

## Site status and reports



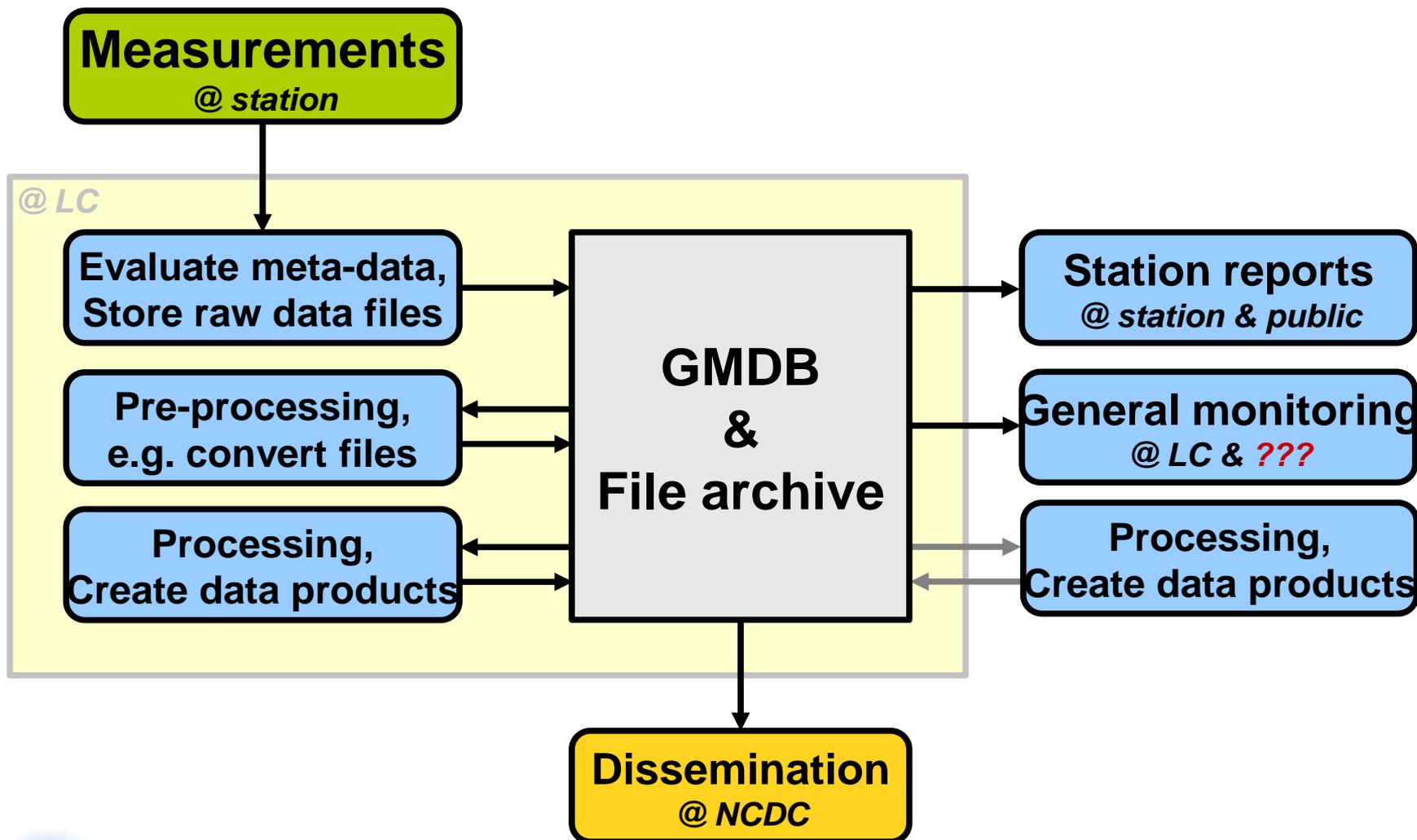
Ruud Dirksen,  
GRUAN Lead Center

DWD Meteorological Observatory Lindenberg

ICM-7  
25 February 2015

- Organization of GRUAN data stream (data base)
- Data flow from sites “GRUAN DNA”
- LC reporting

# GRUAN data flow



Graphical representation of activity in last year

Generated for each sounding system, currently RS92 only

Available at GRUAN website

Legend:

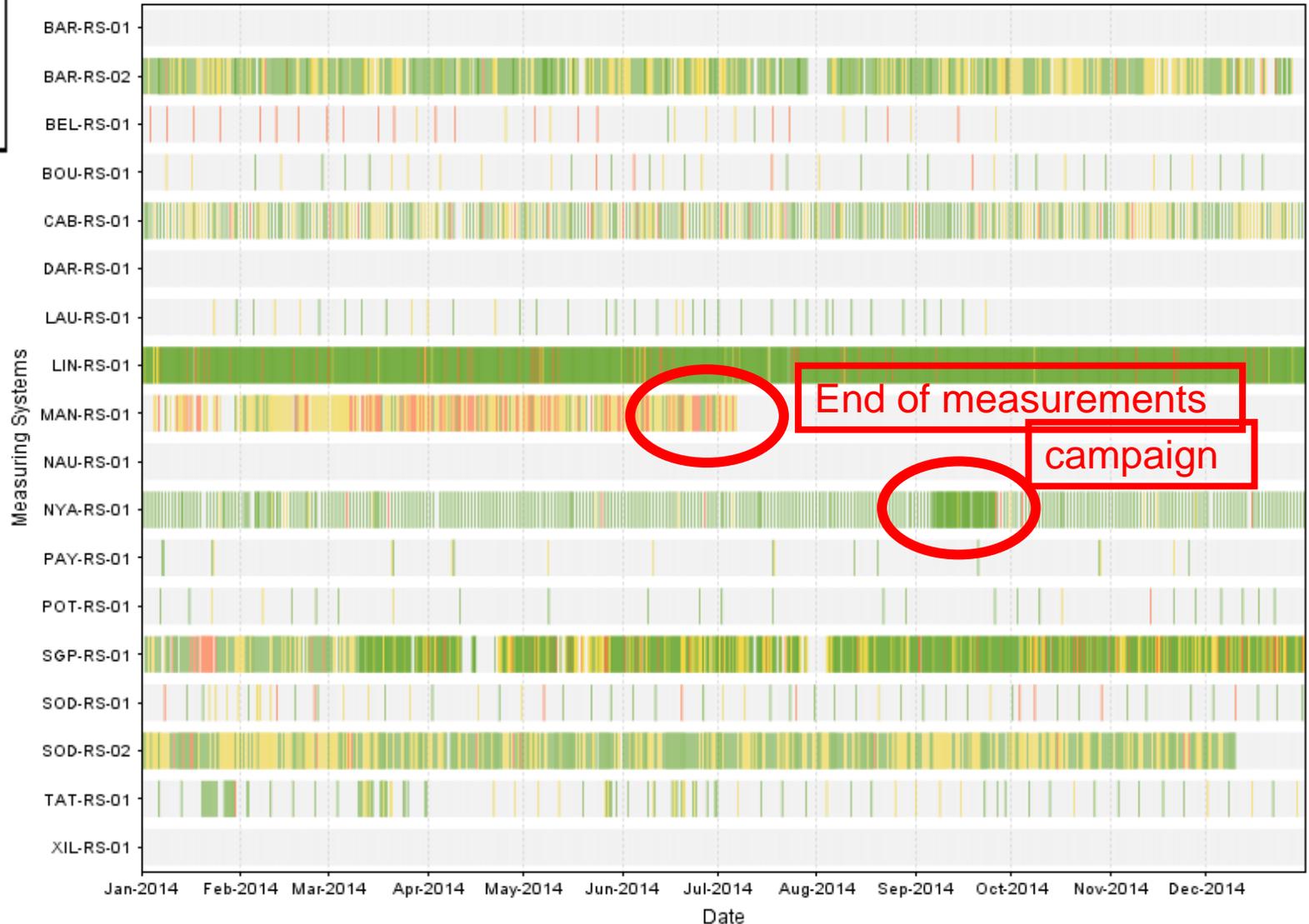
	Rejected
	Checked
	Approved

No product, processing failed

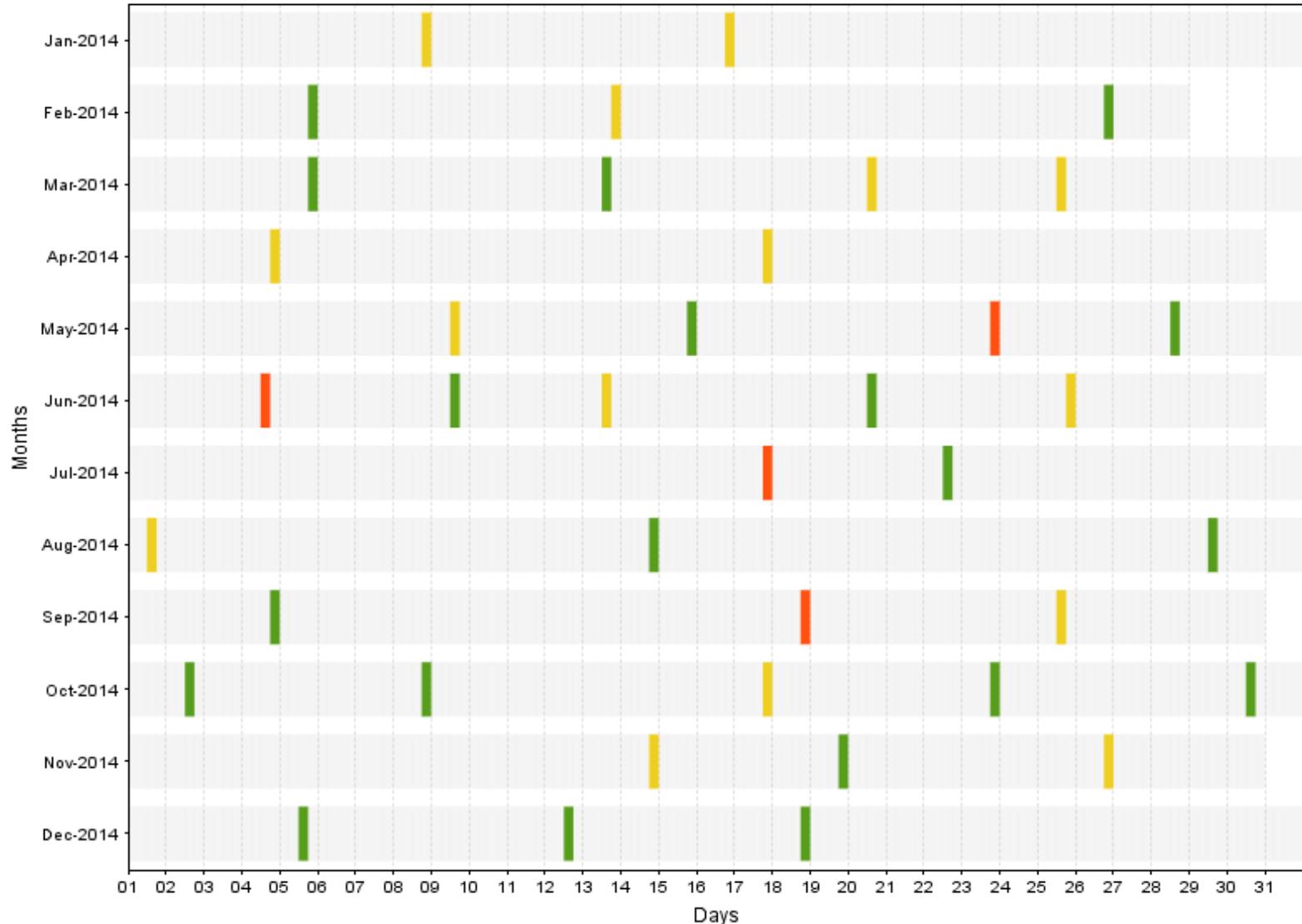
Failed QC, available upon request

Available at NCDC

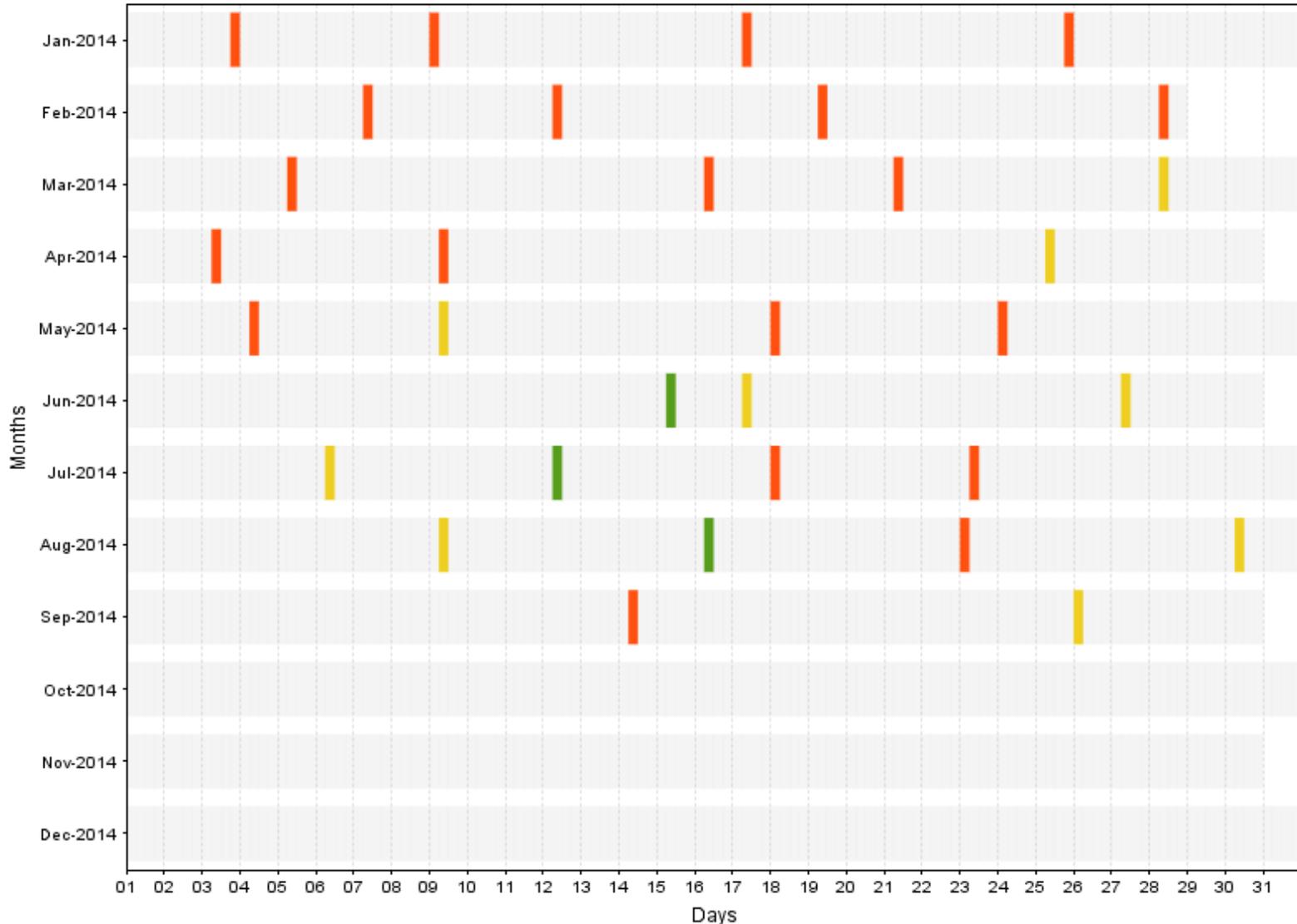
## Performance of GRUAN Data Product RS92-GDP v2



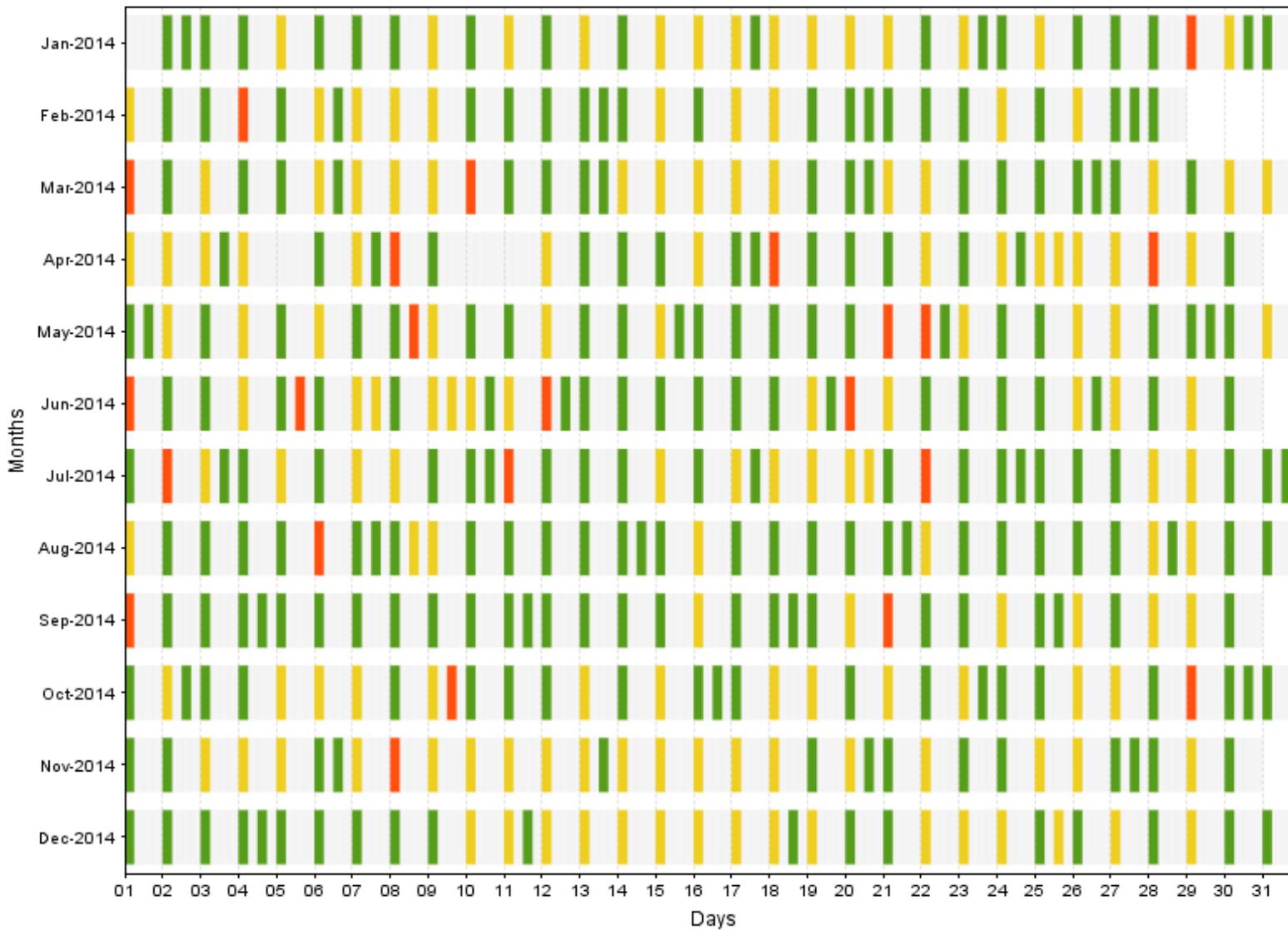
## Performance of GRUAN Data Product RS92-GDP v2 at BOU-RS-01



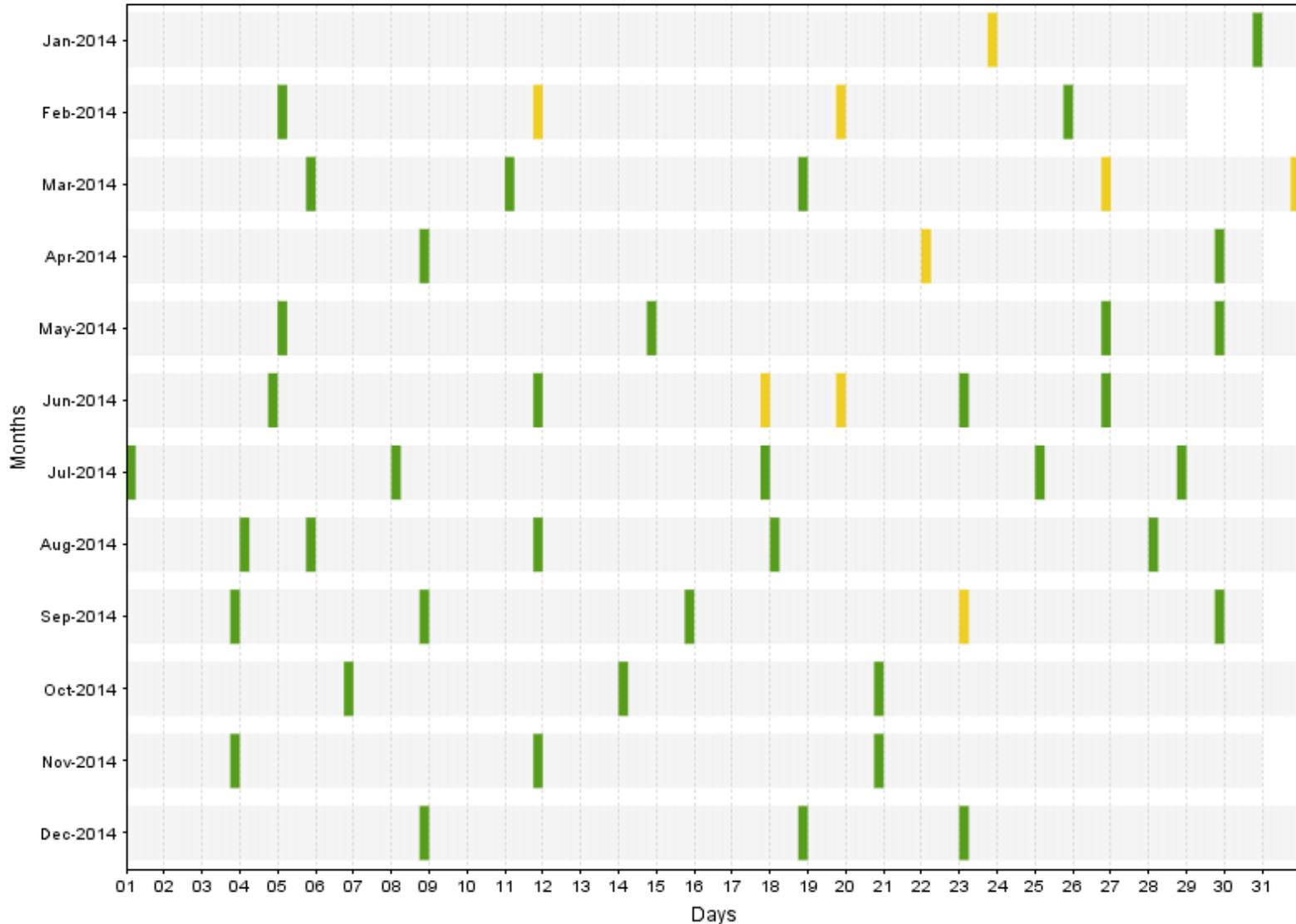
## Performance of GRUAN Data Product RS92-GDP v2 at BEL-RS-01



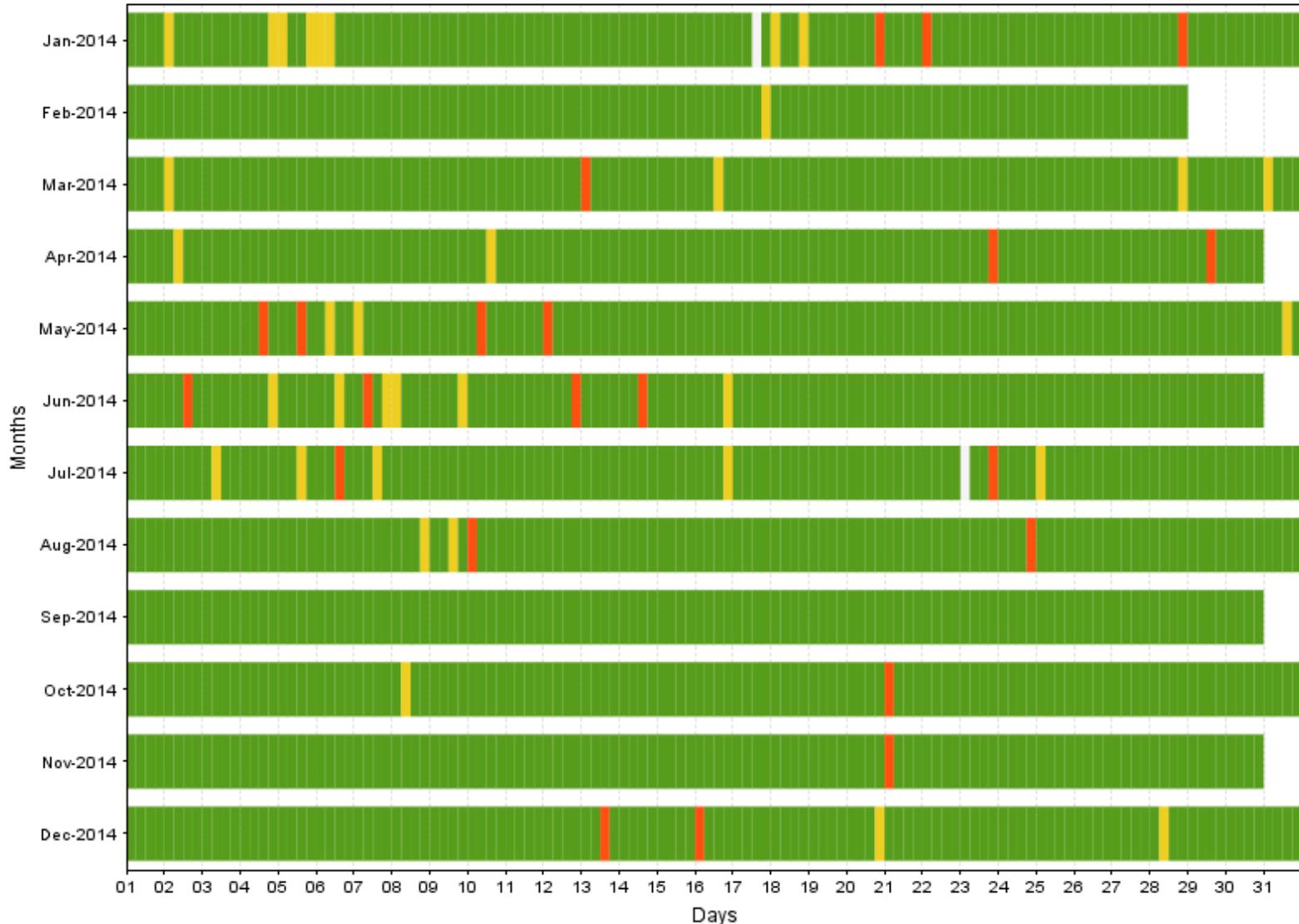
## Performance of GRUAN Data Product RS92-GDP v2 at CAB-RS-01



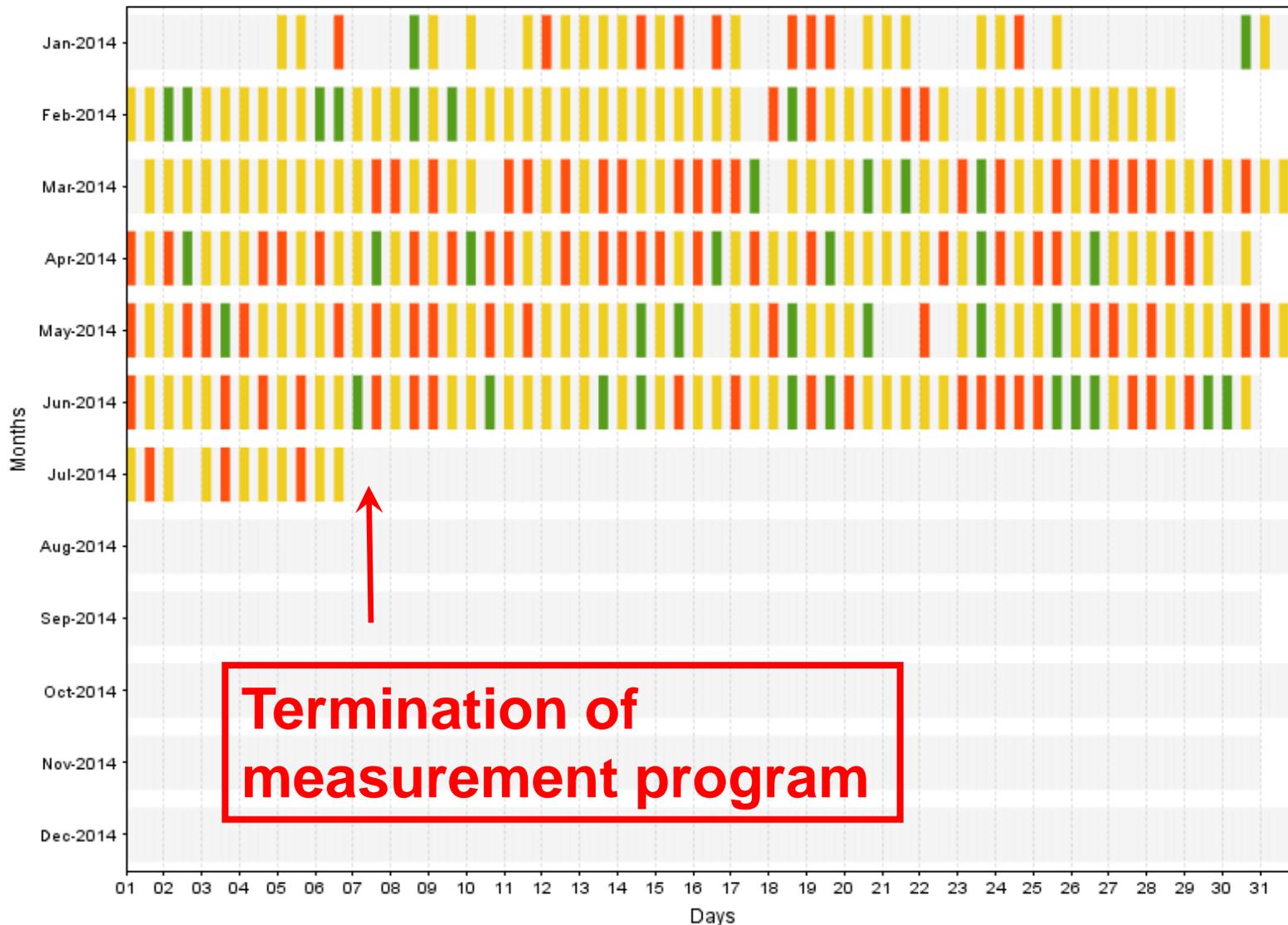
## Performance of GRUAN Data Product RS92-GDP v2 at LAU-RS-01



## Performance of GRUAN Data Product RS92-GDP v2 at LIN-RS-01

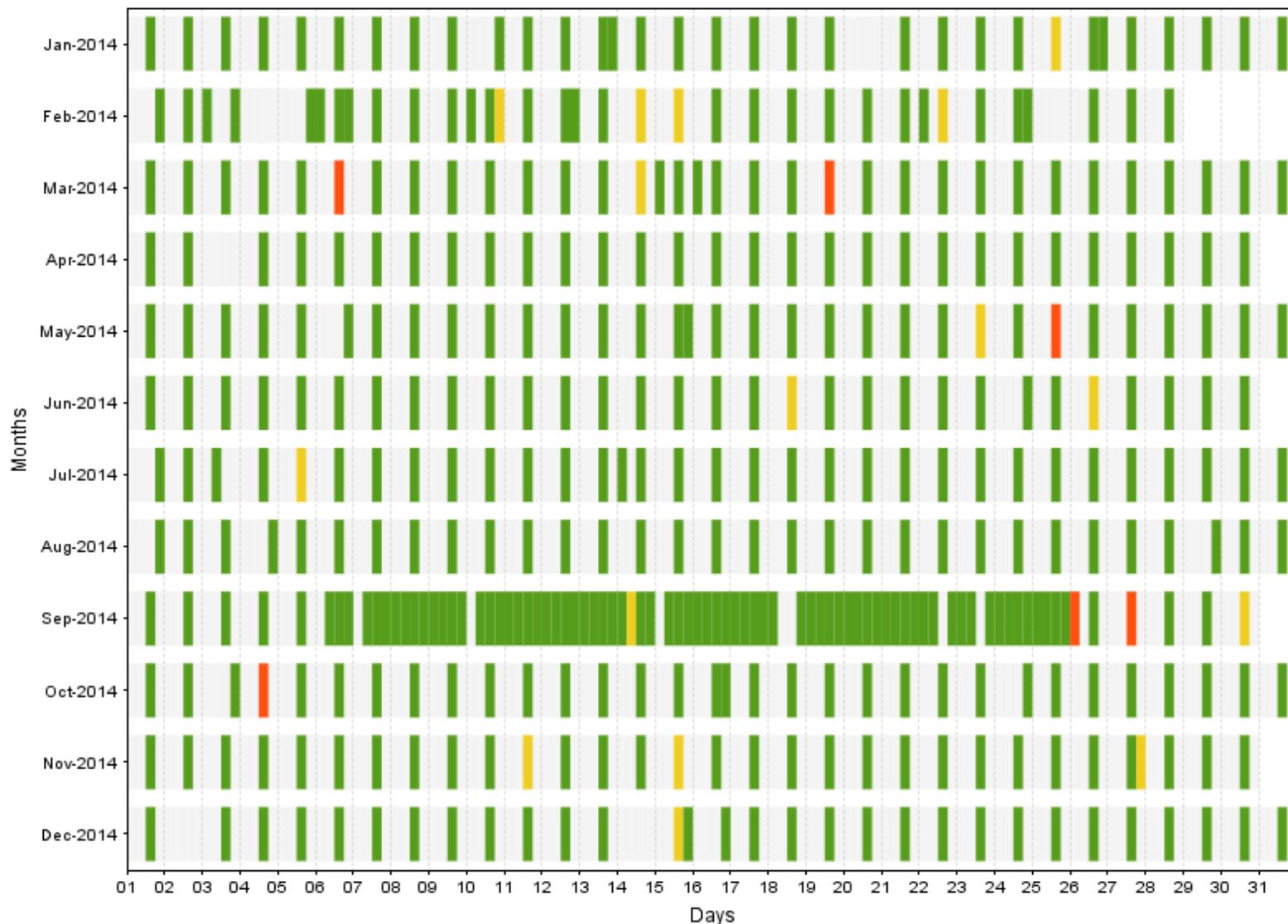


## Performance of GRUAN Data Product RS92-GDP v2 at MAN-RS-01

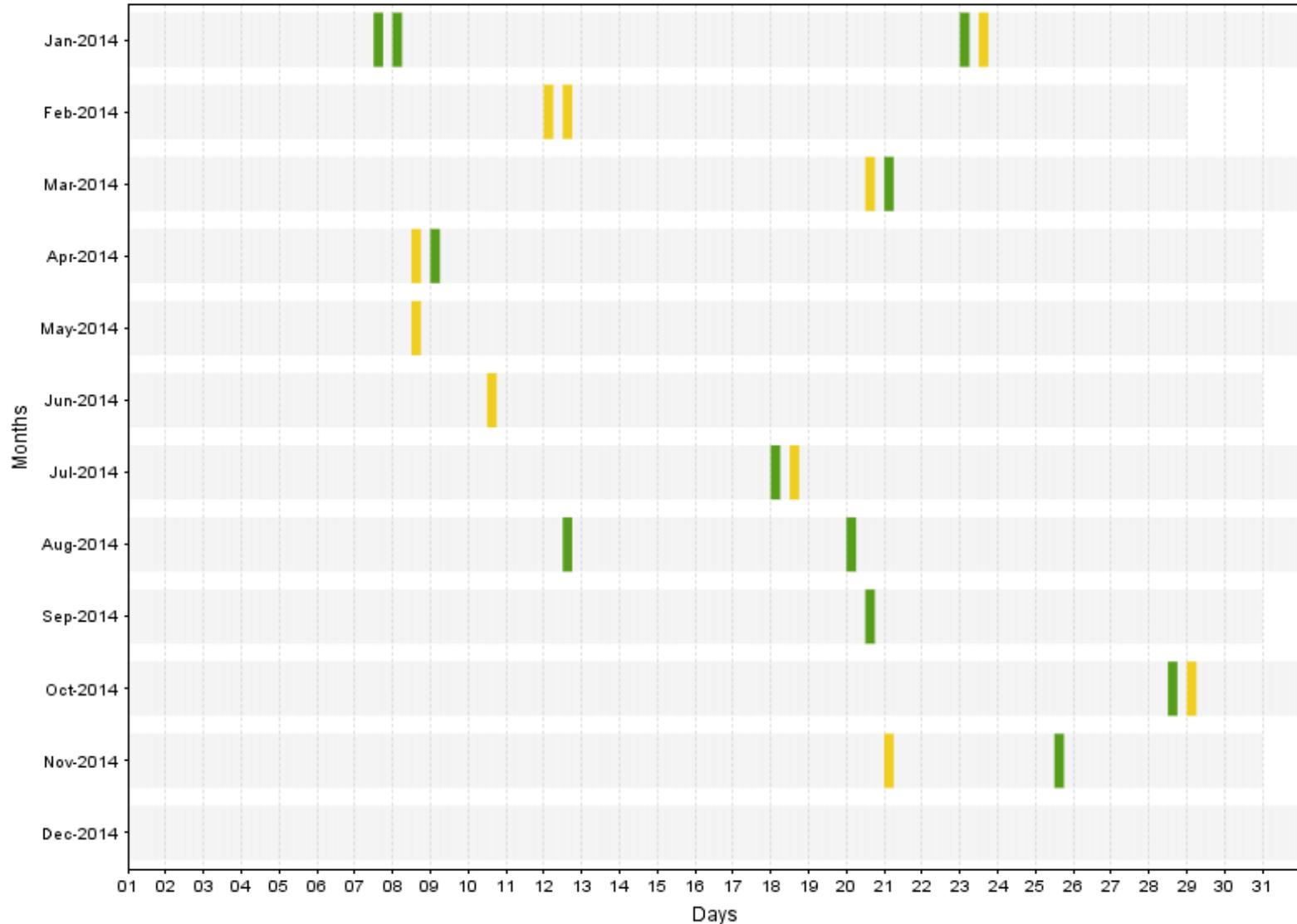


**Termination of  
measurement program**

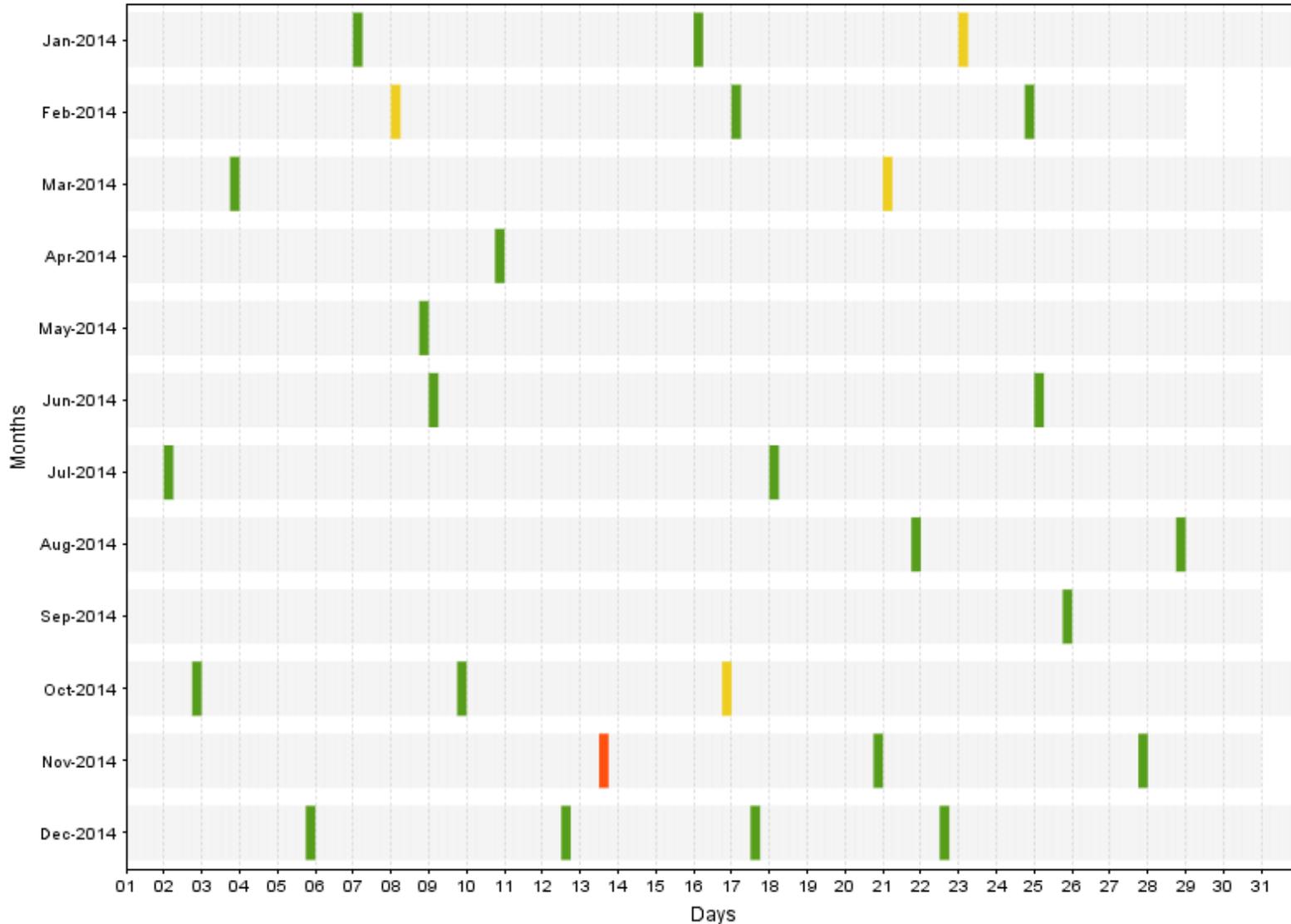
## Performance of GRUAN Data Product RS92-GDP v2 at NYA-RS-01



## Performance of GRUAN Data Product RS92-GDP v2 at PAY-RS-01



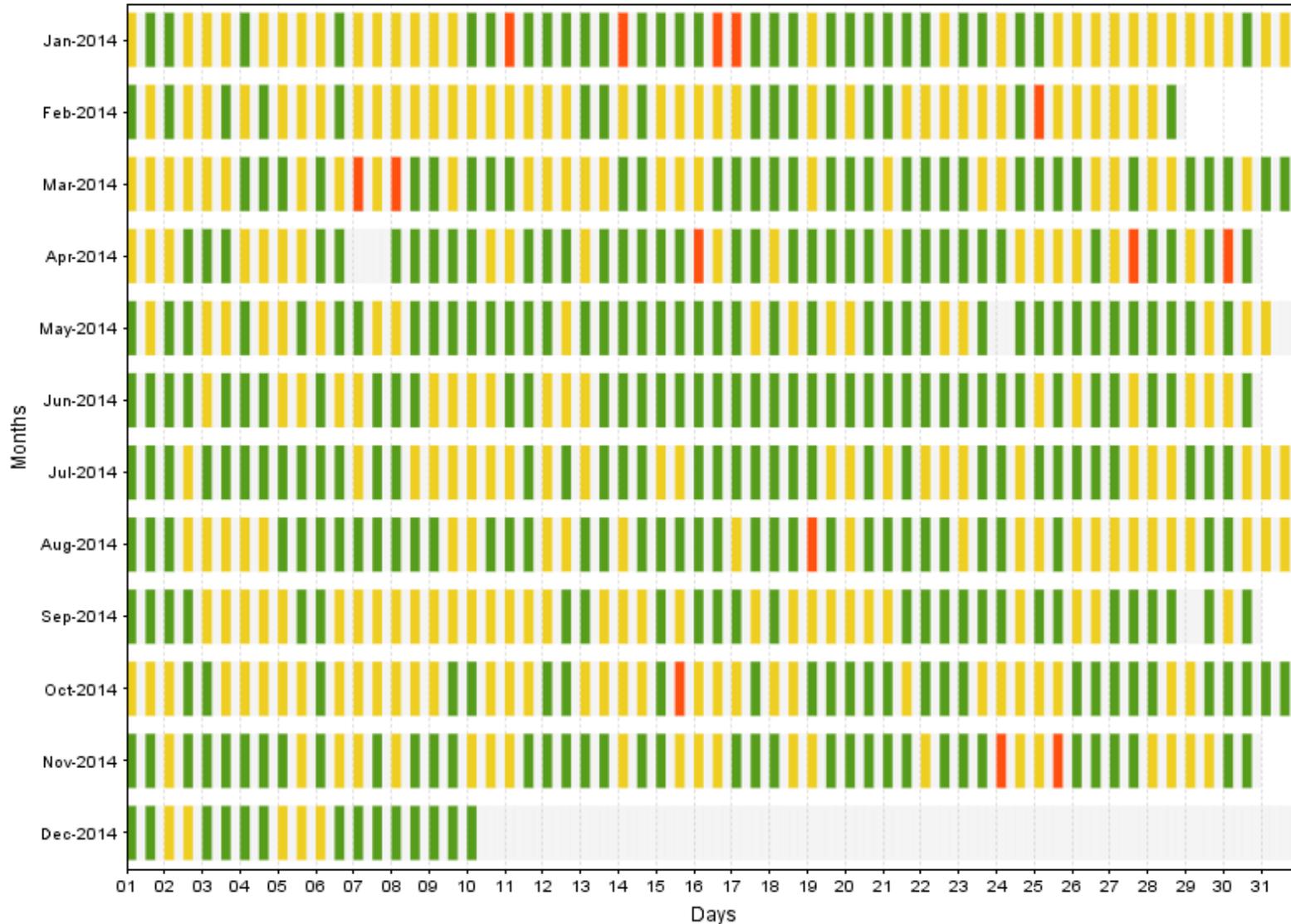
## Performance of GRUAN Data Product RS92-GDP v2 at POT-RS-01



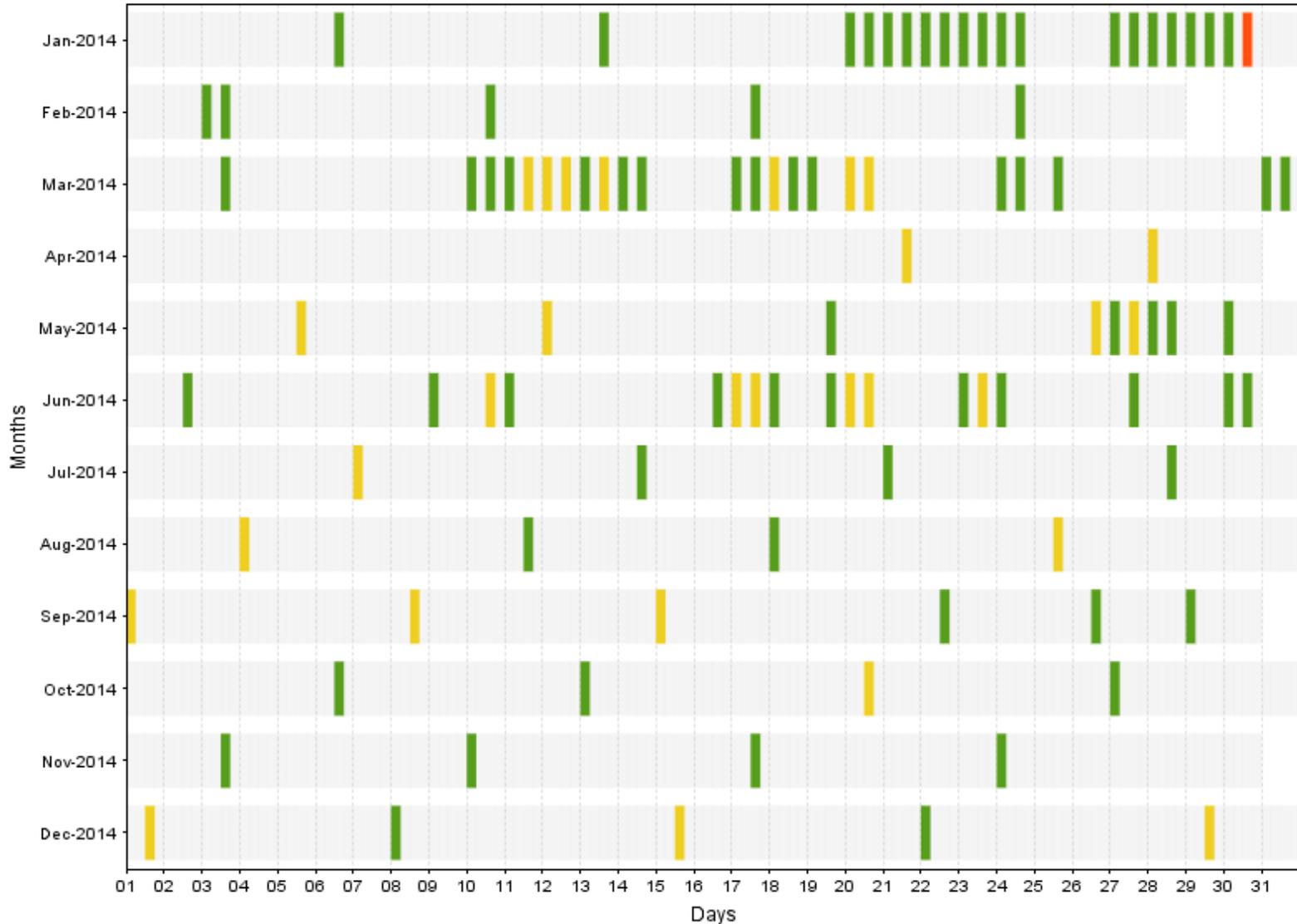
## Performance of GRUAN Data Product RS92-GDP v2 at SGP-RS-01



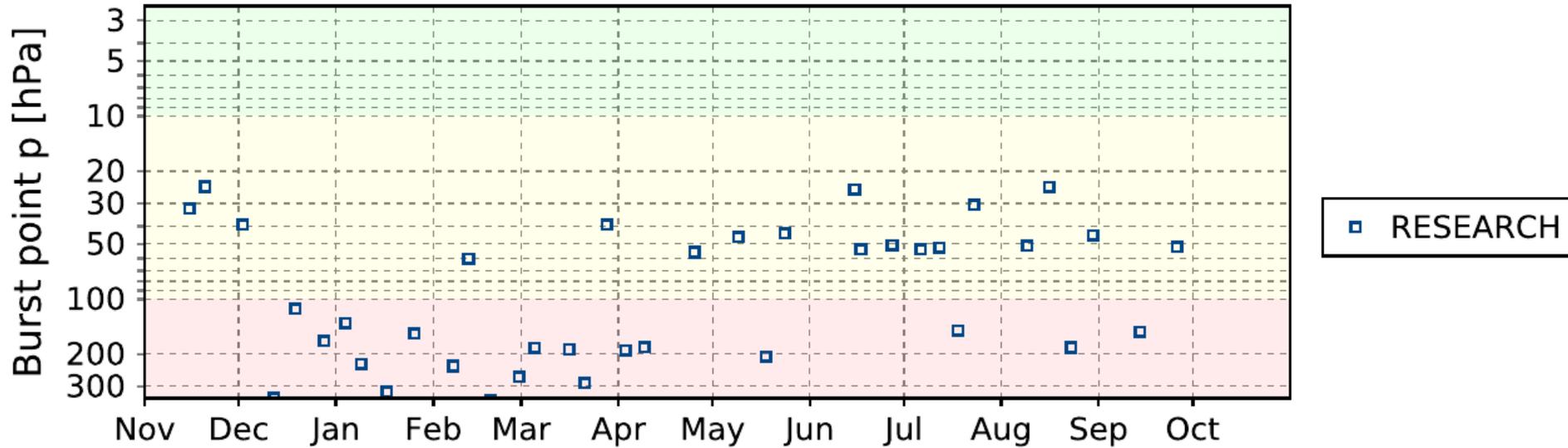
## Performance of GRUAN Data Product RS92-GDP v2 at SOD-RS-02



## Performance of GRUAN Data Product RS92-GDP v2 at TAT-RS-01

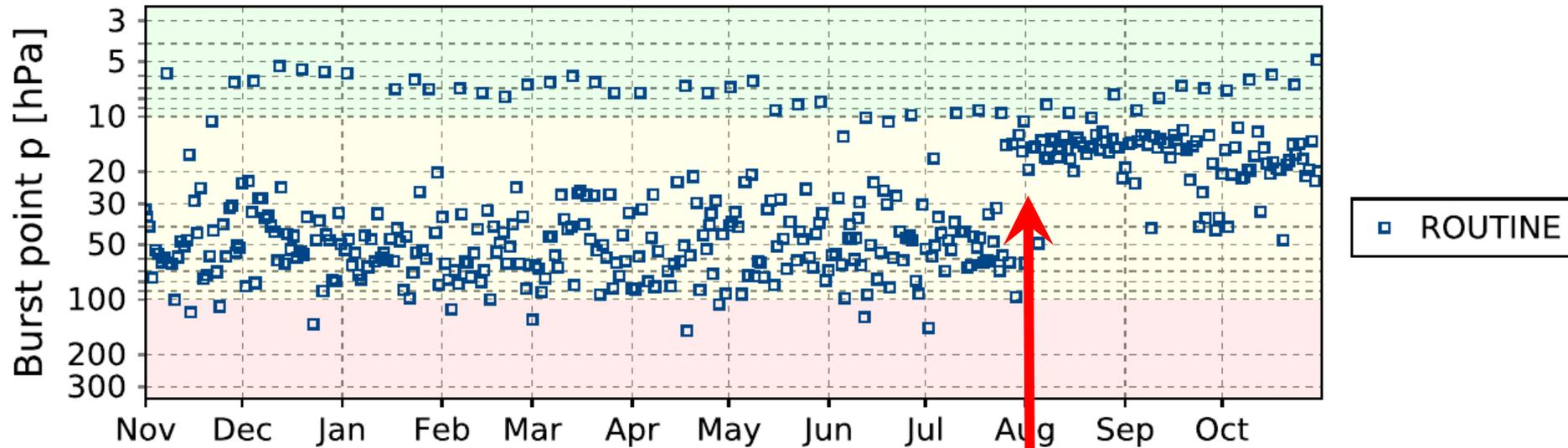


# Burst altitudes-1



Focus: Tropospheric O<sub>3</sub>

# Burst altitudes-2

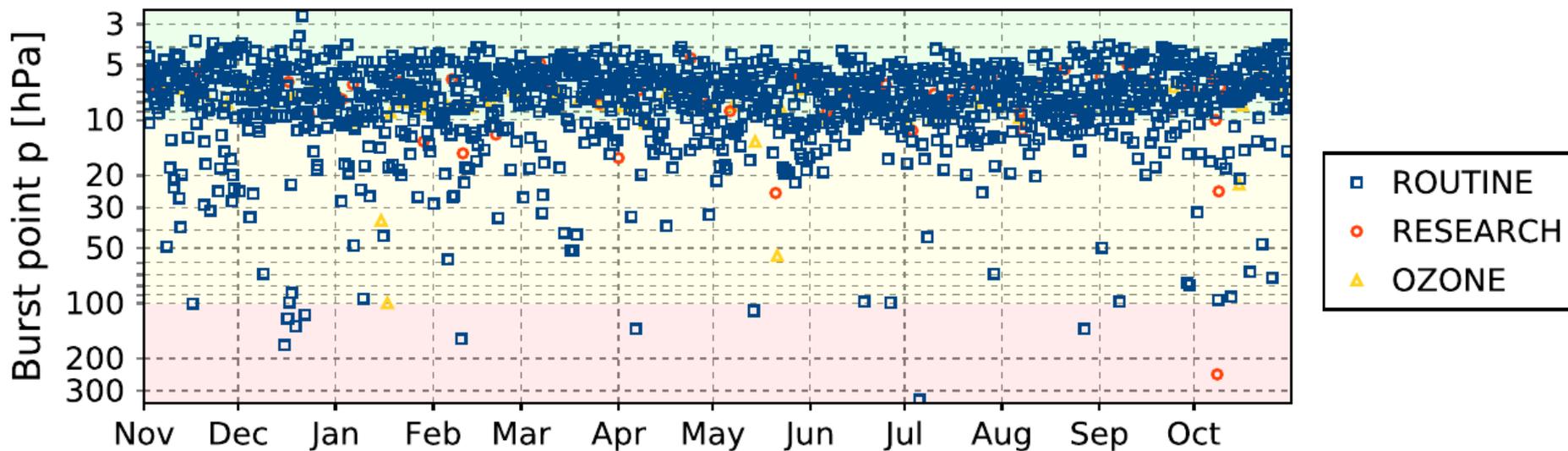


Different balloons for operational and Ozone soundings

Change of balloon for operational soundings

All marked "routine" -> Metadata!

# Burst altitudes-3



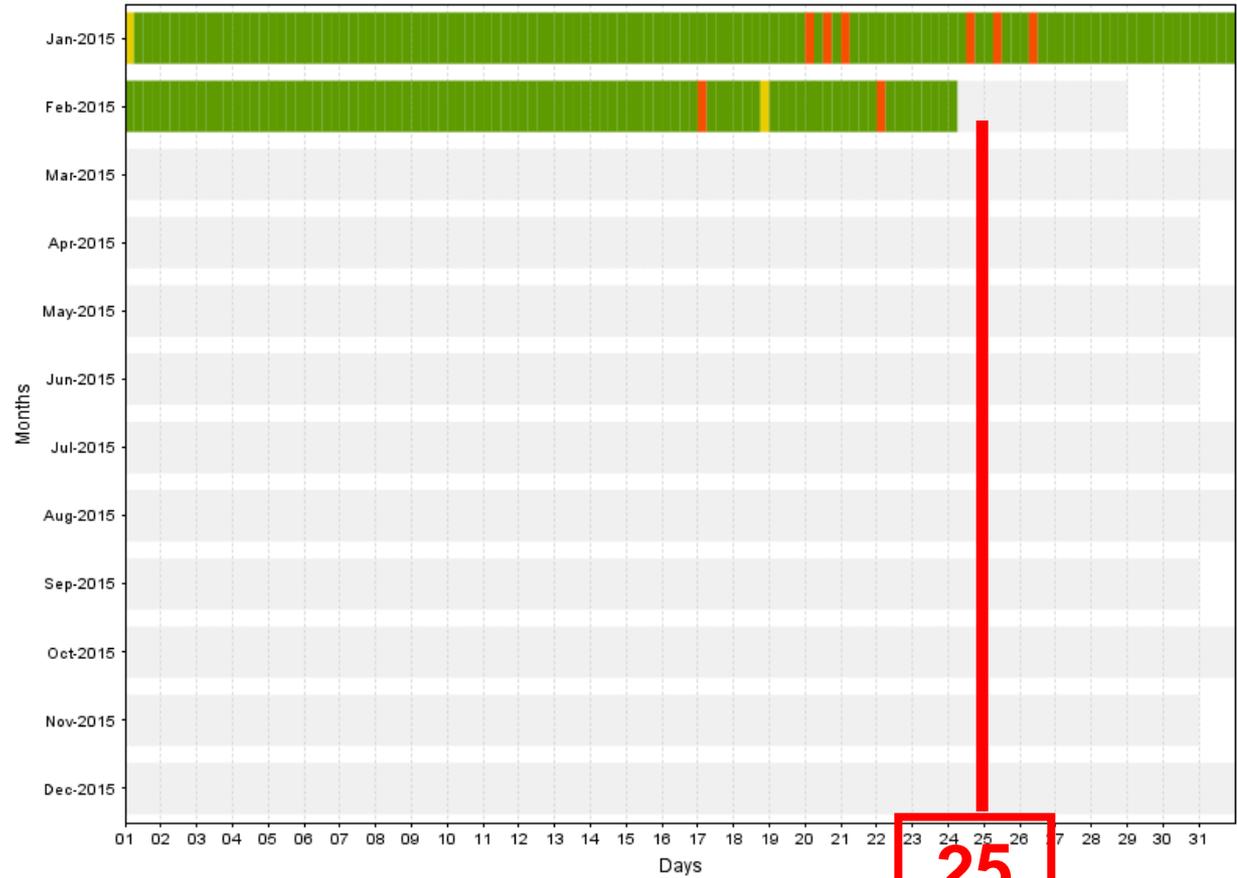
# Feedback proposed by Dale & Belay

- Frequent feedback/reporting to improve site performance
- Automatic email for failed QA/QC
- A webpage could be updated with the feedback for each site. An automated e-mail could be sent to the site rep notifying him/her that feedback is available on their web page
- Monthly summary

- Governance
- Sites
- Documents
- Data Products
  - Registration
  - Scheduling
  - RS92-GDP.2
    - Availability
- Meetings
- Campaigns
- Blog
- Links
- Contact

Lindenberg, DE (LIN-RS-01) 2015 show

### Performance of GRUAN Data Product RS92-GDP v2 at LIN-RS-01



Improved feedback with version3

- Report filed by site
- Automatic report by Lead Centre
  - site description
  - data streams

Report Xilin Hot will be included

# Station reporting by site

- Overview
- Change and change management
- Resourcing
- Site assessment and certification
- GRUAN related research
- WG-GRUAN interface
- Items for ICM plenary discussions
- Future plans



## GRUAN Station Report for Lindenberg (LIN), 2013

Reported time range is Nov 2012 to Oct 2013  
Created by the Lead Centre  
Version from 2014-02-20

- Station
- Measurement systems
- Setups & data streams
- Data products
- Instrument combinations
- Ground checks

## 1 General GRUAN station information

Info	Value
Station name	Lindenberg
Unique GRUAN ID	LIN
Geographical position	52.2100 °N, 14.1200 °E, 98.0 m
Operated by	MOL   Meteorologisches Observatorium Lindenberg, part of: DWD   Deutscher Wetterdienst
Main contact	Dirksen, Ruud
WMO no./name	10393 LINDENBERG
Operators	current 15, change +1 / -1
Sounding Site	1
GNSS	2

General station  
info

## 1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
LIN-GN-01	GNSS	1	0	0.00 %
LIN-GN-02	GNSS	0	0	not scheduled
LIN-RS-01	Sounding Site	3	1493	105.96 %

List of systems

## 1.2 General comments from Lead Centre

### 1.2.1 General

The site is requested to establish a GRUAN data product for the cryogenic frostpoint hygrometer.

LC comments

## 4 System: Lindenberg Launch Site (LIN-RS-01)

Info	Value
System name	Lindenberg Launch Site
Unique GRUAN ID	LIN-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	52.2100 °N, 14.1200 °E, 112.0 m
Operated by	MOL   Meteorologisches Observatorium Lindenberg, part of: DWD   Deutscher Wetterdienst
Instrument contact	Dirksen, Ruud
Started at	-
Defined setups	3 (RESEARCH, ROUTINE, OZONE)
Possible streams	CFH, ECC, RS41, RS80, RS92

General info

Set-ups & streams

### 4.1 Lead Centre comments

#### 4.1.1 Dataflow

Sonde dataflow to the GRUAN LC operational since January 2008. 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. The site is used as test bed for the RsLaunchClient.

#### 4.1.2 Data quality

GC25 ground check corrections are largely within expected limits.

A manufacturer independent additional ground check using the Standard Humidity Chamber (SHC) is used for all radiosonde launches.

LC comments

## 4.2 GRUAN data products

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

CFH		26	26	
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### 4.2.2 Stream: DFM09

DFM09		50	50	
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### 4.2.3 Stream: ECC

ECC		81	81	
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### 4.2.4 Stream: IMET1

IMET1		25	25	
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### 4.2.5 Stream: RS11

RS11		6	6	
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### 4.2.6 Stream: RS92

RS92		1496	1496	
RS92-RAW	001		1487	
RS92-GDP	001		281	
RS92-GDP	002		1402	1368

Not processed yet

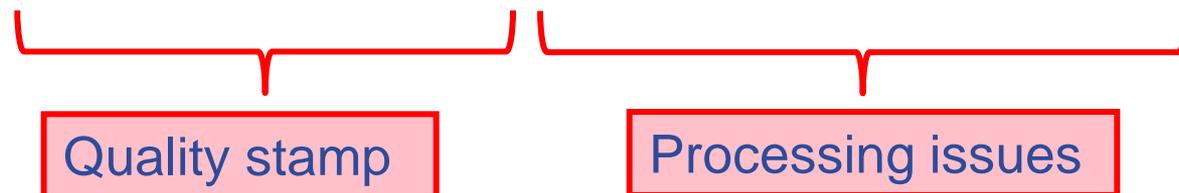
Processed

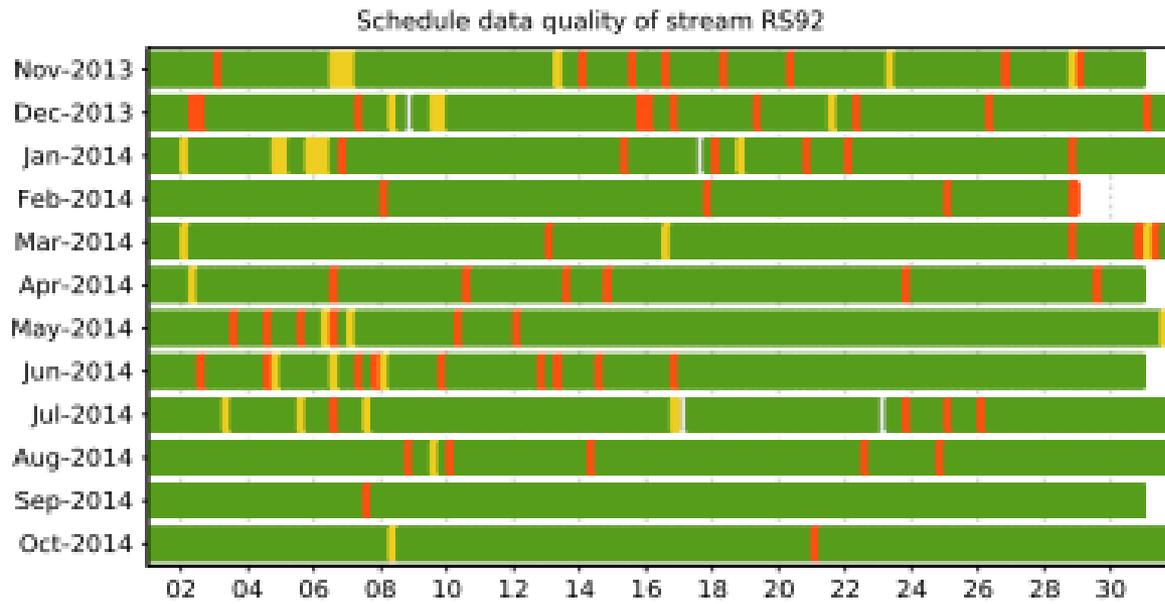
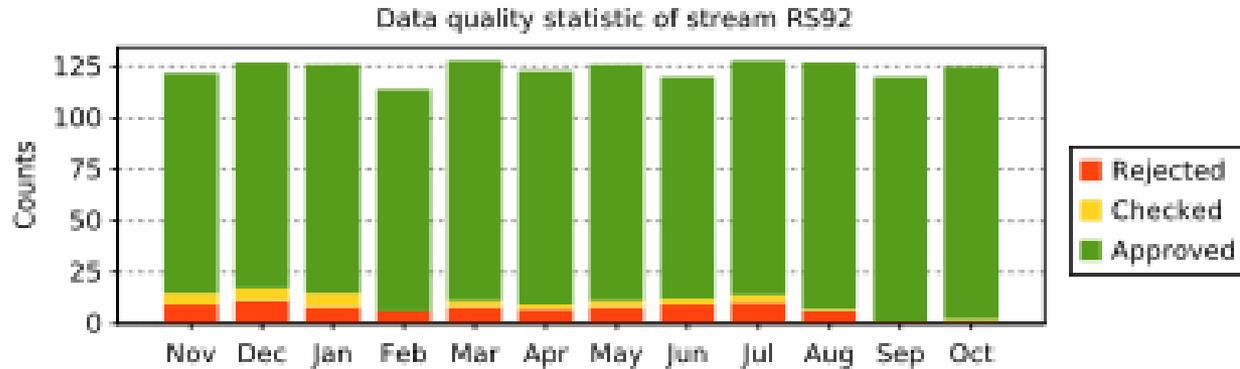
## 4.3 Data quality of current GRUAN data products

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

### 4.3.1 Stream: RS92 (Product: RS92-GDP-002)

Nov 13	122	107	6	9	4		9	5	11
Dec 13	127	110	6	11	2		9	8	19
Jan 14	126	111	7	8	5		3	4	31
Feb 14	114	108		6	4		1	4	8
Mar 14	128	117	3	8	1		4	12	14
Apr 14	123	114	2	7	3		4	6	13
May 14	126	115	3	8	4		4	9	21
Jun 14	120	108	3	9	2		6	8	13
Jul 14	128	114	4	10	1		6	10	6
Aug 14	127	120	1	6	2		1	8	4
Sep 14	120	119		1			1	7	16
Oct 14	125	123	1	1	1			7	18
	1486	1366	36	84	29		48	88	174





- Additional ground check in SHC
  - Include these readings in metadata!
- Burst altitude:
  - 100 hPa: tropospheric humidity
  - 10 hPa: temperature
  - 5 hPa: temperature trend detection (1/week) Scheduling task team
- Use RsLaunchClient to submit data (Metadata!)
  - Lead Centre can assist
- Submit data directly after sounding!
  - Timely feedback. Satellite validation

# GTS - BUFR

Site	Full BUFR	FM35	vertical resolution	Frequency
Barrow		y		2x daily
Beltsville	-	-	-	
Boulder	-	-	-	
Darwin		y		2x daily
DeBilt	y		2s	1x daily
Lamont		y		2x daily
Lauder	-	-	-	
Lindenberg	y		2s	4x daily
Ny Alesund		y	2s	1x daily
Payerne	y	-	3s	2x daily
Potenza	-	-	-	
Sodankyla	-	y		2x daily
Tateno		y		2x daily
Xilin Hot		y		2x daily

Full BUFR: Allows extensive meta data and high resolution

FM35 (TEMP message): Highly condensed data with limited vertical resolution and limited metadata.



## → General monitoring

- Automatic check of incoming measurements (all)
- Manual random inspection (limited)

## → Monitoring aims

- Consistency of GRUAN meta-data base (GMDB)
- Completeness of measurements
- Unexpected things

## → Monitoring example