



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

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**6th GRUAN Implementation-
Coordination Meeting (ICM-6)**
Greenbelt, USA
10 March – 14 March 2014

Session 6

GRUAN Station Report for Ny-Ålesund

(Submitted by Marion Maturilli)

Summary and Purpose of Document

Report from the GRUAN station Ny-Ålesund for the period Feb 2013 to Feb 2014.



GRUAN Station Report for Ny-Ålesund

Reporting for the period Feb 2013 to Feb 2014

Date: 25-Feb-2014

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Overview

The Ny-Ålesund radiosonde program was operated as scheduled, launching daily RS92 radiosondes provided to GRUAN using the RSLaunchClient. During campaign periods, the launch frequency has been higher, resulting in an overshoot of the planned schedule. GRUAN guidelines are followed, and additional ground check procedures (100% humidity chamber, additional ambient condition measurement) are performed prior to each launch.

RSLaunchClient is also used for the once weekly ozone sondes, and the data stream to the GRUAN Lead Centre is similarly established. We expect to contribute to the GRUAN ozone sonde data stream once the formal data product has been defined.

The site has started the use of CFH sondes, with a planned schedule of 1 launch every 2 month. The launch staff has been introduced to the instrumentation and preparation procedures at the GRUAN Lead centre in August 2013. After setting up the receiving system and software at Ny-Ålesund, the first test launch took place in September 2013. Adjusting the standard CFH payload and optimizing the procedures to the local research base conditions, the regular CFH sounding program has started in January 2014. We expect to contribute to the GRUAN CFH data stream once the formal data product has been defined.

Dataflow of Ny-Ålesund GNSS data to the GRUAN Lead Centre and the GRUAN GNSS processing centre at GFZ has started in September 2013. The current dataflow includes manufacturer raw data, converted raw data (RINEX) and instrument logs, containing all equipment changes.

Change and change management

The CFH measurement program has initiated. After a test phase in 2013, we are now scheduled to have 1 launch every 2 month from January 2014 onwards.

A new overwintering team took over at the station in May 2013. They had an introduction to radio-sounding and to GRUAN at the Lead Centre in March 2013, and were introduced and trained on site in April 2013. The same procedure will apply to the next overwintering team. Other personal involved in campaign activities is trained on site.

During the reporting period, no changes have been applied to the operating procedures, instruments, data processing algorithms or operating environments of instruments.

Resourcing

Currently no funding problems.

Resource challenges have been faced due to the remote location in receiving cryogen for CFH measurements, but the problems are known now and will be avoided in the future.

Site assessment and certification

Already certified.

GRUAN related research

In September 2013, a 2 week intensive campaign with 6 radiosondes per day has been conducted at the station. Primarily intended for a German-Japanese cooperation project on data assimilation, the high frequency of radiosonde profiles is a valuable data source for the study of measurement redundancy at Ny-Ålesund, involving microwave radiometry and GNSS.
No GRUAN related publication so far.

WG-GRUAN interface

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Items for ICM-6 plenary discussions

Introduction of the new Vaisala RS41 radiosonde. When will GRUAN be ready to import RS41 raw data files ? Will there be official GRUAN recommendations for instrumental change ?

Future plans

In June 2014, the Meteomet project will install a calibration chamber in Ny-Ålesund and calibrate meteorological sensors used for BSRN and GRUAN procedures.
CFH measurement optimization will be finalized to a Ny-Ålesund CFH standard payload.



GRUAN Station Report for NyAlesund (NYA), 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	NyAlesund
Unique GRUAN ID	NYA
Geographical position	78.9200 °N, 11.9400 °E, 5.0 m
Operated by	AWI Alfred-Wegener-Institut für Polarforschung, part of: HELMHOLTZ Helmholtz-Gemeinschaft
Main contact	Maturilli, Marion
WMO no./name	-
Operators	current 11, change +3 / -3
Sounding Site	1
GNSS	1

1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
NYA-GN-01	GNSS	1	0	0.00 %
NYA-RS-01	Sounding Site	4	455	108.85 %

1.2 General comments from Lead Centre

1.2.1 General

Good communications between station and GRUAN LC.

1.2.2 GTS

This site regularly sends PTU measurements in the GTS (FM35 format, once per day).

2 System: GNSS Site NYA2 (NYA-GN-01)

Info	Value
System name	GNSS Site NYA2
Unique GRUAN ID	NYA-GN-01
System type	GNSS (GN - GNSS)
Geographical position	78.5136 °N, 11.5212 °E, 49.1 m
Operated by	GFZ Deutsches GeoForschungsZentrum GFZ, part of: HELMHOLTZ Helmholtz-Gemeinschaft
Instrument contact	Ramatschi, Markus
Started at	2000-03-13
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 has started in September 2013. This GNSS station is one of two test sites to implement the GNSS dataflow in GRUAN. The current dataflow includes manufacturer raw data, converted raw data (RINEX) and instrument logs, containing all equipment changes.

3 System: Radiosonde Launch Site (NYA-RS-01)

Info	Value
System name	Radiosonde Launch Site
Unique GRUAN ID	NYA-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	78.9230 °N, 11.9227 °E, 15.7 m
Operated by	AWI-POTSDAM Forschungsstelle Potsdam, part of: AWI Alfred-Wegener-Institut für Polarforschung, part of: HELMHOLTZ Helmholtz-Gemeinschaft
Instrument contact	Maturilli, Marion
Started at	-
Defined setups	4 (ROUTINE, OZONE, FLASH, CFH)
Possible streams	CFH, ECC, RS92

3.1 Lead Centre comments

3.1.1 Dataflow

Sonde dataflow to the GRUAN LC running since April 2012. This dataflow includes streams of the Vaisala RS92-SGP, ECC Ozone sonde, CFH water vapour, and Internet IMET-1. All launches are promptly recorded using the RsLaunchClient.

3.1.2 Data quality

GC25 ground check corrections are within expected limits.

A manufacturer independent additional ground check using the Standard Humidity Chamber (SHC) is used. The data are being transmitted to and stored at the Lead Centre but have not yet been included in the standard processing routine.

In addition the site performs an additional ground check at ambient conditions in a shelter prior to launch, which is recorded and which can be analysed.

3.1.3 General

An intensive campaign was held in September 2013 with 6 soundings per day.

3.2 GRUAN data products

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

CFH		2	2	
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3.2.2 Stream: ECC

ECC		70	70	
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3.2.2 Stream: IMET1

IMET1		2	2	
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3.2.3 Stream: RS92

RS92		455	455	
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Product	Version	Soundings received	Available at LC	Distributed by NCDC
RS92-RAW	001		455	
RS92-GDP	001		449	
RS92-GDP	002		429	420

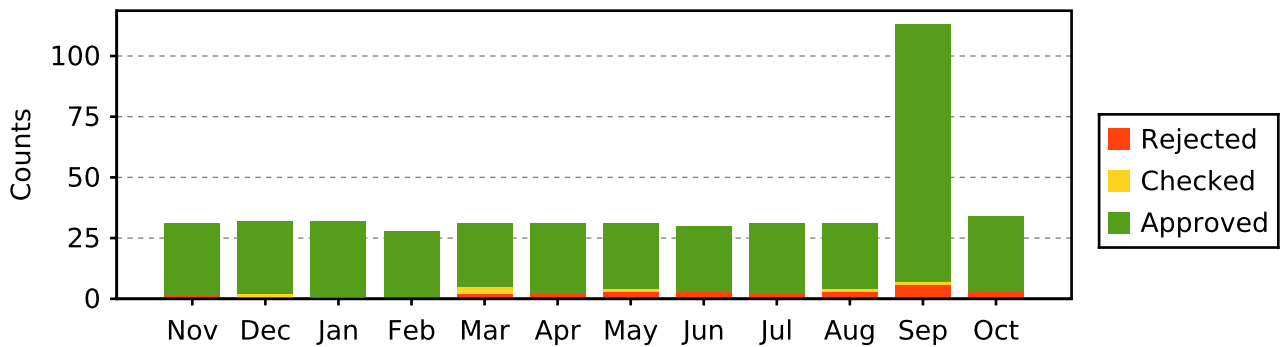
3.3 Data quality of current GRUAN data products

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

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

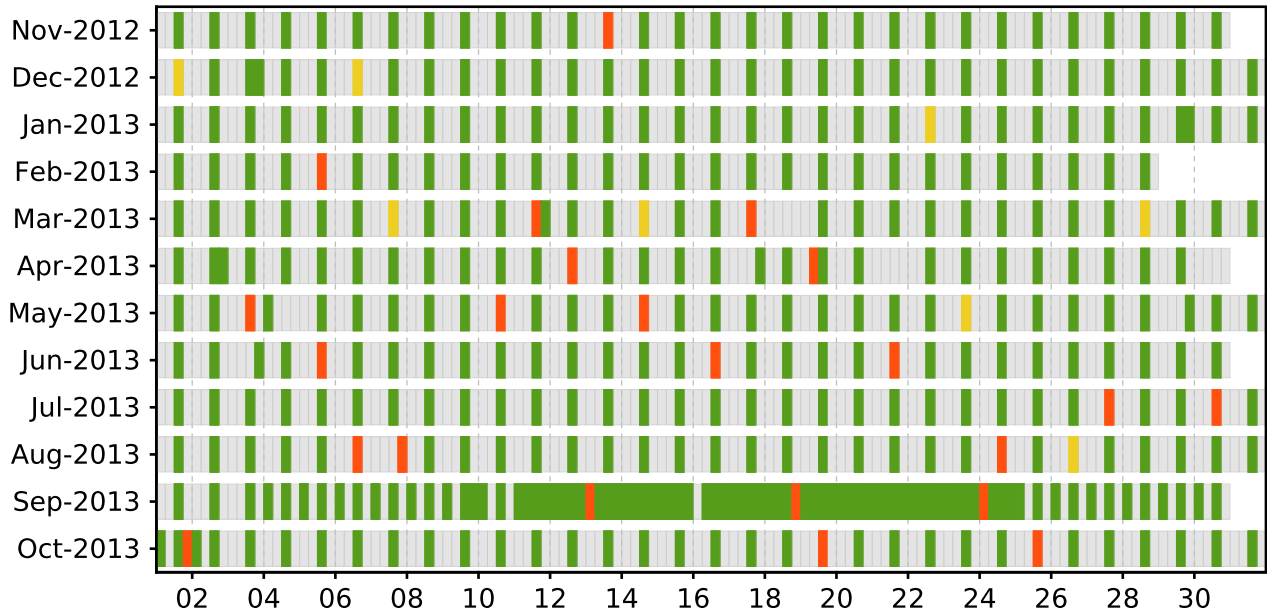
Nov 12	31	30		1						14
Dec 12	32	30	2				2			8
Jan 13	32	31	1				1			10
Feb 13	28	27		1			1			11
Mar 13	31	26	3	2			3			7
Apr 13	31	29		2			1			8
May 13	31	27	1	3			1	1		11
Jun 13	30	27		3			3			11
Jul 13	31	29		2			2			5
Aug 13	31	27	1	3			2	1		18
Sep 13	113	106	1	6			5	1		55
Oct 13	34	31		3			2			14
	455	420	9	26			23	3		172

Data quality statistic of stream RS92



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

Schedule data quality of stream RS92



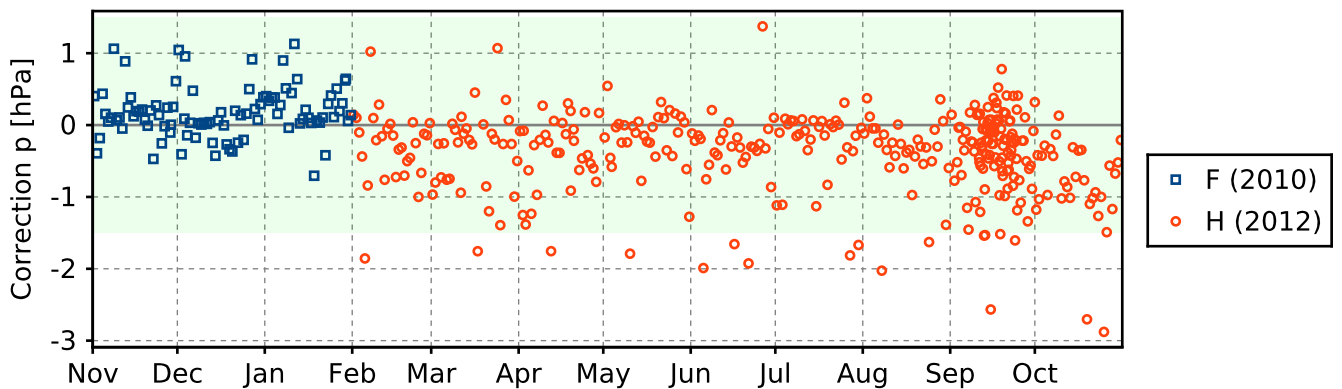
3.4 Instrument combinations of NYA-RS-01

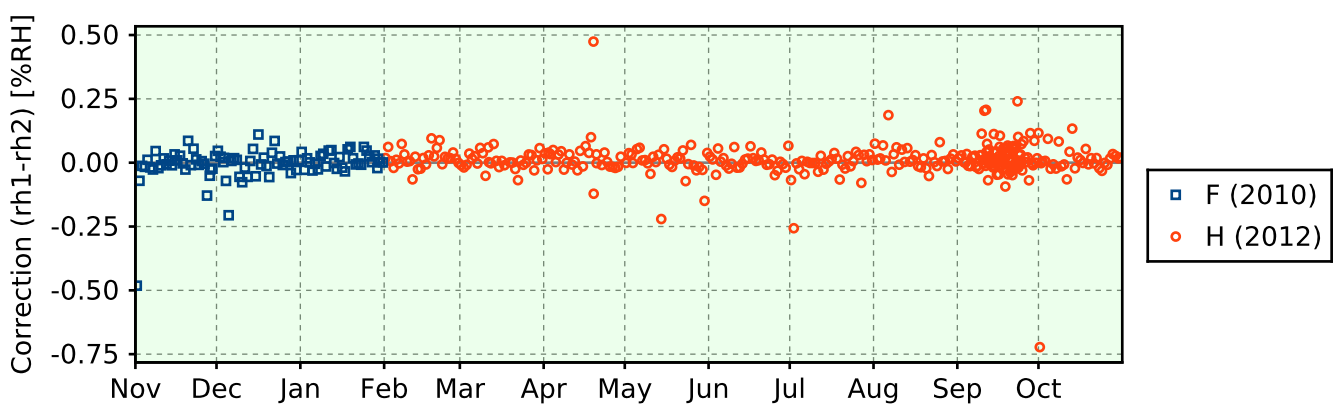
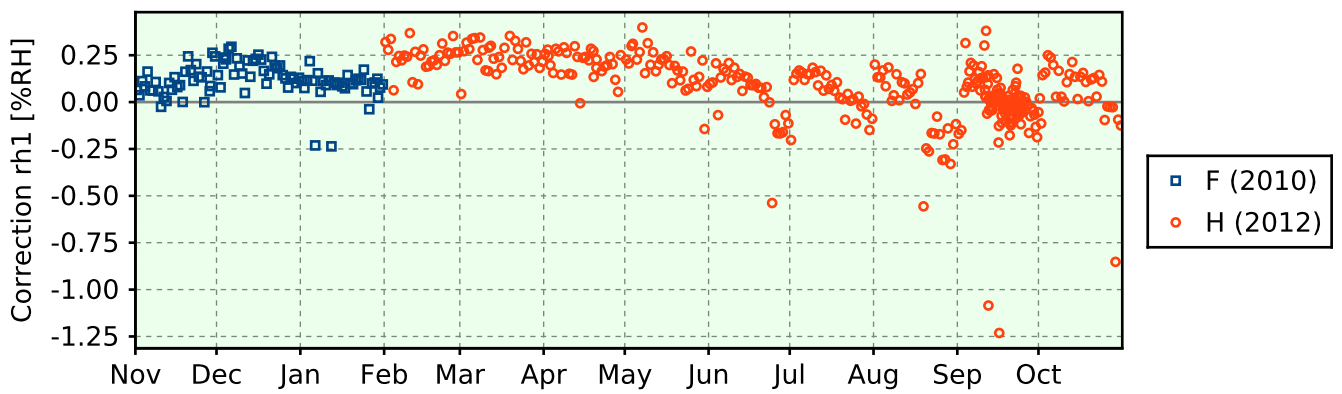
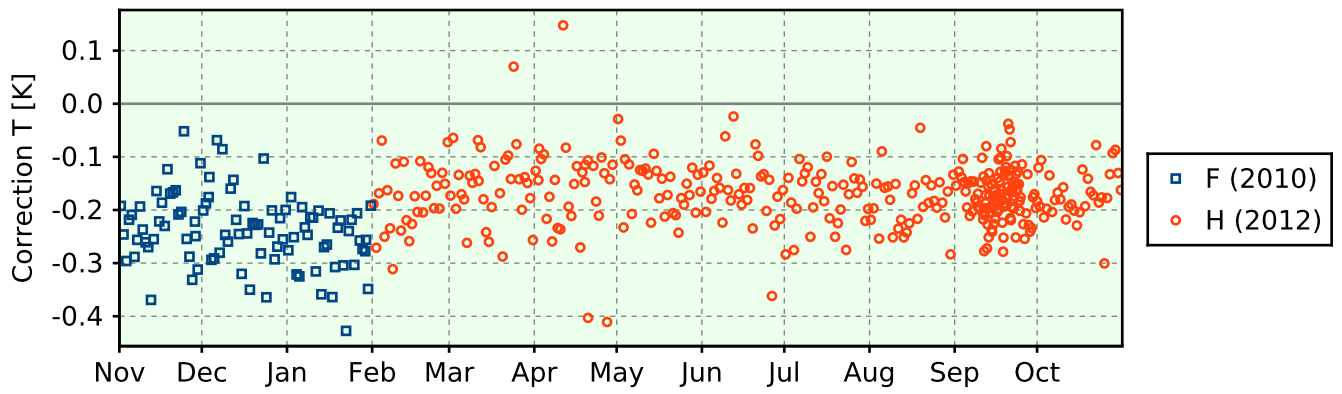
Count	Instrument combination
2	CFH, ECC, IMET1, RS92
68	ECC, RS92
385	RS92

3.5 Instrument ground check

3.5.1 Stream: RS92

3.5.1.1 GroundCheck: GC25





3.5.1.2 GroundCheck: SHC

