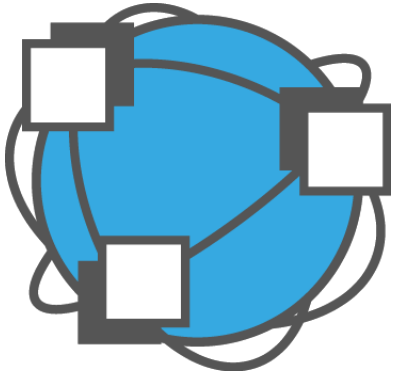
RadCalNet

Status



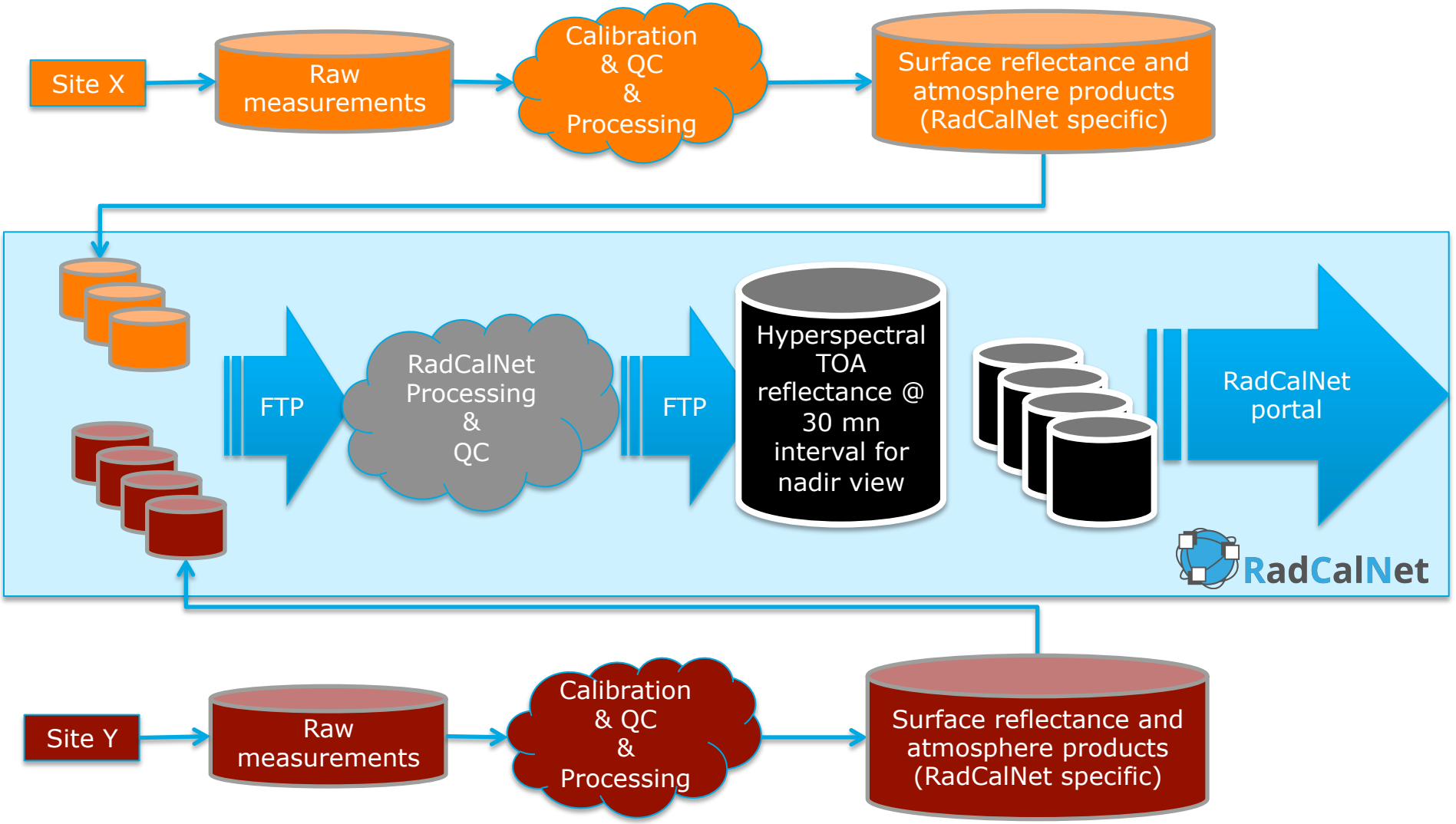
M. Bouvet on behalf of the RadCalNet WG

29-03-2019

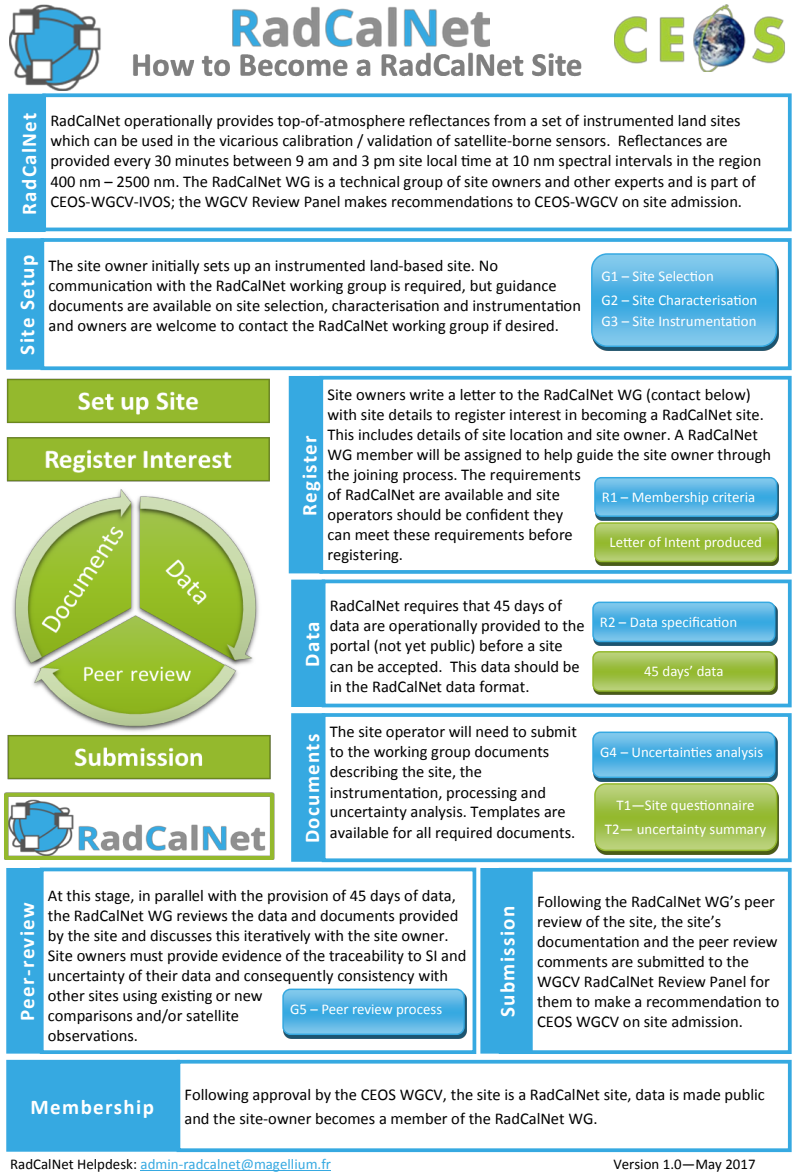
What is RadCalNet?

RadCalNet is a CEOS WGCV initiative to provide satellite operators with SI-traceable Top-of-Atmosphere (TOA) spectrally-resolved reflectances to aid in the post-launch radiometric calibration and validation of optical imaging sensors from a coordinated network of instrumented land-based test sites.

What is RadCalNet?

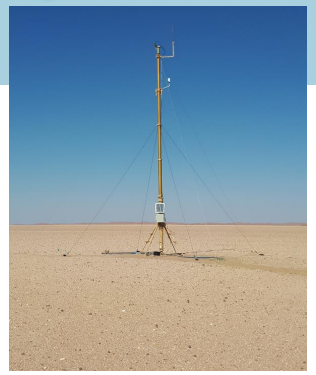


Acceptance process for new sites



- RadCalNet WG members contribute to the review
- Process overseen by WGCV
- Through an acceptance panel reporting to WGCV

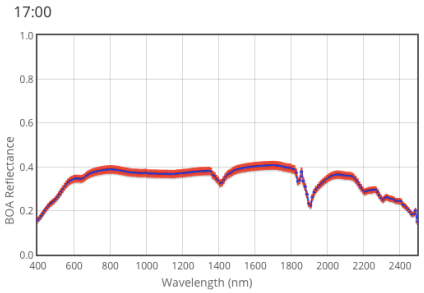
The first RadCalNet sites



The RadCalNet processing

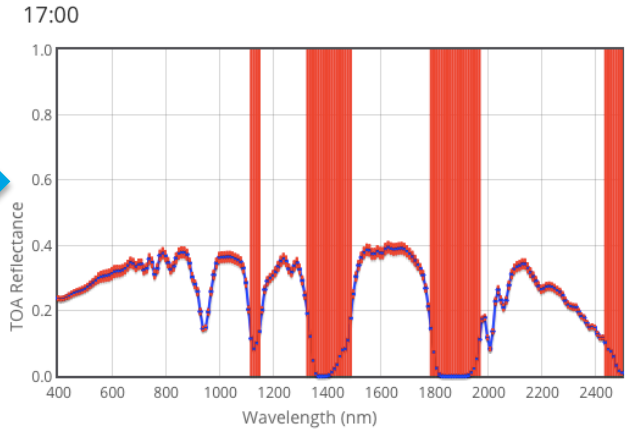
- MODTRAN 5
- TOA reflectance reprocessed last summer to include propagation of the surface / atmosphere uncertainties to TOA uncertainties via pre-computed LUT from Montecarlo MODTRAN runs

Surface reflectance

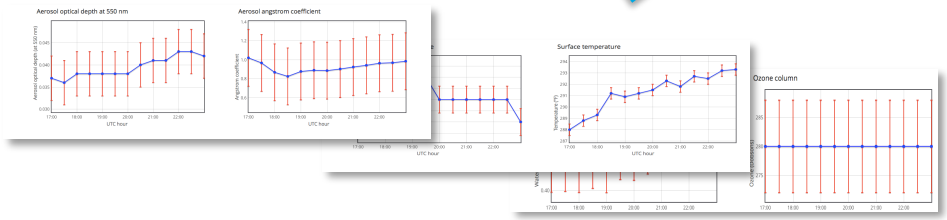


RadCalNet Processing

TOA reflectance



Atmospheric measurements



The portal

RadCalNet

CEOS Committee on Earth Observation Satellites

esa

Welcome to the Radiometric Calibration Network portal

The portal provides access to all RadCalNet datasets, allowing users to visualize and download data acquired by the four instrumented reference test sites.

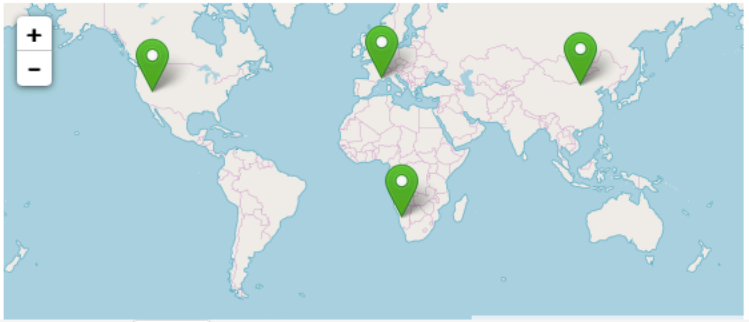
- University of Arizona's site at Railroad Playa, Nevada, USA,
- AoE's site at Baotou, China,
- the CNES site at La Crau, France,
- the new ESA/CNES site in Gobabeb, Namibia.

These test sites provide nadir-view top-of-atmosphere reflectance at 30 minute intervals from 9am to 3pm local standard time at 10 nm intervals from 400 nm to 2500 nm. This is calculated from ground nadir-view reflectance measurements, and atmospheric measurements such as surface pressure, columnar water vapour, columnar ozone, aerosol optical depth and the Angstrom coefficient. Correction to top-of-atmosphere will be performed for all sites in the same way using Modtran.
The data are provided in a text format, defined in R2-RadCalNetRequirements-DataFormatSpecification_V9.pdf.
To download data from a site, please select a site.
To download complete data sets, please press the hyperlink download all data. Users are also asked to consider RadCalNet data policies especially providing appropriate citations when displaying data downloaded from this site.
A quickstart guide for new users and for becoming a new RadCalNet site is available here : RadCalNetQuickstartGuide_20180702.pdf.

Please check the latest announcements, FAQ and discussions on the RadCalNet's forum.

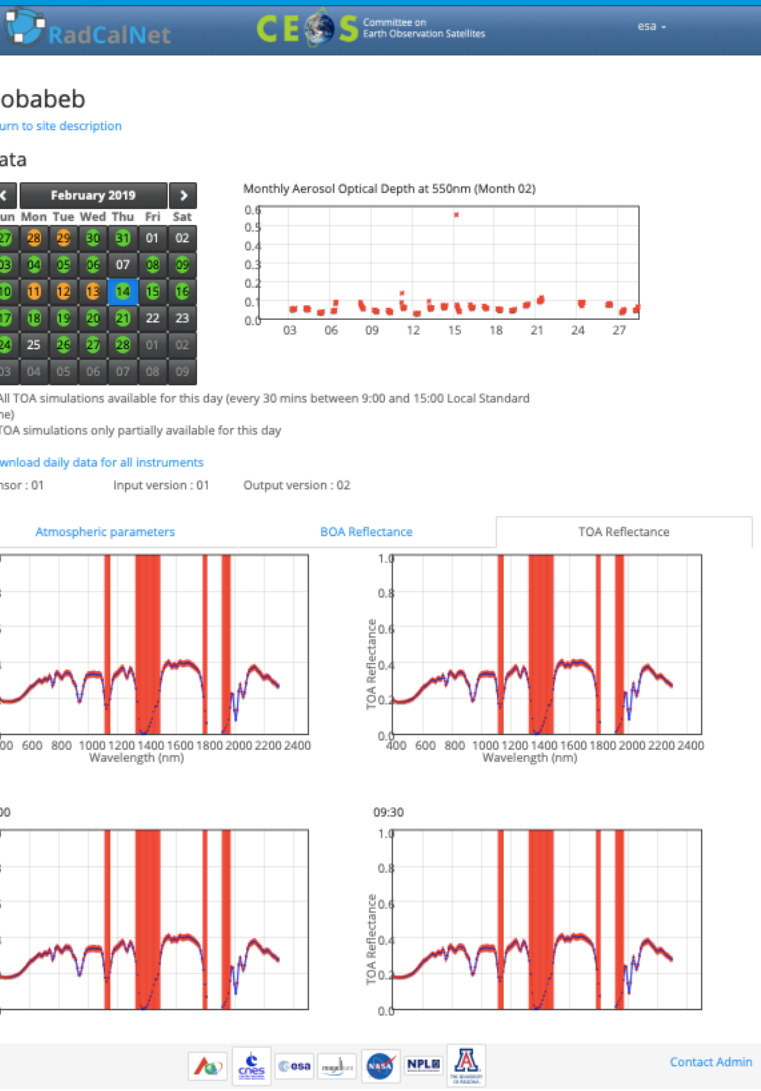
Please select a site :

- Railroad Valley Playa
- La Crau
- Gobabeb
- Baotou



Contact Admin

The portal


RadCalNet
CEOS Committee on Earth Observation Satellites
esa
Gobabeb
return to site description
Data
February 2019
Sun Mon Tue Wed Thu Fri Sat
Monthly Aerosol Optical Depth at 550nm (Month 02)
All TOA simulations available for this day (every 30 mins between 9:00 and 15:00 Local Standard Time)
TOA simulations only partially available for this day
Download daily data for all instruments
Sensor : 01
Input version : 01
Output version : 02
Atmospheric parameters
BOA Reflectance
TOA Reflectance
TOA Reflectance
Wavelength (nm)
09:00
09:30
Contact Admin

RadCalNet Documentation

- **G0**-RadCalNet Guidance – Becoming A RadCalNet Site
- **G1**-RadCalNet Guidance – Site Selection
- **G2**-RadCalNet Guidance – Site Characterisation
- **G3**-RadCalNet Guidance - Instrumentation And Data Processing
- **G4**-RadCalNet Guidance – Uncertainty Analysis
- **G5**-RadCalNet Guidance - Peer-Review And Comparison update
- **R1**-RadCalNet Requirements - RadCalNet Membership Criteria
- **R2**-RadCalNet Requirements – Data Format Specification
- RadCalNet Data Policy
- **T1**-RadCalNet Templates - Site Questionnaire
- **T2**-Uncertainty Summary Report – Template

RadCalNet documentation

RadCalNet Processing

- **D1**-RadCalNet Data Version Description
- **R2**-RadCalNet Requirements – Data Format Specification

RadCalNet individual site documentation

- Site questionnaires x 4
- Site uncertainty summary reports x 4

Timeline since last WGCV/IVOS meeting in Noordwijk

- March 2018: RadCalNet WG meeting #7 at ESTEC
- April/May 2018: 4 RadCalNet prototype sites endorsed by WGCV
- July 2018: RadCalNet portal and forum open to public
- June-Dec 2018: Gobabeb operation degraded
- Fall 2018: First known candidate sites formally invited
- Xmas 2018: AEO proposed a new sandy site
- March 2019: RadCalNet WG#8 Perth

Data generated since last IVOS meeting

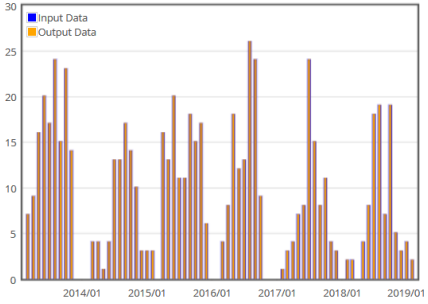
	IVOS 30	IVOS 31	Nb of added days
BOA reflectances	1148	1988	840
TOA reflectances	1104	1983	879

BOA	Total	Total	Nb of added days
RVUS	466	656	190
LCFR	457	729	272
BTCN	152	236	84
GONA	73	367	294

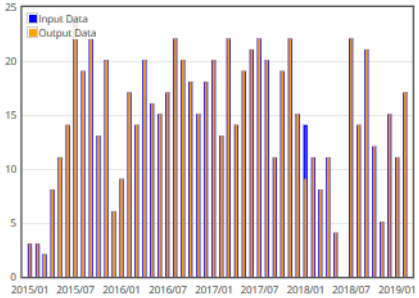
TOA	Total	Total	Nb of added days
RVUS	466	656	190
LCFR	457	724	267
BTCN	152	236	84
GONA	73	367	294

Data availability

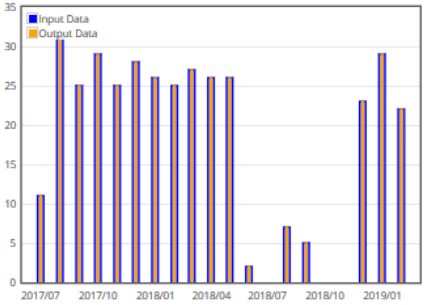
RVUS



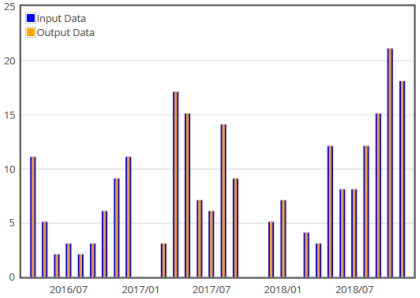
LCFR



GONA



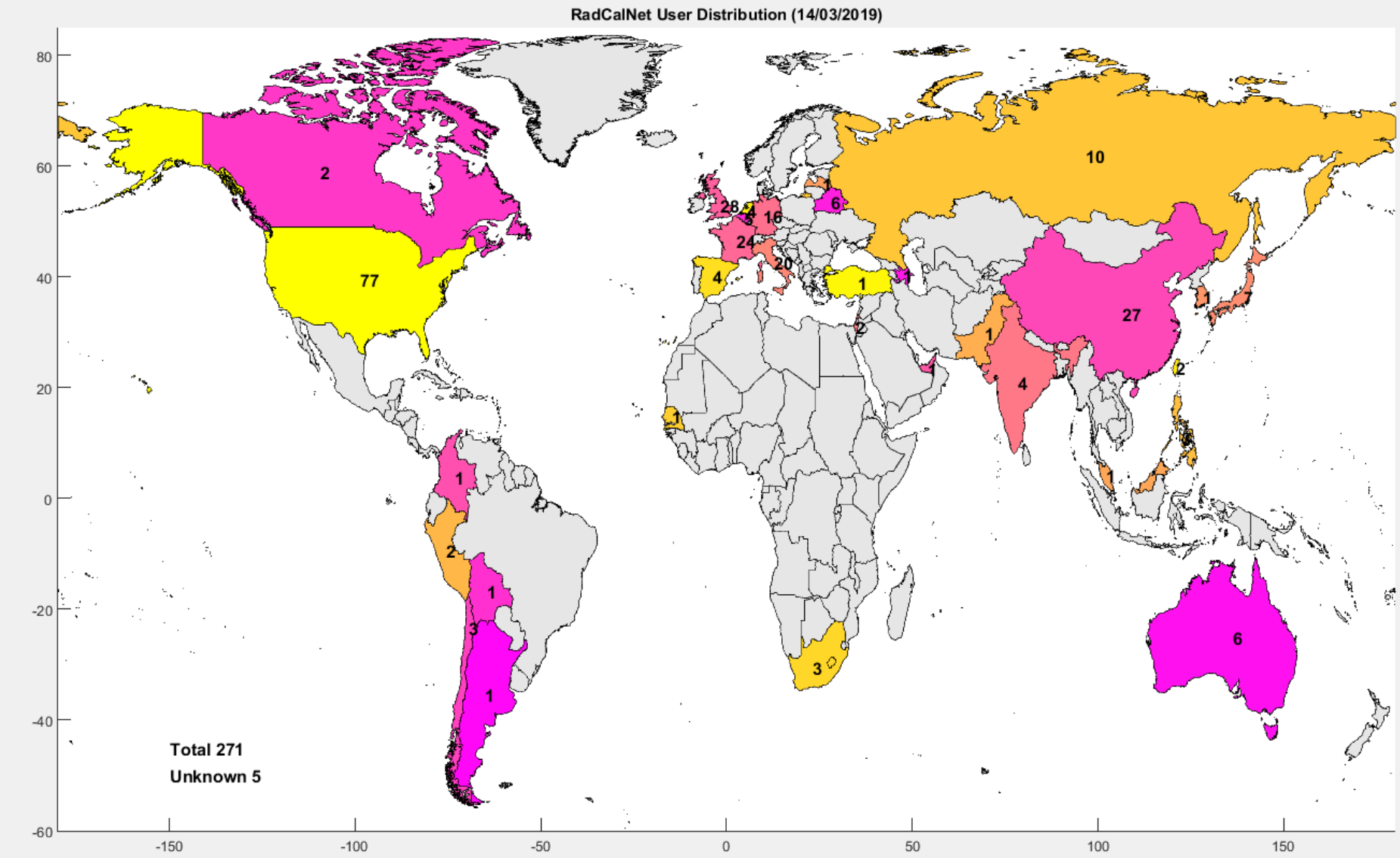
BTCN



BOA	2013	2014	2015	2016	2017	2018	2019	Total
RVUS	145	83	133	114	88	87	6	656
LCFR	0	0	145	201	218	137	28	729
BTCN	0	0	0	52	76	108	0	236
GONA	0	0	0	0	149	167	51	367

TOA	2013	2014	2015	2016	2017	2018	2019	Total
RVUS	145	83	133	114	88	87	6	656
LCFR	0	0	145	201	218	132	28	724
BTCN	0	0	0	52	76	108	0	236
GONA	0	0	0	0	149	167	51	367

Public users



Next steps

- Continue operation at the sites keeping data latency within 2 weeks
- Review of the candidacy of AOE sandy site before end of May 2019 and provide feedback to WGCV site admission panel before July 2019
- Reprocess the full RadCalNet BOA/TOA archive mainly in order to increase spectral resolution of TOA reflectance (keeping sampling at 10 nm) and improve the associated uncertainty estimates + improve BOA products quality.
- Next RadCalNet WG telecon early June 2019
- Provide sample of reprocessed data to beta users 3 months before pushing full collection on the portal
- Reprocessing complete and available before next IVOS meeting

Questions?