contact	Sisterson, Doug
Started at	-
Defined setups	-
Possible streams	-

### 2.1 Lead Centre comments

#### 2.1.1 General

No GNSS dataflow to GRUAN LC as yet.

### 3 System: Balloon-Borne Sounding System (SONDE) (MAN-RS-01)

Info	Value
System name	Balloon-Borne Sounding System (SONDE)
Unique GRUAN ID	MAN-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	-2.0600 °S, 147.4300 °E, 4.0 m
Operated by	ARM   US DOE Atmospheric Radiation Measurement (ARM) Program
Instrument contact	Sisterson, Doug
Started at	-
Defined setups	1 (ROUTINE)
Possible streams	RS92

#### 3.1 Lead Centre comments

##### 3.1.1 Dataflow

Dataflow is running fully automated from the ARM Archive to the GRUAN LC. Launch metadata are not checked manually. Equipment changes (e.g. balloon, unwinder, ...) are not recorded.

As a consequence it is essential that the Lead Centre is notified of all upcoming changes to be able to maintain a correct metadata record. (This comment applies to all ARM sites in GRUAN.)

##### 3.1.2 Data quality

GC25 ground check corrections are NOT within expected limits. The corrections for pressure, temperature and relative humidity are largely around 0.0, which is untypical for this system. A possible cause could be that the radiosonde data themselves were used as reference value.

Often the ground check is missing all together. These soundings cannot be processed and receive a GRUAN label 'rejected'.

Most measurements pass GRUAN Quality Control routines with a 'checked' label, largely due to suspect ground checks and uncertainty inconsistencies in pressure and humidity.

#### 3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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##### 3.2.1 Stream: RS92

RS92		834	834	
RS92-RAW	001		825	
RS92-GDP	001		744	
RS92-GDP	002		518	86

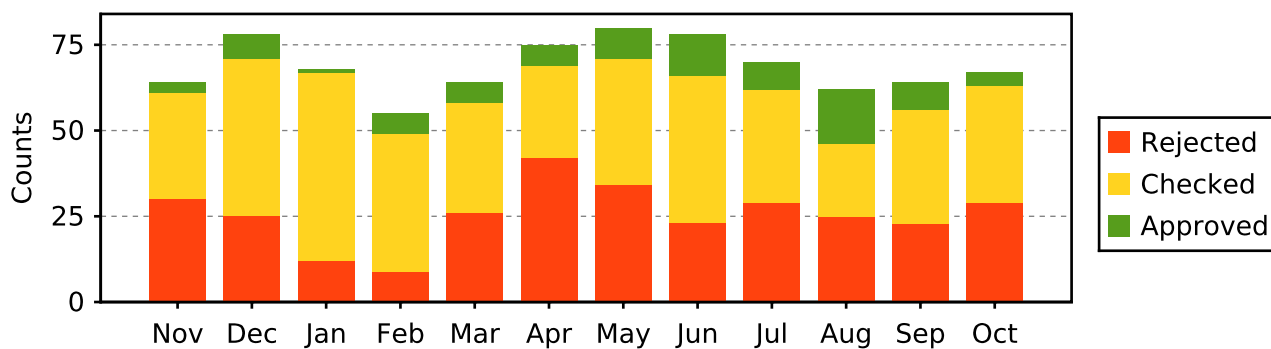
#### 3.3 Data quality of current GRUAN data products

Month	Count	GRUAN Data Quality			Issues				
		Approved	Checked	Rejected	Meta-data	Process.	Press	Temp	RH

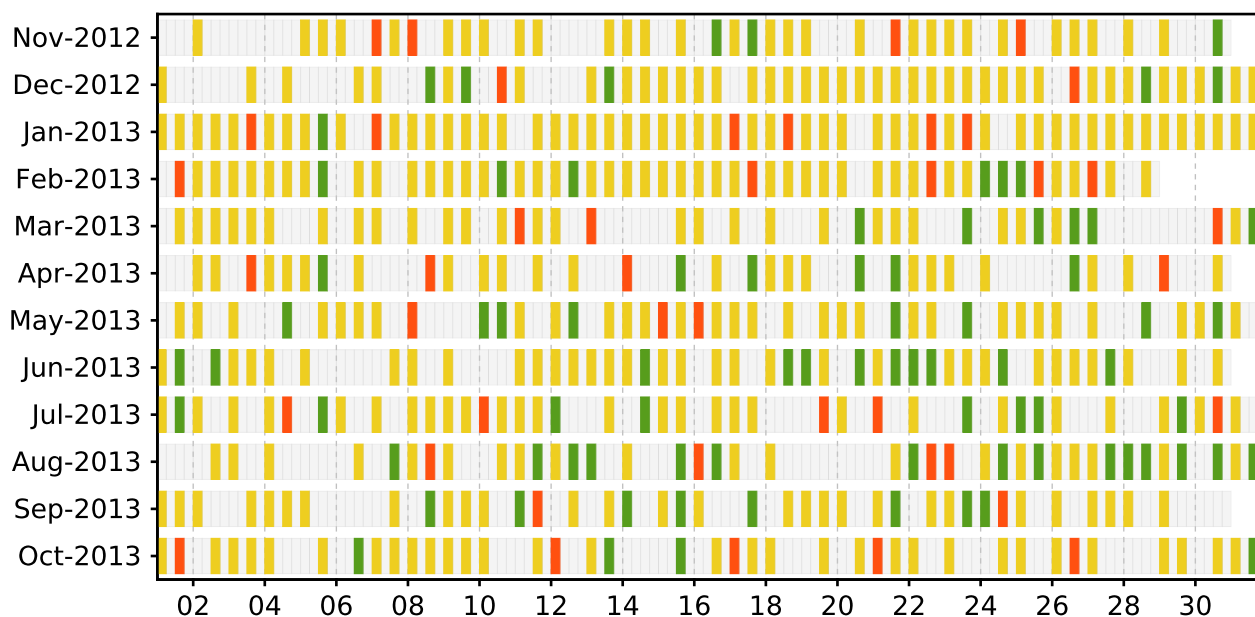
3.3.1 Stream: RS92 (Product: RS92-GDP-002)

Nov 12	64	3	31	30		25	29	10	58
Dec 12	78	7	46	25		21	27	11	69
Jan 13	68	1	55	12		5	8	2	63
Feb 13	55	6	40	9		4	7	5	48
Mar 13	64	6	32	26		23	25	13	59
Apr 13	75	6	27	42		34	38	21	67
May 13	80	9	37	34		28	34	18	67
Jun 13	78	12	43	23		23	26	13	71
Jul 13	70	8	33	29		23	27	13	61
Aug 13	62	16	21	25		21	22	8	47
Sep 13	64	8	33	23		20	23	8	58
Oct 13	67	4	34	29		24	24	7	59
	<b>825</b>	<b>86</b>	<b>432</b>	<b>307</b>		<b>251</b>	<b>290</b>	<b>129</b>	<b>727</b>

Data quality statistic of stream RS92



Schedule data quality of stream RS92



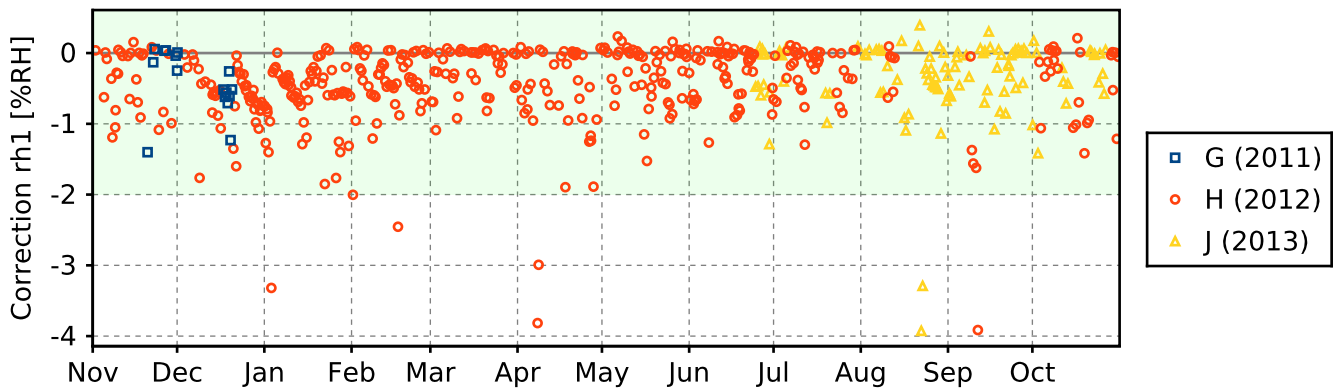
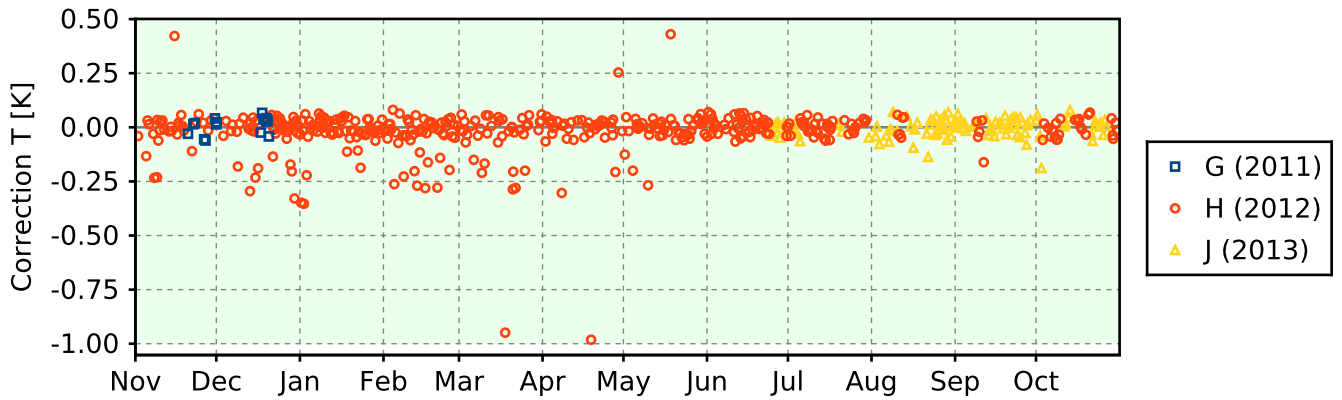
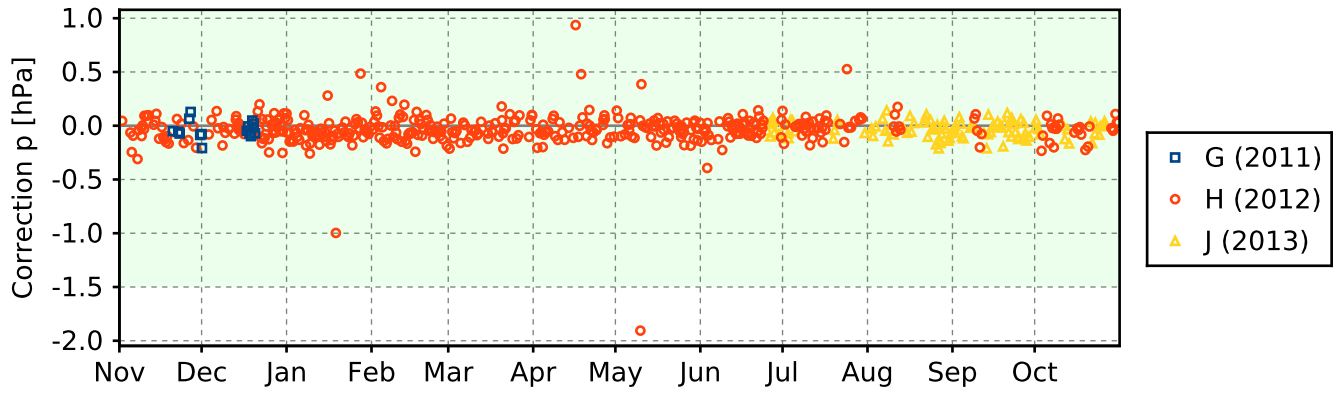
3.4 Instrument combinations of MAN-RS-01

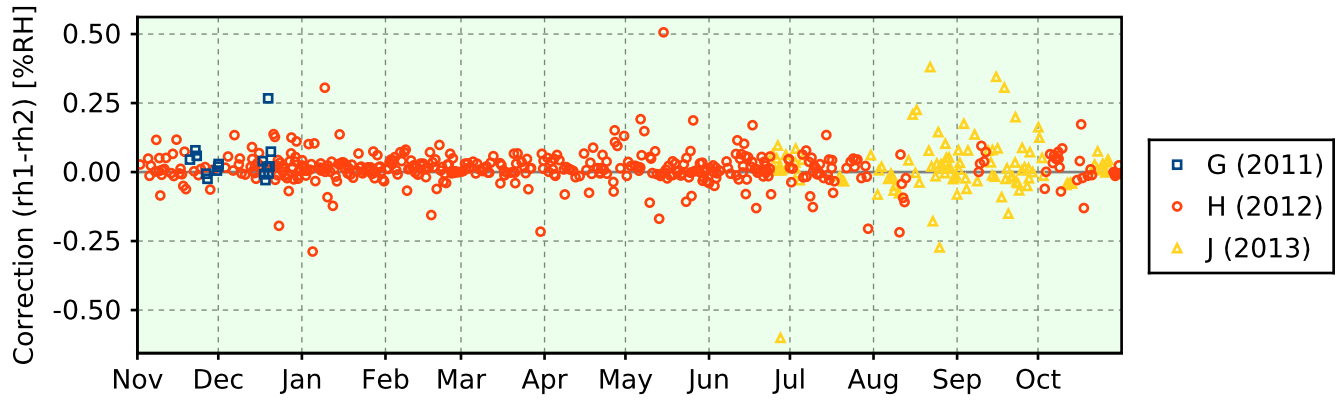
Count	Instrument combination
834	RS92

### 3.5 Instrument ground check

#### 3.5.1 Stream: RS92

##### 3.5.1.1 GroundCheck: GC25





3.5.1.2 GroundCheck: SHC

