Deliverable 10.3: First summary of the monitoring of access to ACTRIS data and user statistics

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Summary

This report focuses on the use of data during the first ACTRIS-2 period and gives an overview of the data access through the data centre over the period 1 January 2015 – August 2016. The activities within the ACTRIS Data Centre and provision of measurement data from the research infrastructure is on behalf of all the data originators (instrument principle investigators) and for the whole ACTRIS consortium. It is a high priority to serve a wide user community, both external and internal to the consortium.

Currently, ACTRIS include about 110 different atmospheric variables, comprising: about 80 different trace gases, 10 different aerosol variables measured near the surface, 10 aerosol profile variables, 8 cloud profile variables. The data result from more than 30 different methodologies, both near surface and remote observations, with time resolution ranging from seconds to 1 week. Additionally, ACTRIS provides near real time data (NRT) from about 20 sites in this period. NRT of ACTRIS near surface data is provided from 24 instruments distributed over 14 sites.

The users of ACTRIS aerosol profiles and near surface data are distributed worldwide. There are 466 different access IDs from 40 countries, each of them accessing the data bases from 1 to numerous times since start of ACTRIS-2. In total, 20 071 measurement years of data are downloaded over the reporting period from all instruments[1]. For aerosol profile data sets, there are 72 different access IDs from 24 countries accessing, downloading 6 972 yearly data sets. For ACTRIS near surface data, there are 395 different access IPs downloading data more than 17 000 times from 34 countries. In total 13 099 years of near surface measurement data are downloaded over the ACTRIS-2 period. In addition near surface data sets are plotted more than 2300 times in the EBAS web interface by the users, since the start of the project.

The metrics and information on the use of ACTRIS data should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.2 First summary of the ACTRIS data offered by the ACTRIS Data Centre*". Some data sets offered through the data centre range back to the year 2000, achieved through ACTRIS precursor-projects (EARLINET, EUSAAR, CLOUDNET ACTRIS-1 and others), and some are new time series. This is relevant e.g. for the total years of data available for download.

Section 1 introduces the ACTRIS Data Centre and includes central definitions and links to core documents for ACTRIS data centre activity. Section 2.2 to 2.4 summarise the details on the access to each of the various variables archived in the topical data bases. Section 2.5 provides information about use of the portal.

1 Introduction and definitions

ACTRIS measurement data are available through the ACTRIS Data Portal http://actris.nilu.no. The data are handled in 3 highly specialised topic data repositories. By the start of ACTRIS-2, measurement data from about 60 sites and ~130 different atmospheric variables were included in the ACTRIS data centre (including instrument variables). The data curation is closely linked to the networking activities and to the calibration centres to facilitate and ensure standardized and comparable procedures throughout the infrastructure. By 31 August 2016, the ACTRIS data centre has been handling data from about 75 sites

[1] *22 317 yearly data sets since 1 January 2015*

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and ~130 different atmospheric variables, of these ca 80 different trace gases, 10 different aerosol variables measured near the surface, 10 aerosol profile variables, and 8 cloud variables. The data are resulting from ca. 30 different methodologies, both near surface and remote observations, with time resolution ranging from seconds to 1 week.

The ACTRIS data portal is a metadata catalogue. Development, management and maintenance of the data flow to the ACTRIS data portal is a centralised task performed by NILU, and the portal is up and running close to 100% of the time, 24/7. Figure 1 shows the main structure of the portal. The metadata catalogues are updated regularly, every night through various procedures, so potentially new data added to the topical data bases are available through the portal latest the following day. The structure is flexible, e.g. to add and change access to topic databases, implementation of various password and registrations procedures etc.

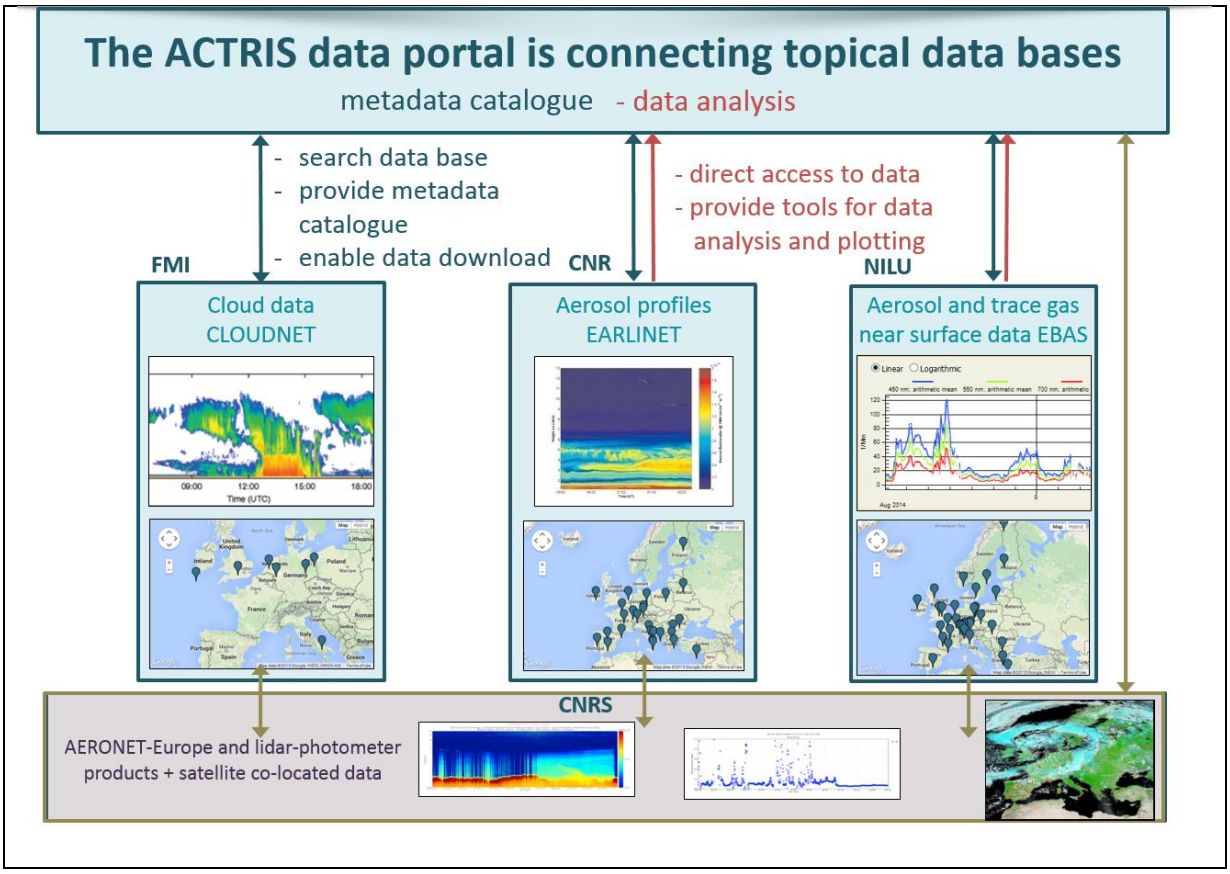

Figure 1: Overview of the core structure of the ACTRIS Data Centre.

The data curation of the ACTRIS primary measurements data is organised in the 3 specialised data repositories:

- All cloud profile data are archived in Cloudnet DB: http://cloudnet.fmi.fi/ under the responsibility of FMI.
- All aerosol profile data are archived in EARLINET data base: http://access.earlinet.org/ under the responsibility of CNR

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- All aerosol and trace gas near surface data are archived in EBAS: http://ebas.nilu.no/, under the responsibility of NILU

In addition, AERIS-ICARE is the forth topic database and offers satellite data support to facilitate products combining with ACTRIS ground data with Earth observation data.

All data repositories are linked in the ACTRIS data portal: http://actris.nilu.no/, and the ACTRIS measurements data are accessible also through the portal. Additionally, the portal provide access to secondary data. Secondary datasets are derived from primary measurement data by e.g. averaging, filtering of events, interpolation of data etc. Secondary datasets are usually the result of analysis for a targeted article, special studies or processed for model experiments. Primary datasets are regularly updated mainly due to extension of new years, secondary datasets are normally not updated over time.

1.1 Definitions and terms

The ACTRIS data management plan describes requirements and recommendations for ACTRIS data sets, the data flow, how the data is made available, and the data repositories. The data management plan includes a list with all ACTRIS atmospheric variables together with recommended methodology. The ACTRIS data policy and data management plan are available through the ACTRIS data portal. Additionally, a document with central definitions has been produced to define ACTRIS data sets together with harmonised vocabulary and metrics across the ACTRIS Data Centre. This document is available at ACTRIS-2 Intranet (login is required).The following definitions will be used in this report:

- **One ACTRIS data set:** is one variable per year of measurement data with time resolution as defined in appendix 1 in the ACTRIS data management plan. The instrument has to comply with the recommendations and provide data for at least 75% if the total time defined there, over 1 year.
- **ACTRIS near real time data (NRT),** means preliminary data available within less than 3 h from the ACTRIS data Centre for near surface data, and for Cloud profile data, this is relaxed to be within one day.
- **Access and use of 1 data set**: The access of one data set: follow the definition of the data set above. Access of full year of data is 1. If a user only plots or downloads part of a year, this is a fraction of a year.

2 Monitoring of access to ACTRIS data

This chapter provides an overview of the access to the ACTRIS data sets offered to all users by the ACTRIS data centre after 1 January 2015 and until August 2016. The period is selected to reflect the continuous data flow and overlap with ACTRIS-FP7, and covers the first ACTRIS reporting period.

The monitoring of access of ACTRIS data aim to answer to questions like:

- What are the access and download of the various ACTRIS data? How is this developing over time?
- How is the geographical distribution of users? And where are the most intensive use of ACTRIS data?
- Are the ACTRIS Data Portal used? And later stage, what are the most used functionalities of the ACTRIS data portal?

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Only data sets accessed from the data bases, either through the ACTRIS Data Portal, or from the topical data bases are monitored. The report include an overview of the total access, and the access of the various variables, distributed on each of the topical data bases. Both number of data sets accessed and downloaded are presented, in addition to number of users, and their geographical distribution. Finally, user statistics and access to the ACTRIS Data Portal web site is included.

2.1 Overview of total access to ACTRIS data sets

Access to ACTRIS data through the databases EARLINET DB (aerosol profiles) and EBAS (aerosol and trace gas near surface data) have been monitored closely since the start of ACTRIS-2. The data sets available for access and download is described in detail in the report "*D10.2 First summary of the ACTRIS data offered by the ACTRIS Data Centre*". Section 2.2, 2.3 and 0 summarise the details on the access to each of the various variables archived in the topical data bases.

The users of ACTRIS aerosol profiles and near surface data are distributed worldwide, 466 different access IPs from 40 countries, each of them accessing the data bases from one to numerous times. The geographical distribution of users are shown in the map in Figure 2,

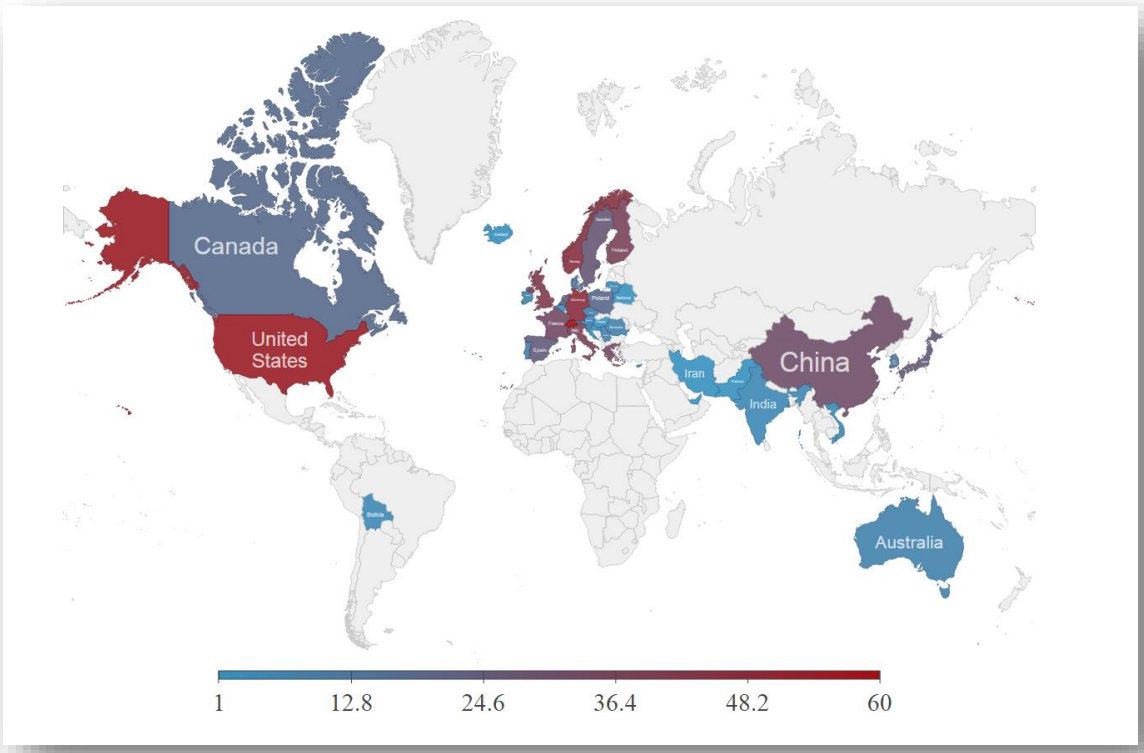

Figure 2: Geographical distribution of the 466 accesses downloading ACTRIS aerosol and trace gas data sets since start of ACTRIS-2 until end August 2016.

A dynamic version of the map is available for further analysis https://actris.github.io/actris-statistics

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The most intensive use of ACTRIS data, the countries where there has been most years of data downloaded, since start of ACTRIS-2 is shown in the map in Figure 3. A dynamic version of the map is also available for further analysis: https://actris.github.io/actris-statistics/pages/downloads-by-user-country

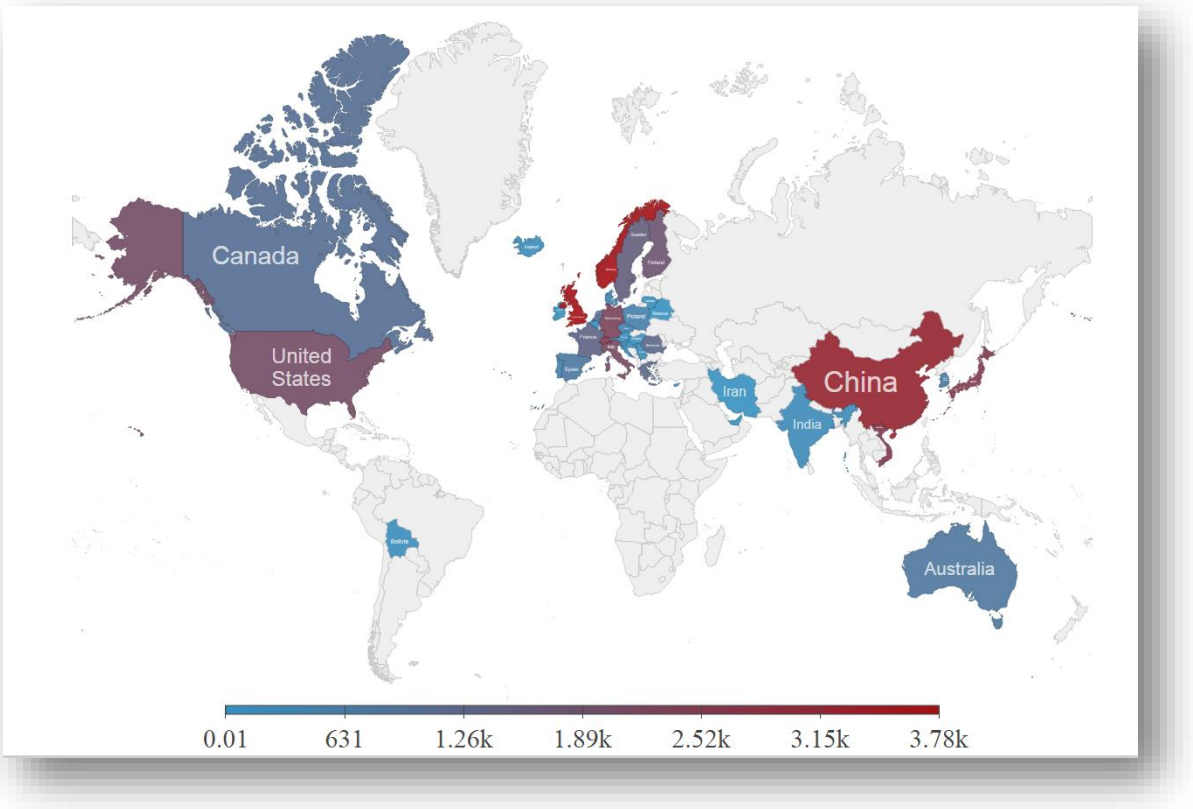

Figure 3: Geographical distribution of the countries with most intensive use, downloading most years of data since start of ACTRIS-2. In total 20 071 measurement years are downloaded.

Figure 4 and

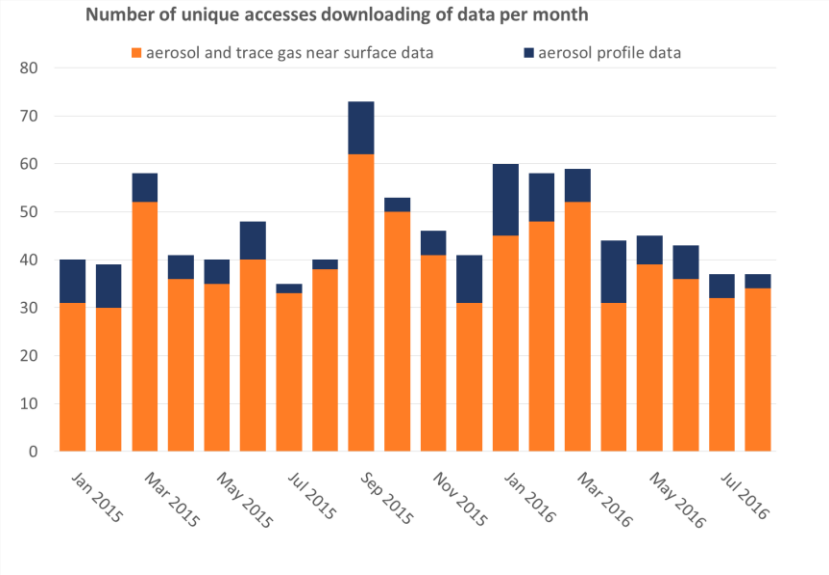

Figure 5: Monthly number of unique accesses (unique IP addresses) downloading ACRTIS aerosol profiles (blue) and near surface data (orange) each month.

Table 2: Summary of access to ACTRIS data through the ACTRIS data portal, or directly from EARLINET DB or EBAS. INSPECT means number of unique users (user IPs) inspecting data values in the web interface, DOWNLOAD gives the number of different user IPs downloading data, and PLOT is the number of different IPs plotting data in the web interface.

	INSPECT	DOWNLOAD	PLOT
		All data	
	(aerosol profiles, near surface aerosol and trace gas)		
Monthly average	Not available	75 different IPs	Not available
Total	Not available	466 different IPs accessing	Not available
		Aerosol profile data	
Monthly average	Not available	7	Not available
Total	Not available	72 different IPs accessing	Not available
		Aerosol and trace gas near surface data	
Monthly average	20	68 different IPs accessing in average 1005 times per month	145
Total	384	394 different IPs accessing 20 103 times	2 905
Time interval:		2015-05-01 - 2016-09-01	

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depict the monthly statistics of access to level 2 data archived in these data bases.
These metrics should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.2 First summary of the ACTRIS data offered by the ACTRIS Data Centre*". Note also that some variables range back to the year 2000, and some are new time series.

Figure 4 report on the total number of measurement years downloaded per month, in accordance with the required time resolution defined in ACTRIS Data Management Plan (see section 1.1 for definitions).

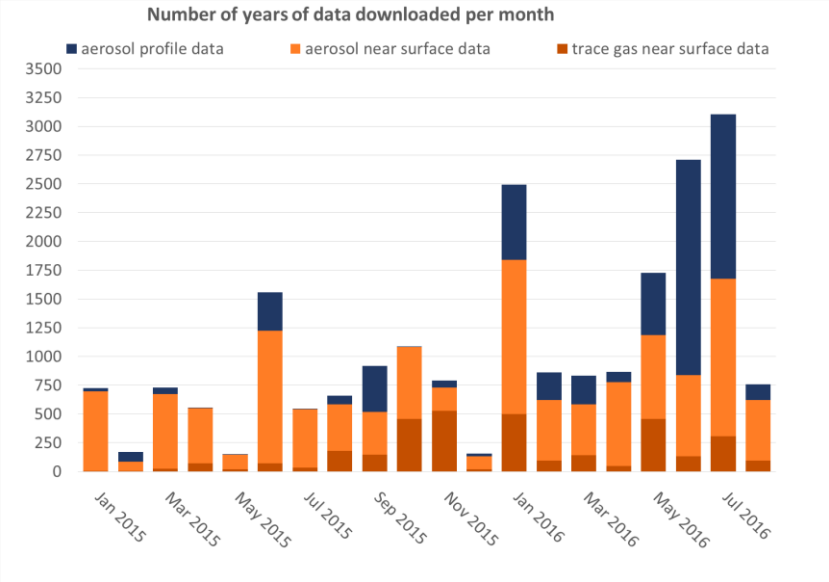

Figure 4: Number of years with level 2 data sets downloaded of ACTRIS aerosol profile data (blue), and near surface aerosol data (orange and trace gas data (dark orange).

In total, 20 071 measurement years of data are downloaded over the reporting period from all instruments/methodologies, and 22 317 since January 2015. Blue is the number of years of aerosol profile data, and orange is the number of years with aerosol (light orange) and trace gas (dark orange) near surface data. The average number of measurement years of data downloaded each month is 1070, but the variation is large, and the development is increasing over the period. Table 1 summarise the total access, and access to aerosol profile, and near surface data separately. The metrics "INSPECT" and "PLOT" are included to illustrate data analysis performed in the web interface. At this stage, this information is only available for EBAS.

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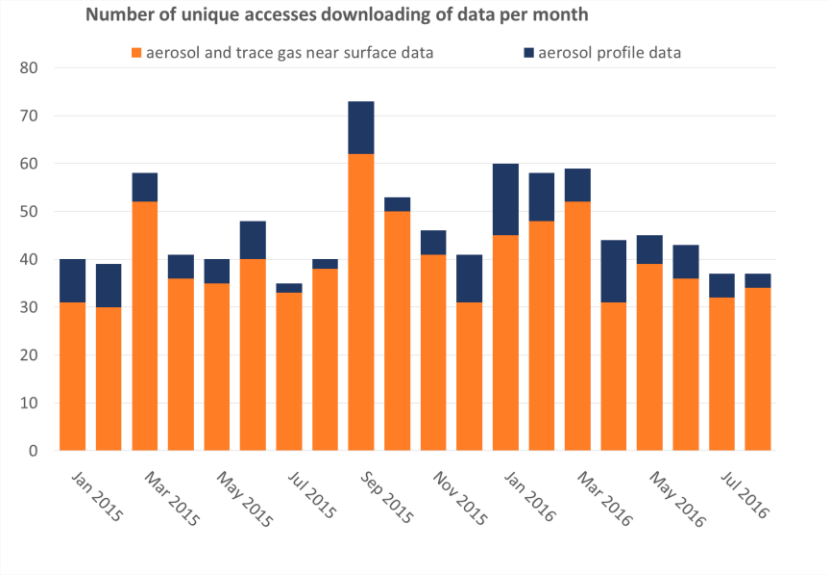
Table 1: Summary of access to ACTRIS data through the ACTRIS data portal, or directly from EARLINET DB or EBAS. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

	INSPECT	DOWNLOAD	PLOT
		All data:	
	(aerosol profiles, near surface aerosol and trace gas)		
Monthly average	Not available	1 116	Not available
Total	Not available	22 317	Not available
		Aerosol profile data	
Monthly average	Not available	361	Not available
Total	Not available	7 212	Not available
		Aerosol near surface data	
Monthly average	21	589	370
Total	418	11 778	7 391
		Trace gas near surface data	
Monthly average	17	166	164
Total	339	3 327	3 276
Time interval:		2015-01-01 - 2016-09-01	



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Total	Not available	72 different IPs accessing	Not available
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Time interval:		2015-05-01 - 2016-09-01	

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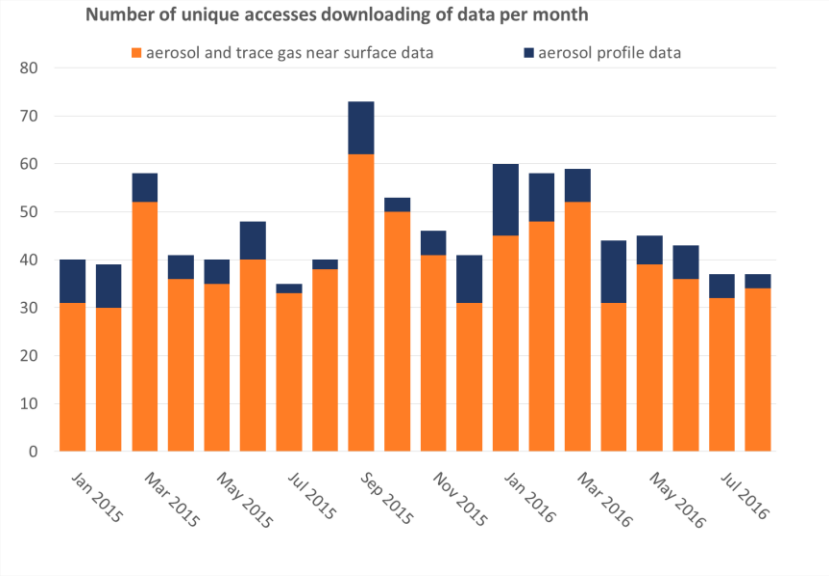
depicts the monthly number of users of downloading ACTRIS aerosol profiles and ACTRIS aerosol and trace gas near surface data over the period and Table 2 summarise the number of users (different access IPs) of aerosol profile, and near surface data separately.



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	INSPECT	DOWNLOAD	PLOT
		All data	
	(aerosol profiles, near surface aerosol and trace gas)		
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2.2 Monitoring of access to ACTRIS cloud profile data

Monitoring of access to the Cloudnet database for this reporting period was hampered due to the Departmental webserver at the University of Reading being severely compromised on 2nd February 2016 and all access terminated for security reasons. The full access statistics were deleted and so not available, thus, only the total number of downloads has been recorded since this was logged by more than one process. Note that the typical quicklook request is for multiple quicklooks at once.

Also during this reporting period, the Cloudnet database underwent migration to FMI. The implementation at FMI is on schedule; with the transfer period allowing updates and improvements being made to the database functionality. The Cloudnet database was enabled at FMI in Oct 2016, with the integration with the ACTRIS portal re-established. In addition, NRT quicklooks for specific sites are now available on the portal itself.

Table 3: Summary of access to cloud product profiles. DOWNLOAD gives the numbers of measurement years of data downloaded and PLOT refers to quicklook requests. Note that values correspond to the period 2015-01-01 to 2016-02-01.

	INSPECT	DOWNLOAD	PLOT
Monthly average	Not available	Not available	Not available
Total	Not available	126	936
Time interval:		2015-01-01 - 2016-02-01	

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2.3 Monitoring of access to ACTRIS aerosol profile data

For aerosol profile data sets, there are 72 different access IDs from 24 countries downloading 6285 yearly data sets since start of ACTRIS-2. The geographical distribution of the use and users of aerosol profile data since start of ACTRIS-2 are shown in the maps in Figure 6 .

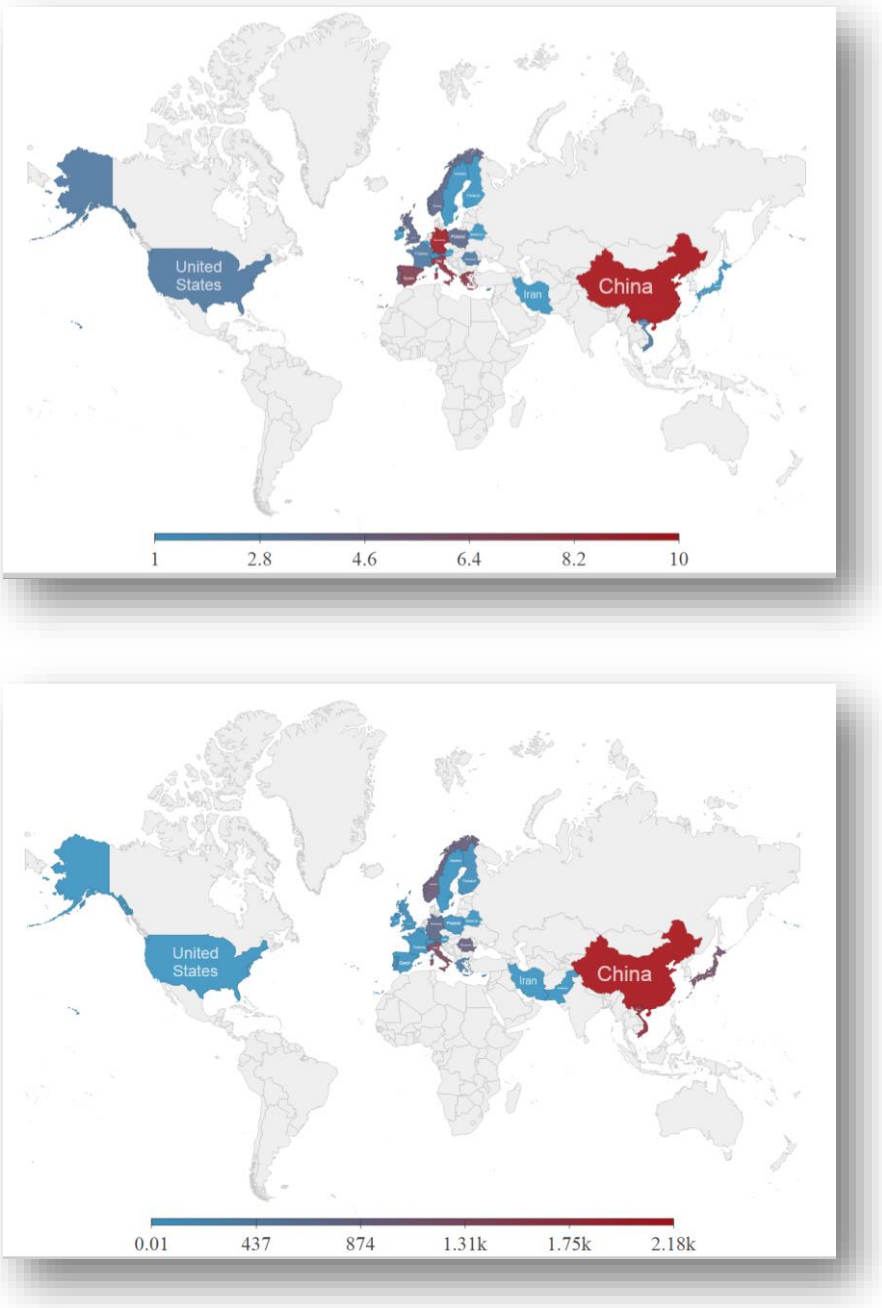

Figure 6: Upper panel: Geographical distribution of the 72 different access IPs downloading aerosol profile data over the period 1 May 2015 - end August 2016. Lower panel: the countries with most intensive use, downloading most years of data, 6972 years in total, from 24 countries in this period.

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Dynamic versions of the maps with more information is available from here:

- Users: https://actris.github.io/actris-statistics/
- Use of data; https://actris.github.io/actris-statistics/pages/downloads-by-user-country

The next sections describe the access and download of the various ACTRIS profile variables. These metrics should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.2 First summary of the ACTRIS data offered by the ACTRIS Data Centre*". Note also that some variables range back ca the year 2000, and some are new time series.

2.3.1 Monitoring of access to aerosol backscatter coefficient profile

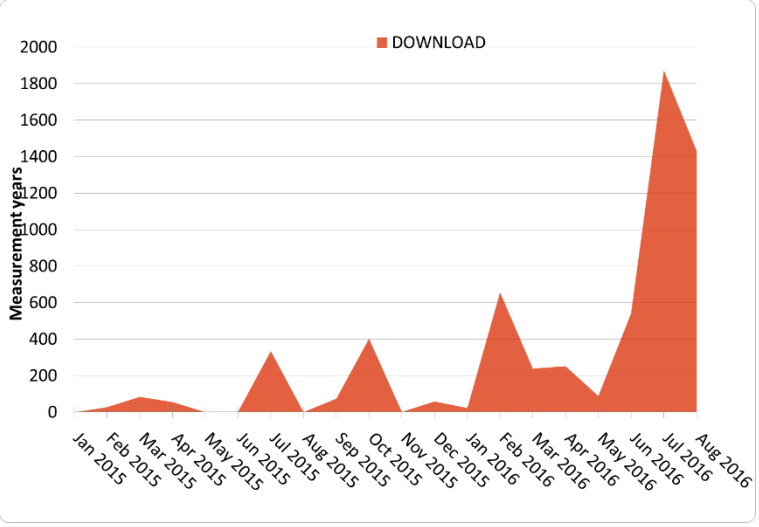

Figure 7: Number of years with level 2 data sets downloaded of Aerosol backscatter coefficient profiles.

Table 4: Summary of access to backscatter coefficient profiles. DOWNLOAD gives the numbers of measurement years of data downloaded.

Aerosol backscatter coefficient profile			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average		261	
Total years	Not available	5213	Not available
Time interval	**2015-01-01 - 2016-09-01**		

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2.3.2 Monitoring of access to aerosol backscatter coefficient profile

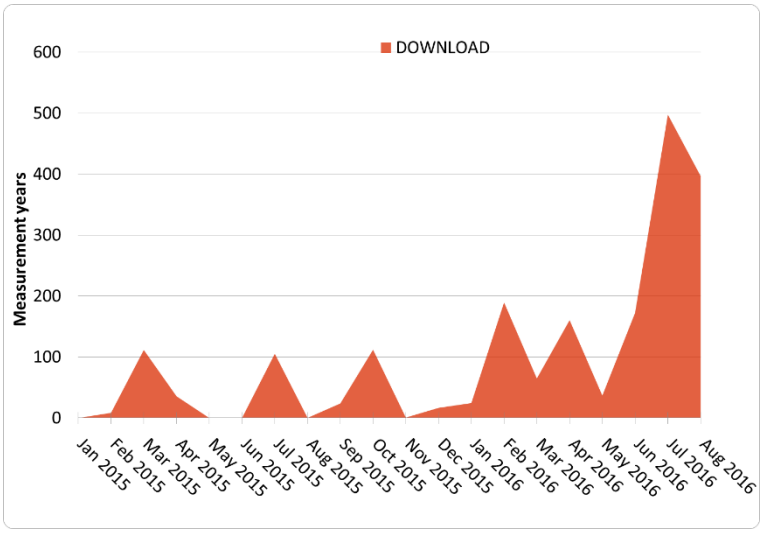

Figure 8: Number of years with level 2 data sets downloaded of Aerosol extinction coefficient profiles.

Table 5: Summary of access to aerosol extinction coefficient profiles. DOWNLOAD gives the numbers of measurement years of data downloaded.

Aerosol extinction coefficient profile			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average		100	
Total years	Not available	1999	Not available
Time interval	**2015-01-01 - 2016-09-01**		

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2.4 Monitoring of access to ACTRIS aerosol and trace gas near surface data

For ACTRIS aerosol and trace gas near surface data sets, there are 395 different unique access IDs downloading data 17 149 times located in 34 countries, in total 13 099 years of measurement data are downloaded. In addition data sets are plotted more than 2300 times in the EBAS web interface by the users. The geographical distribution of the use and users of near surface data since start of ACTRIS-2 are shown in the maps in Figure 9.

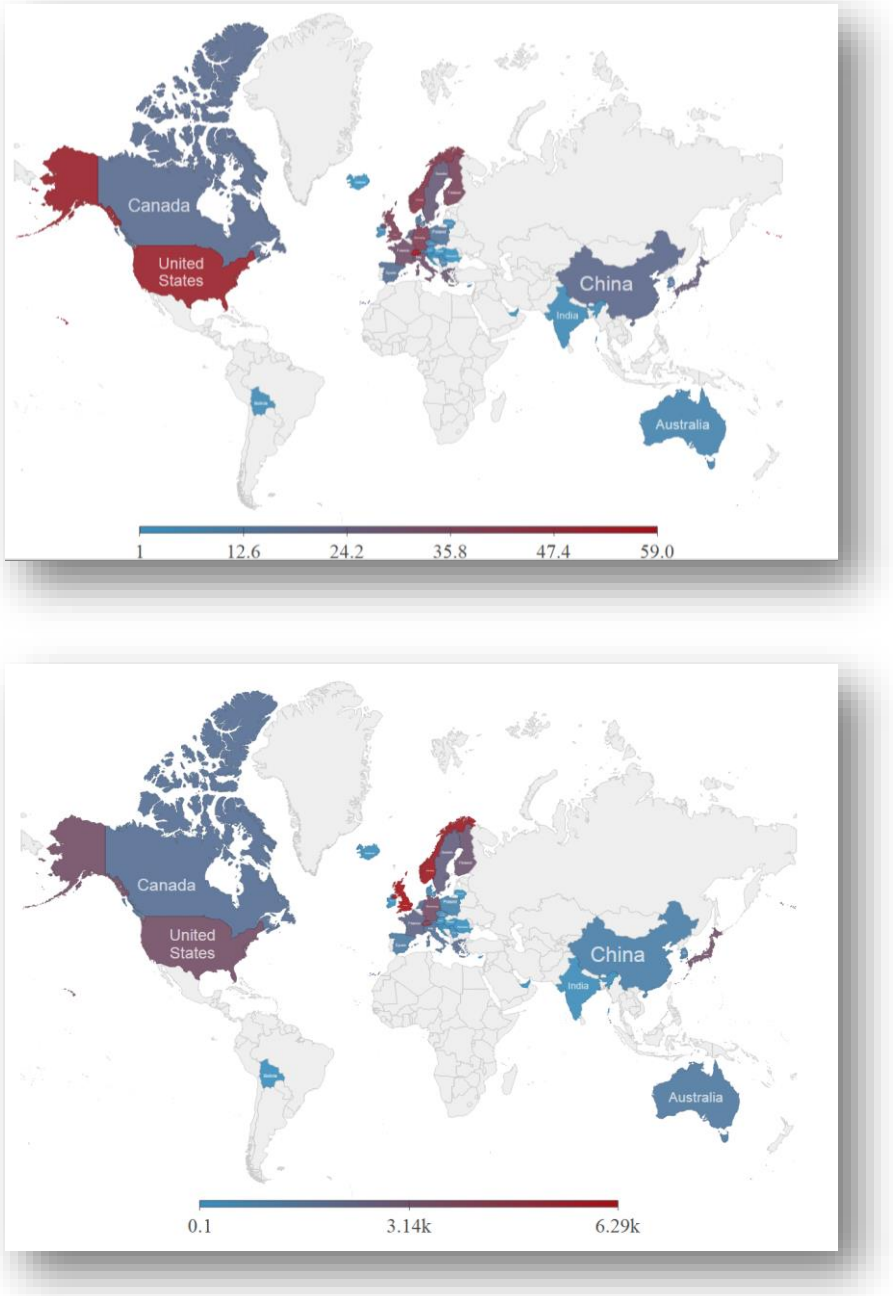

Figure 9: Upper panel: Geographical distribution of the 395 different access IPs downloading aerosol and trace gas data over the period 1 May 2015- end August 2016, in total 17 149 times. Lower panel: the countries with most intensive use, downloading most years of data, 13 099 years in total, from 34 countries.

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A dynamic version of the map with more information is available from here:

- Users: https://actris.github.io/actris-statistics/
- Use of data: https://actris.github.io/actris-statistics/pages/downloads-by-user-country

The next sections describe the access and download of the various ACTRIS near surface variables. These metrics should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.2 First summary of the ACTRIS data offered by the ACTRIS Data Centre*". Note also that some variables range back ca the year 2000, and some are new time series.

2.4.1 Monitoring of access to particle light scattering coefficient

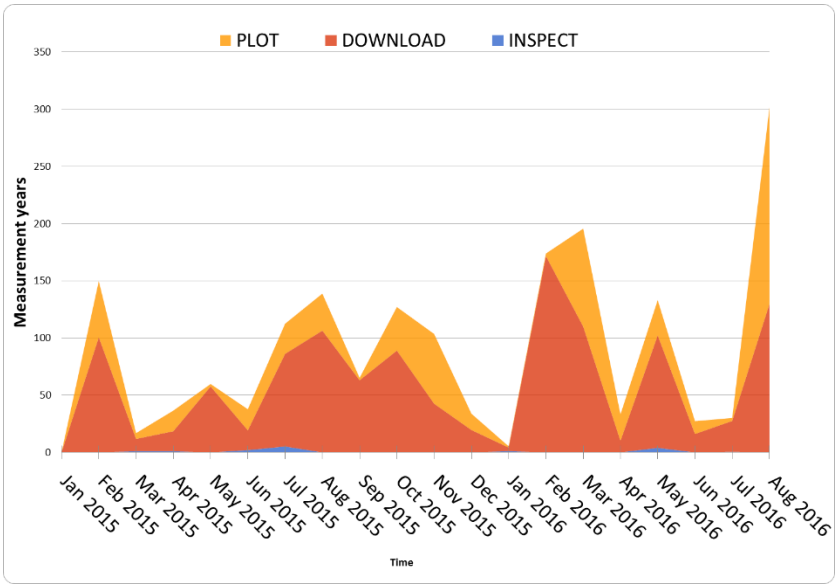

Figure 10: Number of years with particle light scattering coefficient coefficient level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 6: Summary of access to particle light scattering coefficient. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle light scattering coefficient			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	1	60	32
Total years	17	1198	631
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.2 Monitoring of access to particle light backscattering coefficient

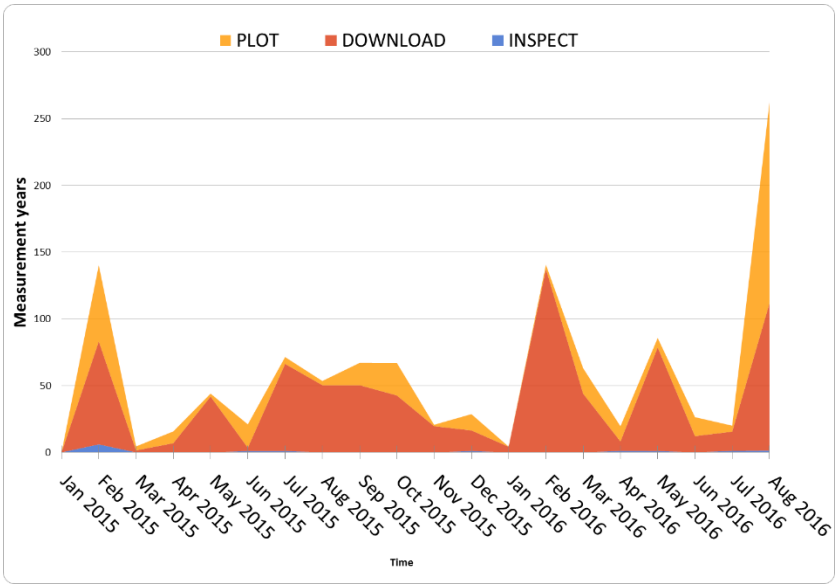

Figure 11: Number of years with particle light backscattering coefficient level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

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Table 7: Summary of access to particle light backscattering coefficient. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle light backscattering coefficient			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	1	40	20
Total years	19	805	397
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.3 Monitoring of access to particle number size distribution

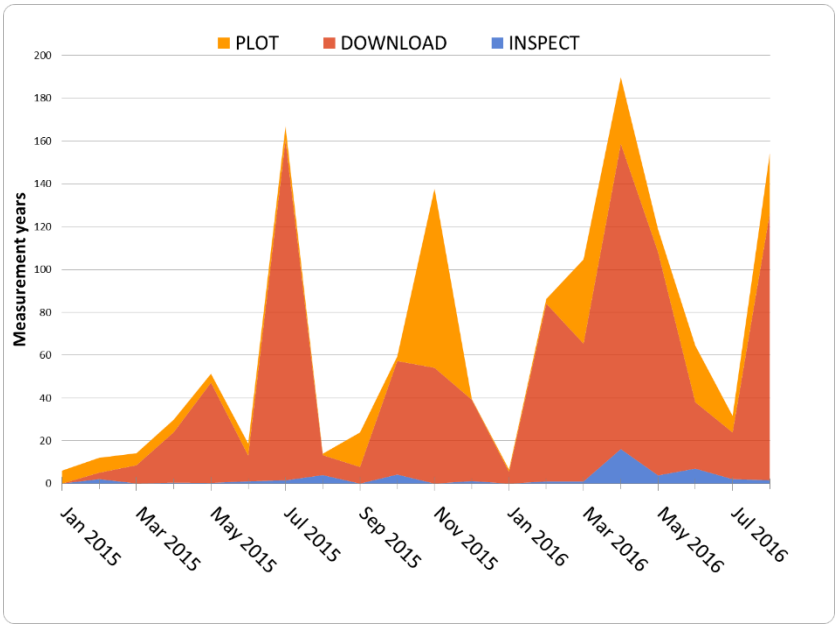

Figure 12: Number of years with particle number size distribution level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 8: Summary of access to particle number size distribution. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle number size distribution			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	2.4	53	14
Total years accessed	49	1062	290
Time interval:	**2015-01-01 - 2016-09-01**		

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2.4.4 Monitoring of access to particle light absorption coefficient

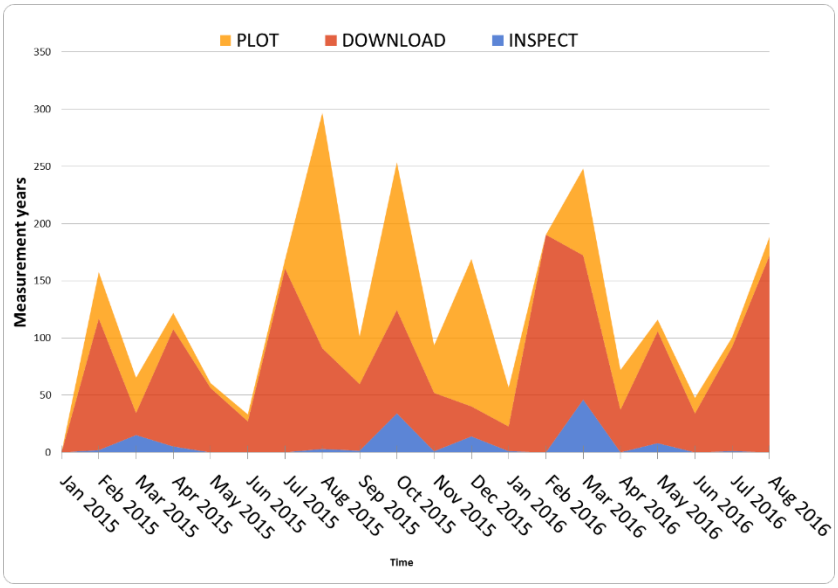

Figure 13: Number of years with particle light absorption coefficient level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 9: Summary of access to particle light absorption coefficient. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle light absorption coefficient			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	7	82	44
Total years	134	1644	888
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.5 Monitoring of access to particle number concentration

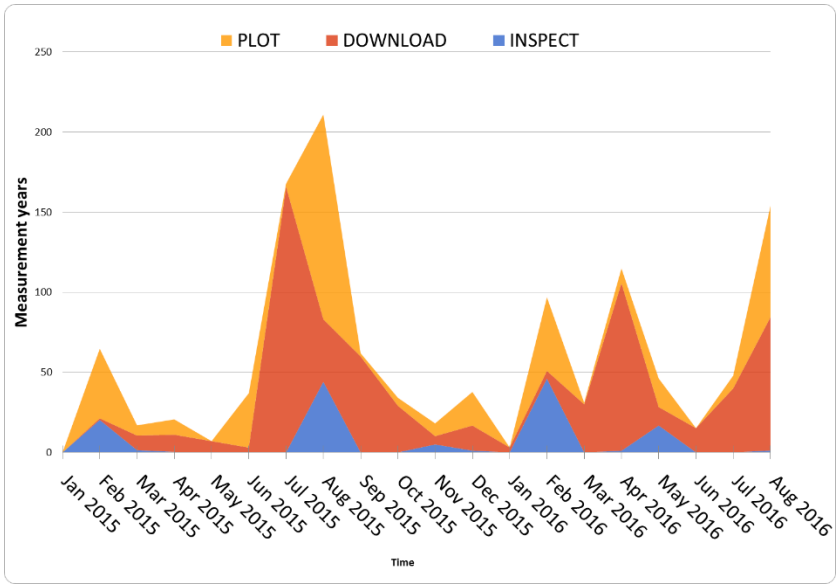

Figure 14: Number of years with particle number concentration level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 10: Summary of access to particle number concentration. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle number concentration			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	7	32	23
Total years	137	645	451
Time interval	**2015-01-01 - 2016-09-01**		

2.4.6 Monitoring of access to cloud condensation nuclei number concentration

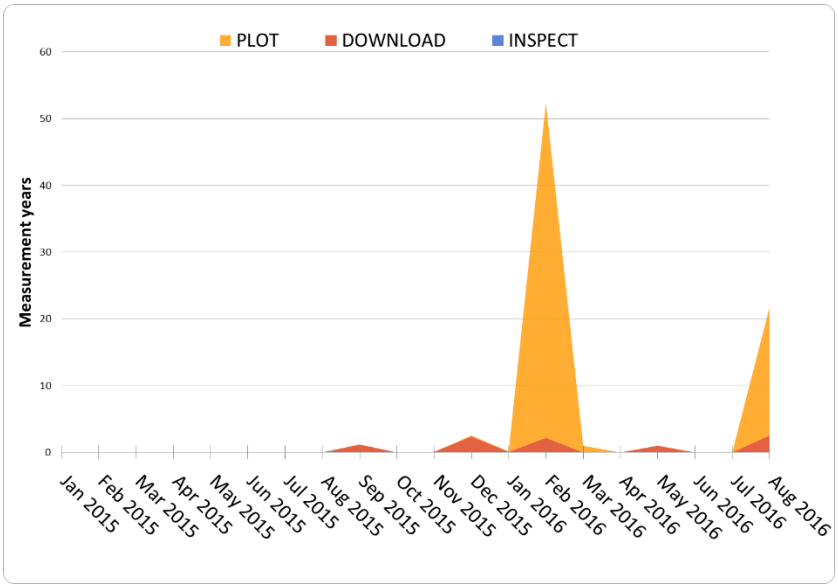

Figure 15: Number of years with cloud condensation nuclei number concentration level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 11: Summary of access to Cloud condensation nuclei number concentration. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Cloud condensation nuclei number concentration			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	0	1	4
Total years	0	13	73
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.7 Monitoring of access to hygroscopic growth factor

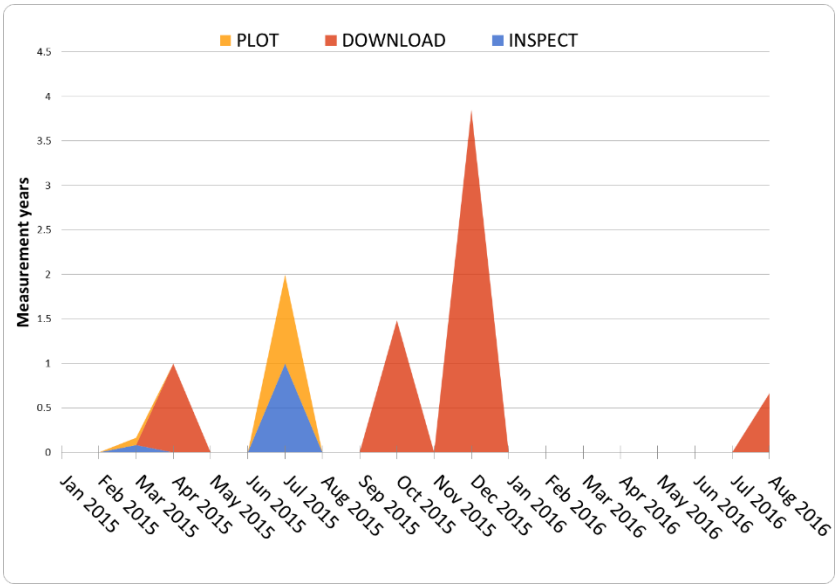

Figure 16: Number of years with hygroscopic growth factor level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 12: Summary of access to hygroscopic growth factor. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Hygroscopic growth factor			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	0	0	0
Total years	1	9	3
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.8 Monitoring of access to particulate organic and elemental carbon mass concentrations

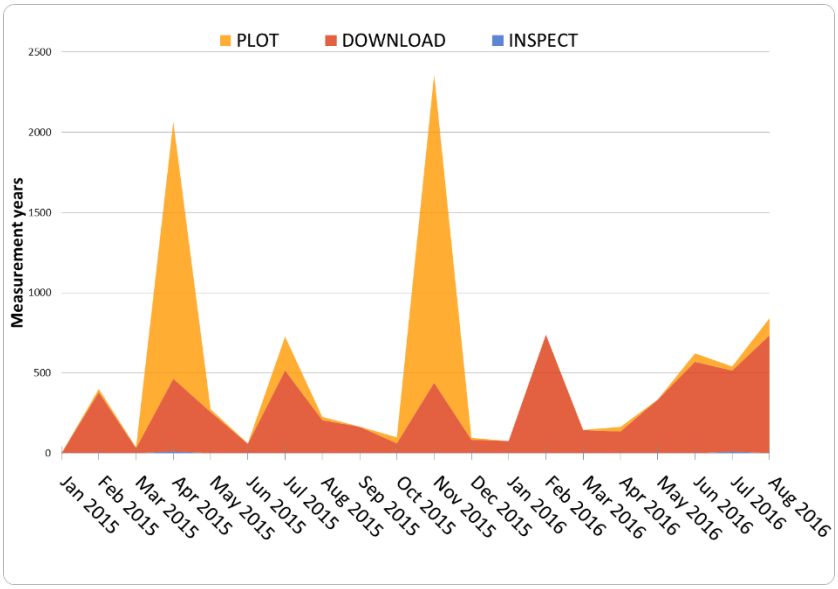

Figure 17: Number of years with particulate organic and elemental carbon mass concentrations (OC/EC) level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 13: Summary of access to particulate organic and elemental carbon mass concentrations (OC/EC). INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particulate organic and elemental carbon mass concentrations (OC/EC)			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	2	309	217
Total years	36	6179	4342
Time interval	**2015-01-01 - 2016-09-01**		

2.4.9 Monitoring of access to particulate size-resolved chemical composition (organic & inorganic size-resolved mass speciation)

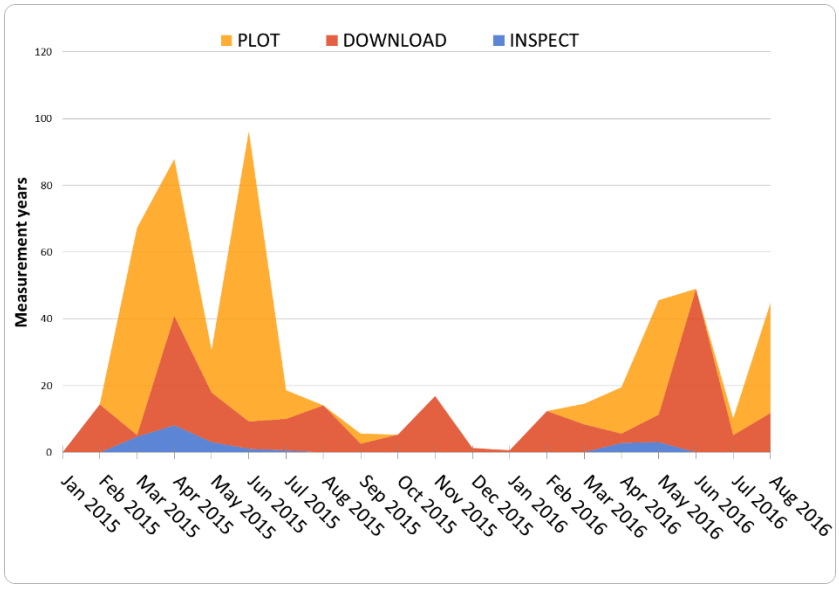

Figure 18: Number of years with particulate size-resolved chemical composition (organic & inorganic size-resolved mass speciation) level 2 data sets plotted (yellow), downloaded (red), and inspected (blue). Note that these data are password protected.

Table 14: Summary of access to particulate size-resolved chemical composition (organic & inorganic size-resolved mass speciation). INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particulate size-resolved chemical composition (organic & inorganic size-resolved mass speciation)			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	1	11	16
Total years	24	220	317
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.10 Monitoring of access to particulate levogluocsan mass concentration

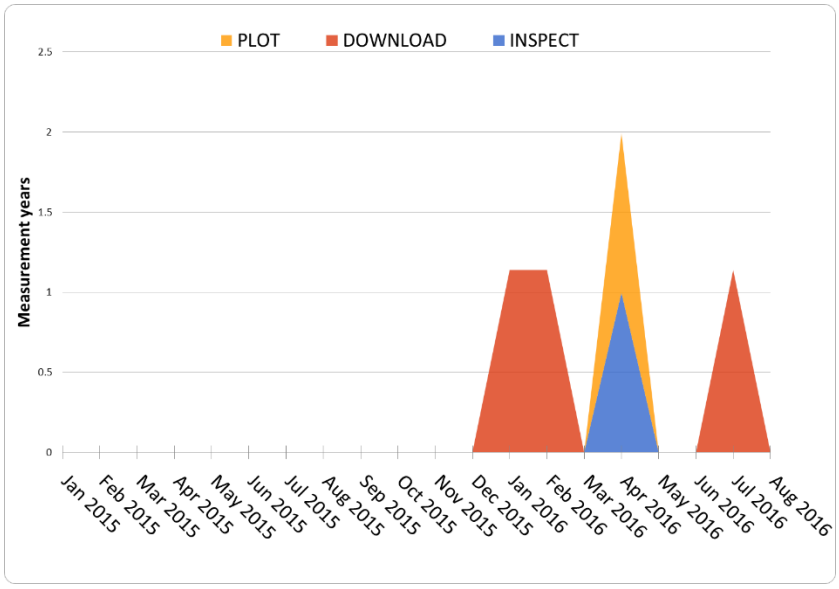

Figure 19: Number of years with particulate levogluocsan mass concentration level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 15: Summary of access to particulate levogluocsan mass concentration. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particulate levogluocsan mass concentration			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	0	0	0
Total years	1	3	1
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.11 Monitoring of access to Volatile Organic Compounds – VOC

VOC is a group of numerous compounds as described in the data management plan: http://www.actris.eu/Portals/46/Publications/DataCentre/ACTRIS_Data_Management_Plan.pdf . Mainly NMHCs (C2-C9 hydrocarbons), OVOCs (oxidised volatile organic compounds as aldehydes, ketons, alcohols). The metrics provided is a sum of all.

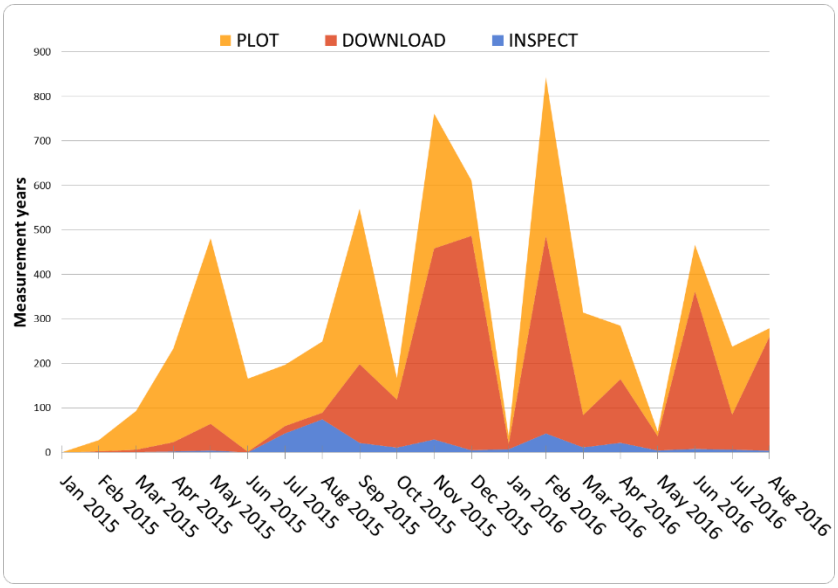

Figure 20: Number of years with Volatile Organic Compounds (VOC) level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 16: Summary of access to Volatile Organic Compounds - VOC. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Volatile Organic Compounds - VOC			
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	16	139	159
Total years	323	2772	3183
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.12 Monitoring of access to NOxy

NOxy is a group of many compounds as described in the data management plan: http://www.actris.eu/Portals/46/Publications/DataCentre/ACTRIS_Data_Management_Plan.pdf . Mainly NO, NO2, NOy (NO, NO2, NO3, N2O5, HNO2, HNO3, PAN, organic nitrates and aerosol nitrates sum of oxidized nitrogen species with an oxidation number >1, both organic and inorganic. The metrics provided is a sum of all.

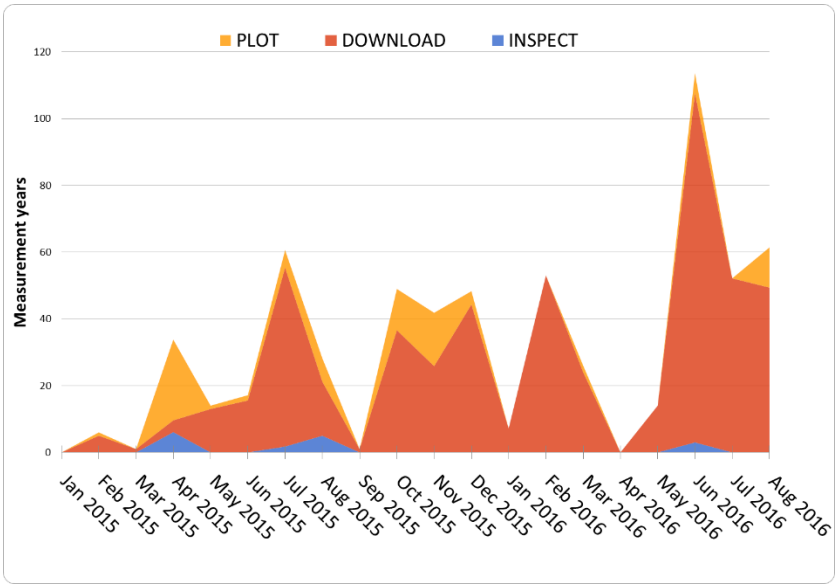

Figure 21: Number of years with NOxy level 2 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 17: Summary of access to NOxy. INSPECT means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

	NOxy		
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	1	28	5
Total years	16	555	92
Time interval	**2015-01-01 - 2016-09-01**		

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2.4.13 Monitoring of access to Near Real Time (NRT) data archived in EBAS

4 near surface variables are available in NRT by end of August 2016. These are Light scattering coefficient Light backscattering coefficient, Number size distributions, and Absorption coefficient. The numbers of sites increased considerable over the period, since start of ACTIRS-2 (see Deliverable D10.2 for more details.)

The metrics provided is a sum of access to all ACTRIS NRT data archived in EBAS.

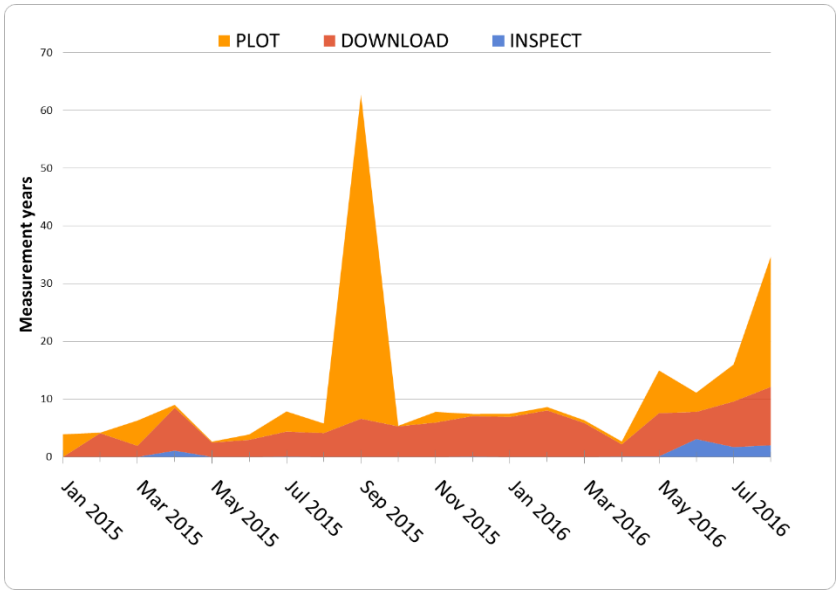

Figure 22: Number of years with all NRT level 1.5 data sets plotted (yellow), downloaded (red), and inspected (blue).

Table 18: Summary of access to NOxy. INSPECT gives number of time there has been inspection of measurement data values in the web interface, DOWNLOAD gives the numbers of measurement years of data downloaded, and PLOT is the number of times data are plotted in the web interface

	Aerosol NRT		
	INSPECT	**DOWNLOAD**	**PLOT**
Monthly average	0.4	7	6
Total years	9	137	115
Time interval	**2015-01-01 - 2016-09-01**		

There has been a significant increase in the number of accesses over the period, due to the increasing availability of these data. Most access last 3 months.

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2.5 Monitoring of access to ACTRIS Data Portal

On average in 2016 there are 260 different users accessing the ACTRIS data portal each month, and ca 9800 visits in the portal since the start of ACTRIS-2 until end of 2016. UK has used the portal extensively, and the fractionated use is shown in Figure 23. In total users from more than 50 countries visited the portal since ACTRIS started in May 2015. The geographical distribution of the percentage distribution of the users in 2016 is shown in the upper panel, and the monthly access distribution is shown in the lower panel. A dynamic version of the map with more information is available from here: https://actris.github.io/actris-statistics/

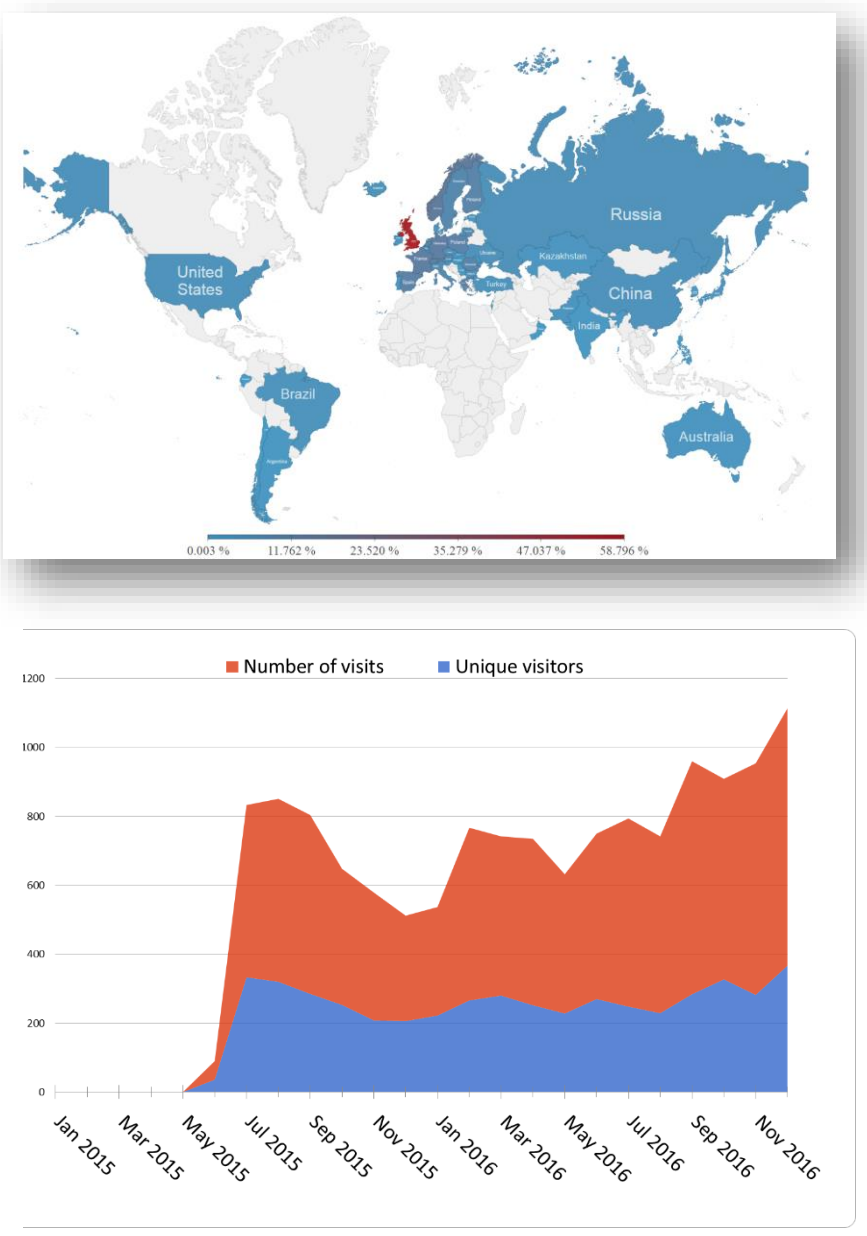

Figure 23: The map in the upper panel shows the percentage distribution of the users in 2016, and the monthly access evolution is shown in the lower panel, both total visits (orange) and unique users (blue). In total users from more than 50 countries visited the portal since ACTRIS started in May 2015.

Table 19: Summary of access to ACTRIS Data Portal http://actris.nilu.no/

ACTRIS Data Portal		
	Unique visitors	**Number of visits**
Monthly average	216	409
Total access		9804
Time interval	**2015-01-01 - 2016-12-31**	

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