

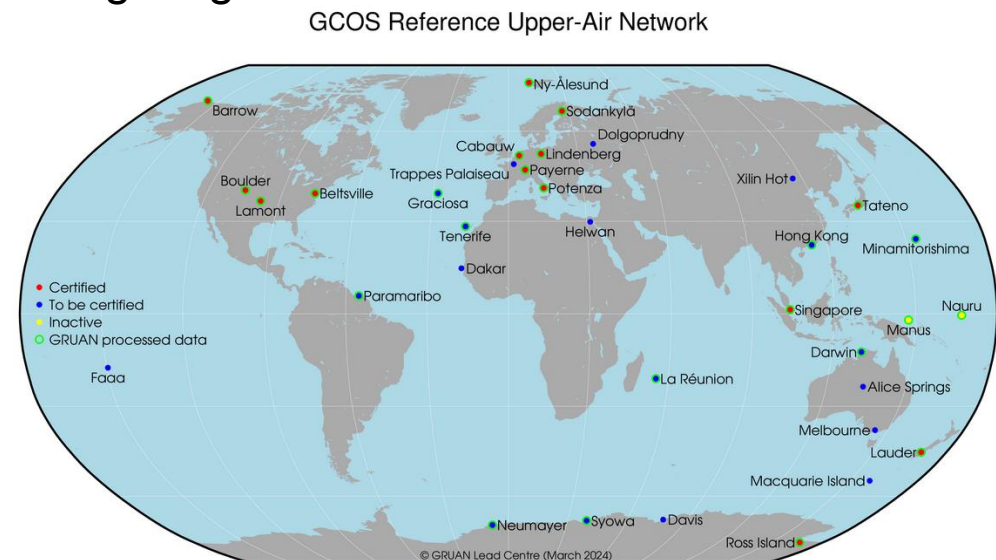


Lead Centre report for 2023

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GRUAN Lead Centre, DWD

15th GRUAN Implementation and Coordination Meeting (ICM-15)
Bern, Switzerland
11-15 March 2024

- New candidate sites: Helwan (Egypt) & Faa'a (Tahiti)
- Recertified:
 - Boulder, Lauder, Ny Alesund, Payerne, Potenza, Sodankyla, (CAB pending)
- Certification initiated/in progress:
 - Tenerife, La Reunion, Neumayer, Hongkong
- In total
 - 33 sites
 - 14 GRUAN-certified sites



➤ Visitors

- Takuji Sugidachi, Skydew (May 2023)
- Holger Vömel, N₂-CFH (Sep 2023)
- GCOS-secretariat & co-chairs (Dec 2023)

➤ Visits/conferences

- NDACC SC meeting, Murnau (D), Sep 2023
- Metexpo, Geneva, Oct 2023

➤ Training

- AWI-Ny Alesund staff (Skydew)

- GRUAN data archive
 - Operationally running GRUAN meta-data data base - GMDB (24/7)
 - Operationally working GRUAN file archive - GFA (24/7)
 - Data streams RS41-GDP.1, RS92-GDP.2, RS-11G-GDP.1 iMS-100-GDP.2
- Ongoing development and optimization of all GRUAN server software components, GDMS, GMDB, GFA
- Ongoing development on GRUAN software tools for use at sites
 - RsLaunchClient, LidarRunClient, gt92, gtRsl, gm41
- Regularly update of data flow statistic plots (available at website)
- Lists of comparison soundings available at website, e.g. RS92-RS41
- Operational data processing of RS41-GDP.1 and RS92-GDP.2

➤ Stratospheric hygrometers

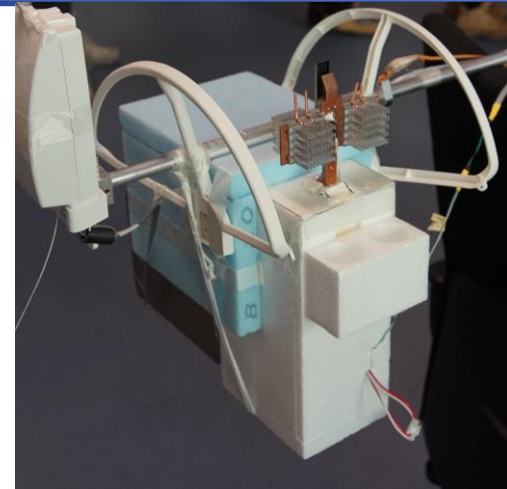
- Assessment program Meisei Skydew
- Testflights N₂-CFH

➤ Intercomparison program for various radiosondes (GDP & non-GDP)

- RS41, RS92, iMS-100, M10, DFM-17

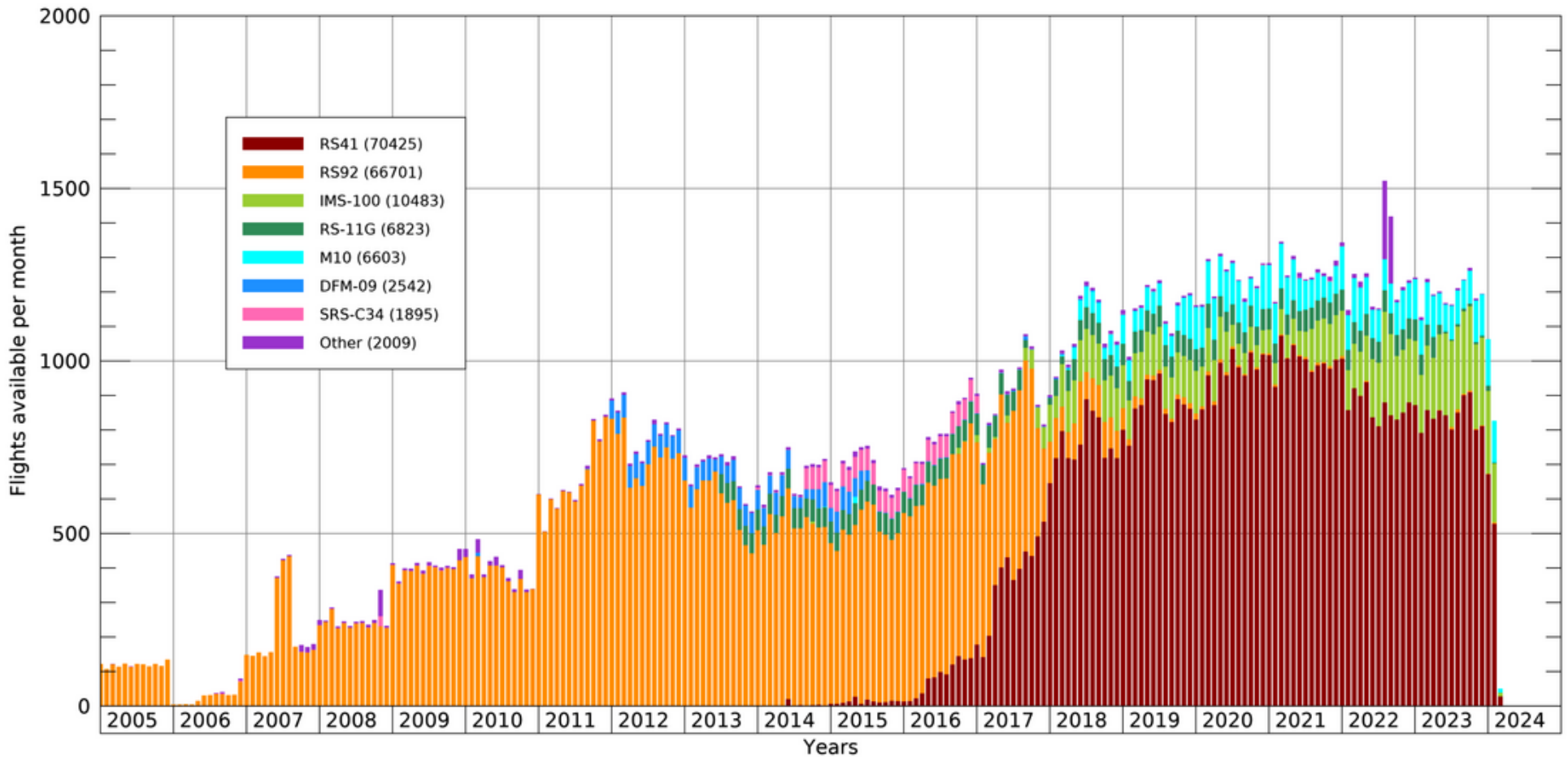
➤ Investigation reproducibility M10 (laboratory & soundings)

➤ Research contract to investigate added value GRUAN data processing



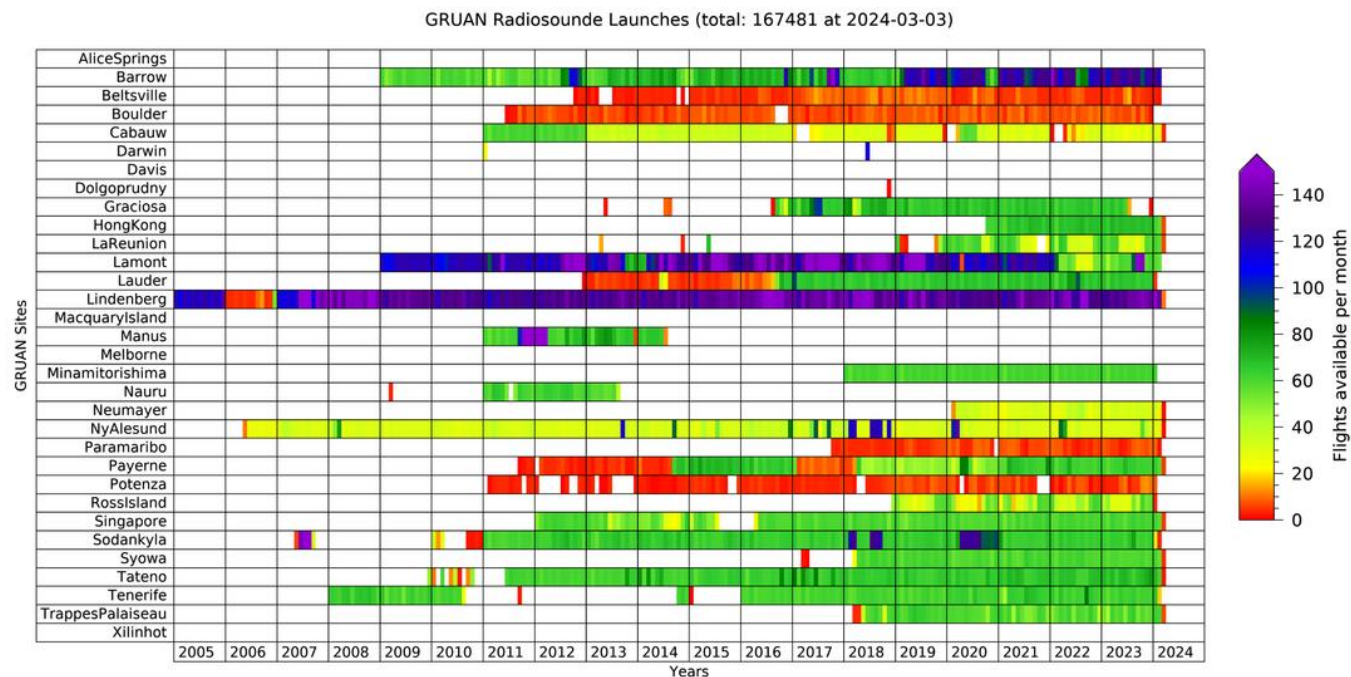
- Full certification of RS41 GDP V1
 - Data processing for all sites flying RS41 up to date
- Completion report on WMO radiosonde intercomparison campaign (UAI2022), cooperation with Payerne. Publication exp'd March 2024
- Peer-reviewed papers (see LC report for complete list):
 - 2022: 7
 - 2023: 8

GRUAN Radiosonde Launches (total: 167481 at 2024-03-03)



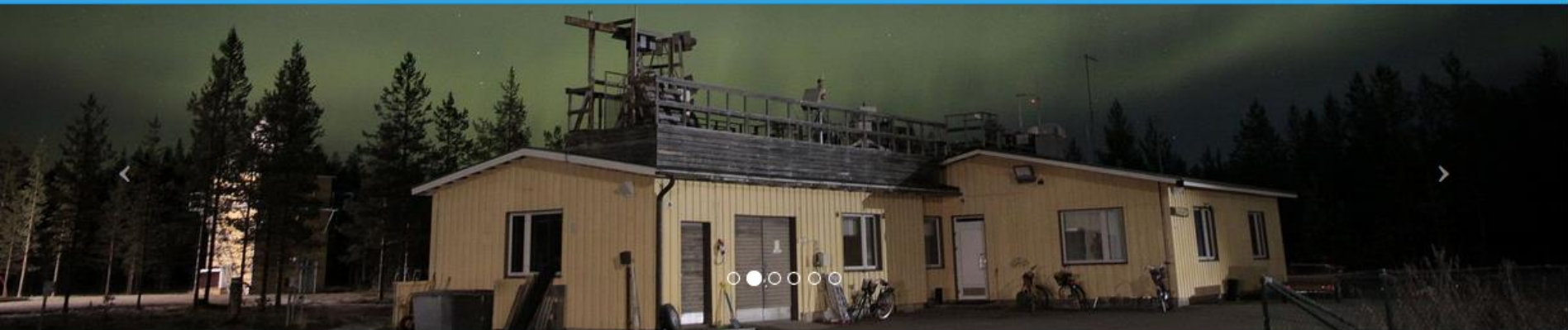
Total 167481 launches on 2024-03-03

- BoM sites no data stream, but working on resolving this (IT-security related issues with RsLaunchClient)
- DAK, DLG not responsive & no data
- XIL no data stream established yet, expect to make progress at ICM-15



- Support development of GRUAN data product for Modem M10 & Graw DFM-09, DFM-17 radiosondes
 - laboratory investigations
 - Comparison soundings
- Start development of GRUAN data product for RS92 (RS92-GDP.3).
- Continue testing and assessment of non-R23 frostpoint hygrometers.
 - Skydew, N₂-CFH
- Assist certification of sites.

- Initiate missing datastreams for silent sites
- Publish result of GRUAN-wide RS92-RS41 comparison
- Further develop operational processing of CFH data.
- Further development of the GRUAN website.



GRUAN



GCOS Reference Upper-Air Network

The climate reference network

➤ Steady development

- Addition of functionality
- Regularly updated data flow statistic plots
- **Content: input needed from community (e.g. instrument experts)**

www.gruan.org

Excerpts from site reports

- Covid-19 ceased to be an issue after 1st half of 2022
- Tropical sites: premature balloon bursts
- Impeding budget cuts
- Cost of Helium
 - BEL switched to H₂
- CFH program halted at various sites due to R23 restrictions (EU + Japan)
- Small balloons: ROS, BoM-sites
- Biotwine, RS41 SGE radiosonde

➤ BoM sites

- RsLaunchClient IT-security issues -> no data submission
- No CFH launches due to budget restrictions
- Limited burst height due to balloon-size

➤ NYA

- “0.5K jump radiosondes vs ground check shelter around June (2022 and 2023). We only found out about the temperature jump with these LC reports”

➤ ROS

- Damaged SHC. SHC check only for 00Z sounding
- Limited burst point, due to small balloons (200g)

➤ TAT

- Introduction of autolaucher lead to decrease of burst altitude

➤ ARM sites

- Prolongation of Rival program (RS92-RS41 intercomparison coincident with satellite overpasses)
- SHCs purchased for all sites

➤ POT

- schedules radiosonde launches to coincide with satellite overpasses (GRUAN overpass predictor service)

➤ REU

- No CFH/FPH data upload

