
NBS monthly report

MET Norway - NBS team

Dec 07, 2023

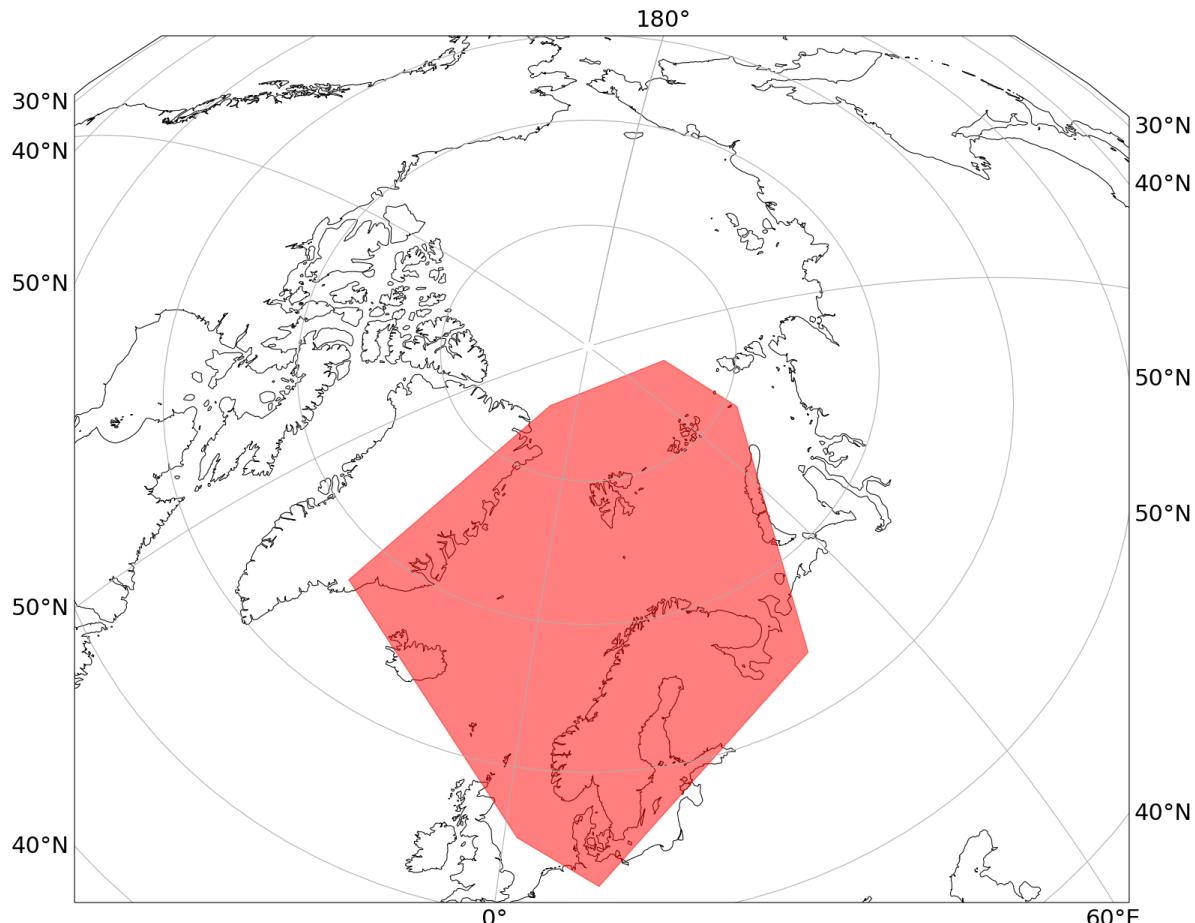
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NBS mothly report for December 2023

The NBS project

The European Space Agency (ESA) is in charge for the distribution of data from the Sentinel satellite constellation. In order to maintain a reliable and sustainable data hub, the creation and operation of multiples data hubs is necessary. With the purpose of keeping and maintaining a reliable and online source of data from the ESA Sentinel constellation for an Area Of Interest (AOI) covering Norway, the Norwegian Space Agency (NOSA) funded the National Bakke Segment (NBS) project. The map below is indicating the AOI in red.



Therefore, MET Norway was contracted for the operation of the NBS data. The NBS is implementd as a part of the operational infrastructure at MET Norway. As so it follows the normal procedures for planning, implementation and testing , and operationalisation. User access to the NBS is configured according to NOSA requirements. This includes the use of ESA's DHuS software for synchronization between ESA and user accessibility.

The present report is part of MET Norway duties to inform about its perfomance as operator of the NBS. Monthly reports will be created mothly to regularly comunicate the status of MET Norway's NBS.

The Sentinel products

The NBS project includes the management of the data received from Sentinel-1 (S1), Sentinel-2, Sentinel-3 (S3) and Sentinel-5p (S5p) satellites for the especified AOI. Each of the Sentinels has different operational modes for achieving

images with different characteristics. Those images can have different processing levels. The products included in the DHR are Level-1 images for all the Sentinels except for Sentinel-2. For which Level-1 (S2L1C) and Level-2 (S2L2A) are both included in the NBS.

BackEnds and FrontEnds

As operator of NBS, the source of Sentinel data is ESA; and ESA spreads the Sentinel data through the data hub Scihub (scihub.copernicus.eu). Scihub is ESA's FrontEnd (FE) for Sentinel data accessibility. MET Norway uses the DHS software for synchronization and creation of other FrontEnds. During the synchronization process a BackEnd (BE) is created. MET Norway is also running two FEs, colhub.met.no and colhub-archive.met.no. The colhub FE includes or will include all the products mentioned for Sentinel global products plus S3 marine products from Copernicus, S1 products from the Kongsberg Satellite Services (KSAT), and S2 Digital Elevation Model (DEM). The colhub-archive FE includes data from S1, S2L1C, S2L2A, S2DEM, S3, S5p products for the AOI. An important distinction between both FEs is that colhub-archive will always maintain available online all the products for the AOI.

In order to maintain an accountability on products synchronized from ESA's Scihub and available for users at the different FEs, it is necessary to understand the architecture of MET Norway's DHR.

**CHAPTER
ONE**

ACRONYMS

Here follows a formatted list of acronyms.

BE BackEnd

DEM Digital Elevation Model

DHuS Data Hub Software

ESA European Space Agency

FE FrontEnd

KSAT Kongsberg Satellite Services

MET Norway Meteorological Institute of Norway

S1 Sentinel-1

S2 Sentinel-2

S2L1C Sentinel-2 Level-1 C

S2L2A Sentinel-2 Level-2 A

S3 Sentinel-3

S5p Sentinel-5p

NBS mothly report for December 2023

**CHAPTER
TWO**

QUICK SUMMARY

The table below shows a short overview of the NBS performance operation during the last 30 days. The three different FEs and the BE are included. All columns represents the number of products in each portal excepting the last 3 columns. Those 3 columns represents the data flow from MET Norway to users through the portals where Volumes are measured in Tb.

Portals	S1	S2L1C	S2L2A	S3	S5p	Nb of users	Nb of products	Volume
colhub.met.no	2658	1093	1103	2406	8726	0	0	0.000
colhub-archive.met.no	2654	1078	1088	2390	8635	0	0	0.000
scihub.copernicus.eu	0	0	0	0	6425	-	-	-
MET Norway BE	0	0	0	0	0	-	-	-

Finally, the total amount of disk space dedicated to the NBS project, including either products in SAFE and NetCDF formats, represents 5014 Tb.

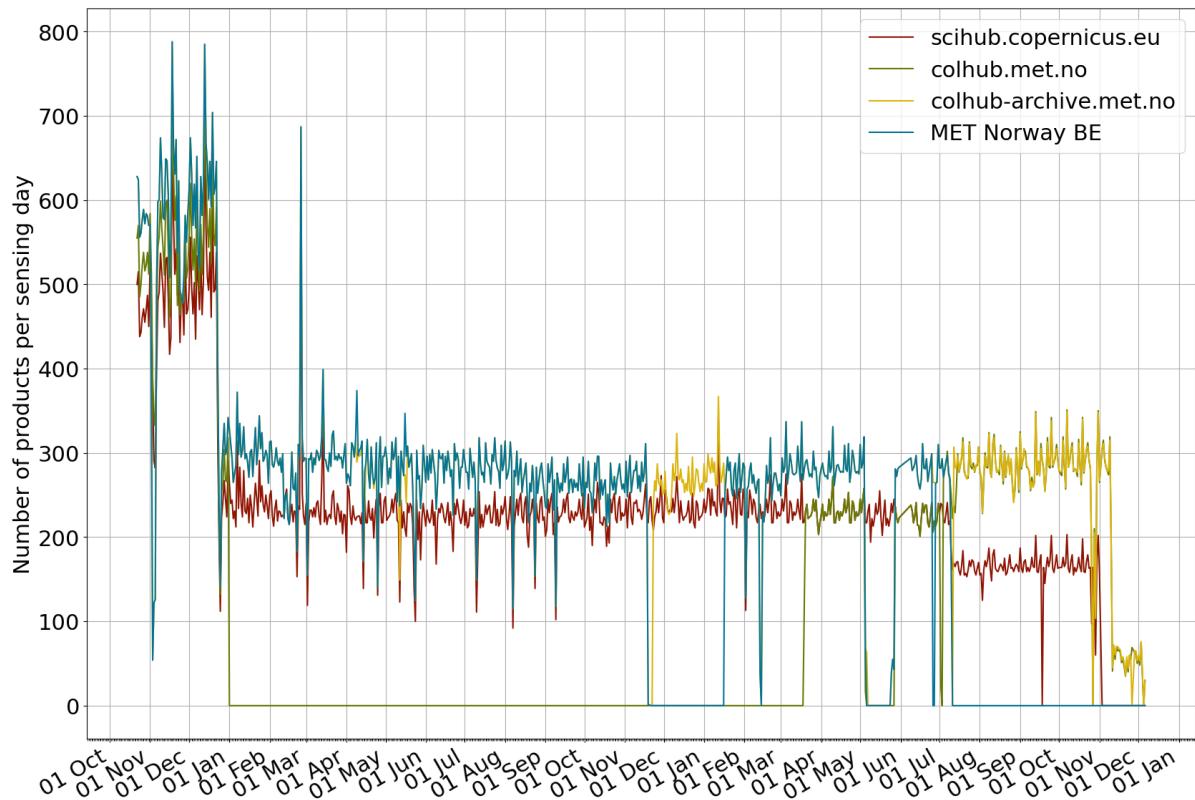
Due to tracking the data ingested and produced for the NBS project in the last year it is possible to forecast the upcoming need for disk space. As long as data flows follows the same pattern than last year, in 6 months the total disk space will grow until 6299 Tb; while in 12 months it is forecasted to become 6619 Tb.

SENTINEL-1 PRODUCTS

This section shows the performance of MET Norway for Sentinel-1 products. Both, an overall status and last month status are shown below.

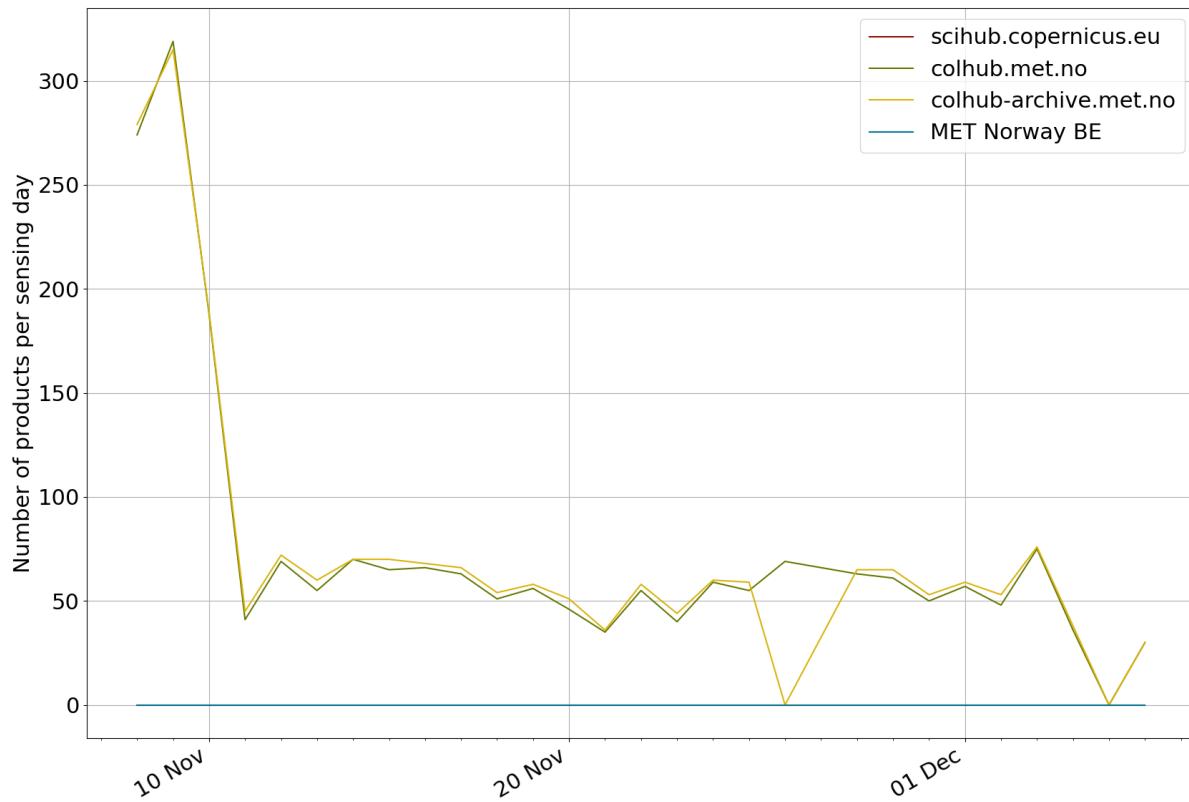
3.1 Products on portals

The following section contains an update on the Sentinel-1 products included in the different FEs and BEs.



The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-1.

While the figure below shows a zoom on the last 30 days.



A 30 days table is also included for more detailed information.

sensing_date	colhub.met.no	scihub.copernicues.eu	colhub-archive.met.no	\
2023-11-06	283	0.0	283.0	
2023-11-07	279	0.0	278.0	
2023-11-08	274	0.0	279.0	
2023-11-09	319	0.0	315.0	
2023-11-10	188	0.0	189.0	
2023-11-11	41	0.0	45.0	
2023-11-12	69	0.0	72.0	
2023-11-13	55	0.0	60.0	
2023-11-14	70	0.0	70.0	
2023-11-15	65	0.0	70.0	
2023-11-16	66	0.0	68.0	
2023-11-17	63	0.0	66.0	
2023-11-18	51	0.0	54.0	
2023-11-19	56	0.0	58.0	
2023-11-20	46	0.0	51.0	
2023-11-21	35	0.0	36.0	
2023-11-22	55	0.0	58.0	
2023-11-23	40	0.0	44.0	
2023-11-24	59	0.0	60.0	
2023-11-25	55	0.0	59.0	
2023-11-26	69	0.0	0.0	
2023-11-27	63	0.0	65.0	
2023-11-28	61	0.0	65.0	
2023-11-29	50	0.0	53.0	
2023-11-30	57	0.0	59.0	
2023-12-01				(continues on next page)

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2023-12-02	48	0.0	53.0
2023-12-03	75	0.0	76.0
2023-12-04	36	0.0	38.0
2023-12-05	0	0.0	0.0
2023-12-06	30	0.0	30.0

MET Norway BE			
sensing_date			
2023-11-06		0.0	
2023-11-07		0.0	
2023-11-08		0.0	
2023-11-09		0.0	
2023-11-10		0.0	
2023-11-11		0.0	
2023-11-12		0.0	
2023-11-13		0.0	
2023-11-14		0.0	
2023-11-15		0.0	
2023-11-16		0.0	
2023-11-17		0.0	
2023-11-18		0.0	
2023-11-19		0.0	
2023-11-20		0.0	
2023-11-21		0.0	
2023-11-22		0.0	
2023-11-23		0.0	
2023-11-24		0.0	
2023-11-25		0.0	
2023-11-26		0.0	
2023-11-28		0.0	
2023-11-29		0.0	
2023-11-30		0.0	
2023-12-01		0.0	
2023-12-02		0.0	
2023-12-03		0.0	
2023-12-04		0.0	
2023-12-05		0.0	
2023-12-06		0.0	

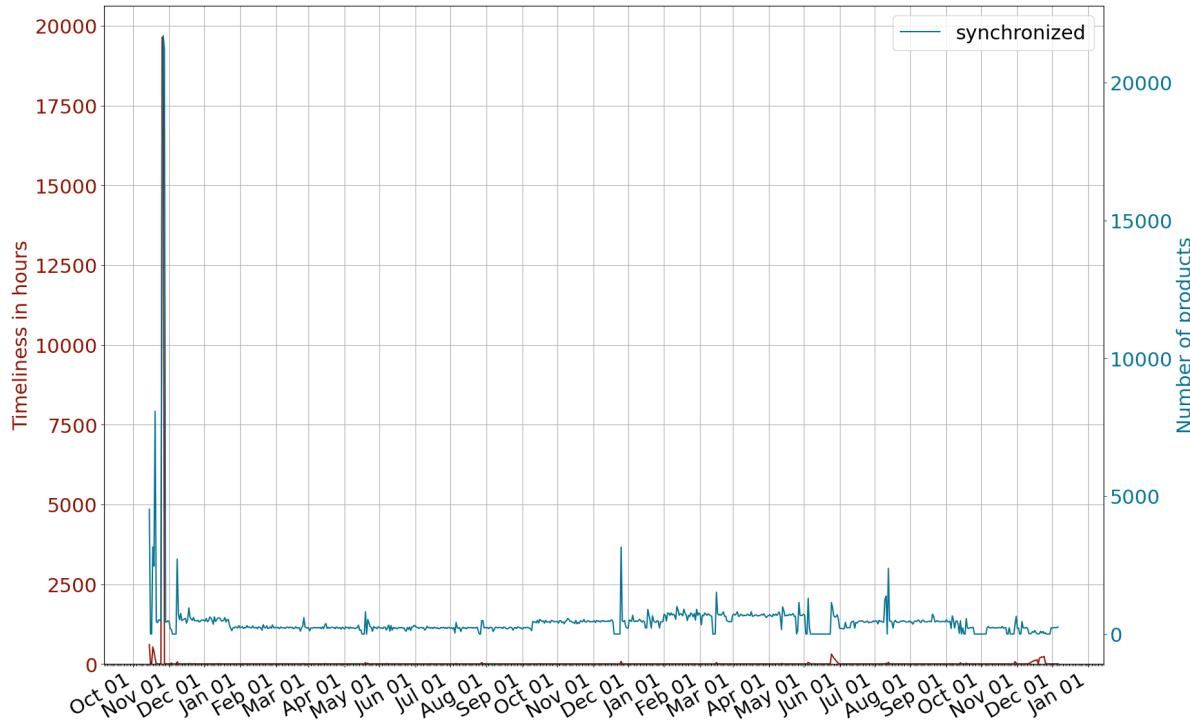
3.2 Missing products

The overall total number of Sentinel-1 products is 28275383. The number of overall Sentinel-1 missing products consists of 26029346 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

The total number of Sentinel-1 products in the last 30 days is 28275383. The number of Sentinel-1 missing products during the last 30 days consists of 26030112 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

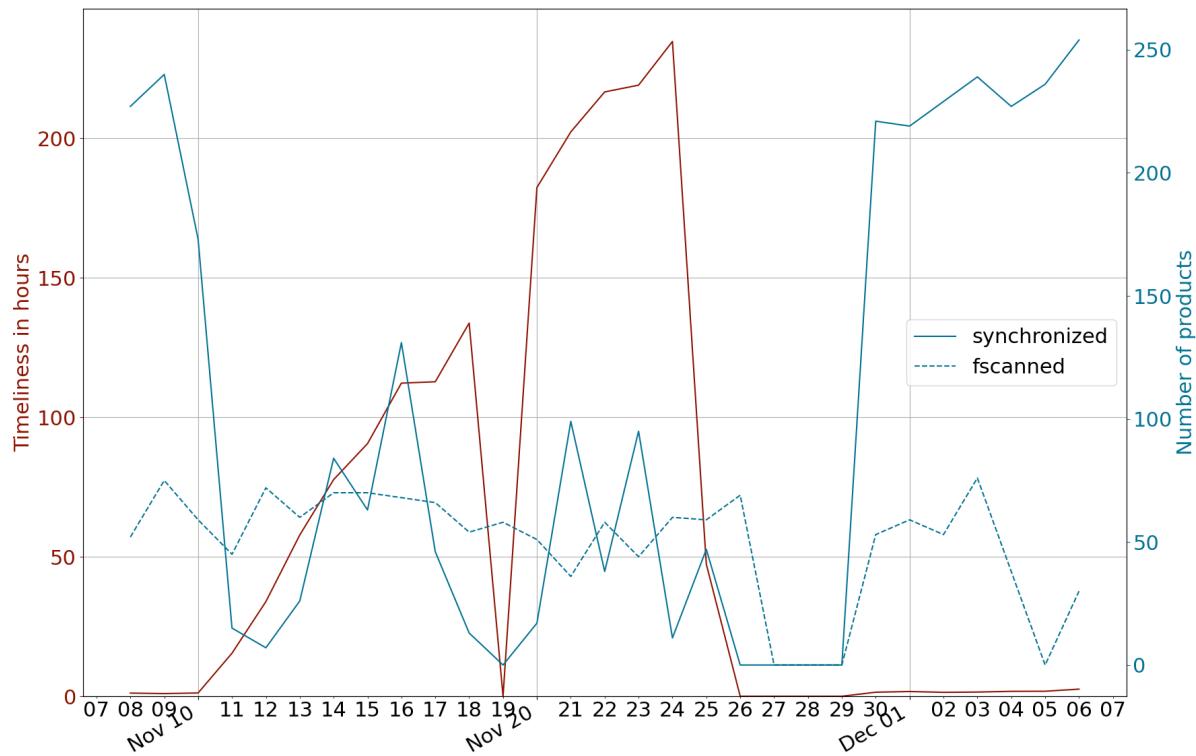
3.3 Data ingestion

In this section the time difference between sensing time and ingestion time at MET norway is assessed. The ingestion time is the time at which a Sentinel product was downloaded to MET Norway BE and so, it is automatically available in at least one of the MET Norway FEs.



The figure above shows an overall status of the Sentinel-1 synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last 30 days for the synchronization between ESA datahub and MET Norway BE.



A more detailed information is given in the table below where the last 30 days are assessed for products synchronized from ESA.

day	size	number	timeliness
2023-11-07	330.065935	219	0.972964
2023-11-08	307.589884	227	1.139506
2023-11-09	352.627083	240	0.958345
2023-11-10	265.384369	173	1.180883
2023-11-11	63.824515	15	15.432398
2023-11-12	11.521272	7	33.916689
2023-11-13	68.882293	26	57.801575
2023-11-14	198.327530	84	77.657037
2023-11-15	152.446587	63	90.561755
2023-11-16	311.858780	131	112.234603
2023-11-17	67.839693	46	112.726231
2023-11-18	81.310196	13	133.770630
2023-11-19	0.000000	0	0.000000
2023-11-20	49.242107	17	182.355458
2023-11-21	194.918099	99	202.287672
2023-11-22	46.366550	38	216.613150
2023-11-23	230.654759	95	219.043814
2023-11-24	14.056912	11	234.701554
2023-11-25	129.329768	47	47.328096
2023-11-26	0.000000	0	0.000000
2023-11-27	0.000000	0	0.000000
2023-11-28	0.000000	0	0.000000
2023-11-29	0.000000	0	0.000000
2023-11-30	486.677641	221	1.449643
2023-12-01	546.862815	219	1.701504
2023-12-02	521.007314	229	1.404731

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2023-12-03	581.825438	239	1.504573
2023-12-04	565.427681	227	1.763960
2023-12-05	599.353015	236	1.796004
2023-12-06	680.006079	254	2.553949

It is also given extra information in the table below where the last 30 days are assessed for products synchronized from KSAT.

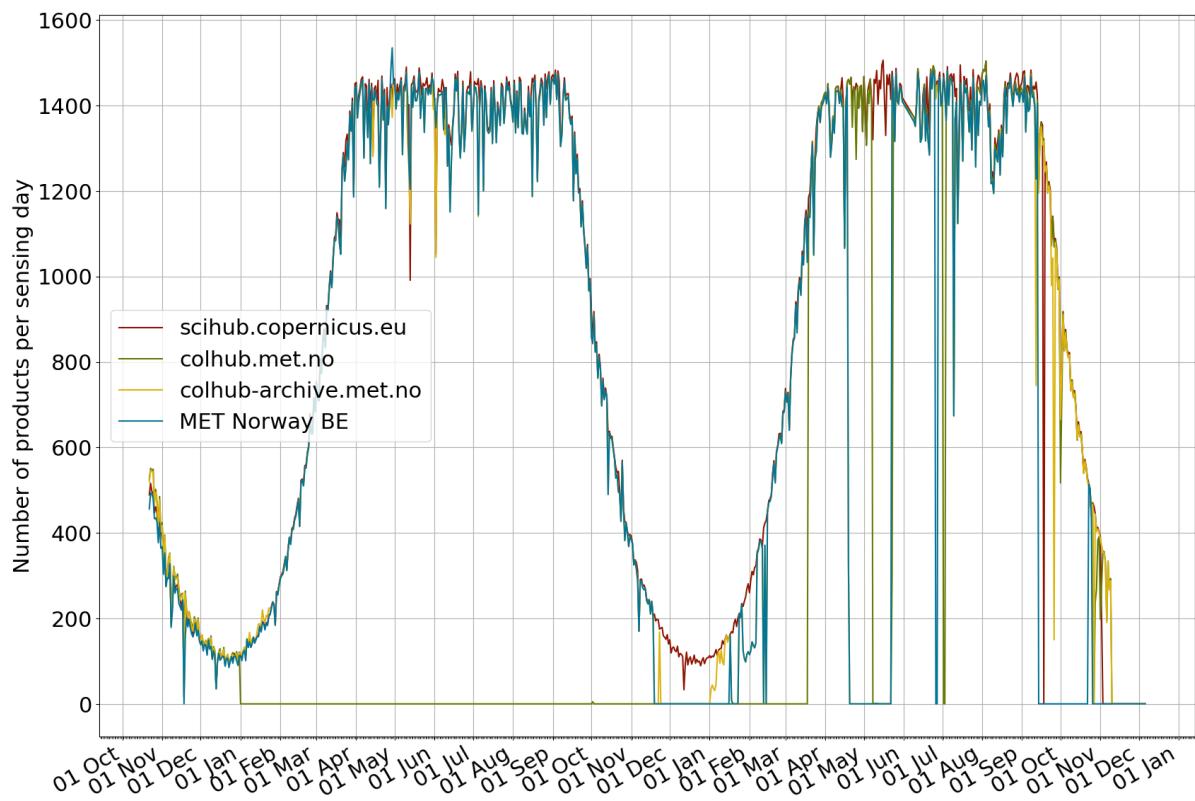
day	size	number	timeliness
2023-11-07	73.725931	59	0.806074
2023-11-08	56.199789	52	0.690932
2023-11-09	71.592676	75	0.674928
2023-11-10	71.177996	59	0.662549
2023-11-11	57.791104	45	0.779619
2023-11-12	84.455101	72	0.771927
2023-11-13	54.575141	60	0.618561
2023-11-14	76.708853	70	0.669404
2023-11-15	81.214168	70	0.772807
2023-11-16	75.207100	68	0.662448
2023-11-17	78.184278	66	0.689080
2023-11-18	53.726294	54	0.580928
2023-11-19	73.625401	58	0.764443
2023-11-20	55.945775	51	0.686385
2023-11-21	69.311962	36	0.554235
2023-11-22	71.706136	58	0.673368
2023-11-23	57.565743	44	0.811575
2023-11-24	81.103828	60	0.809681
2023-11-25	54.540347	59	0.619887
2023-11-26	76.018935	69	0.670055
2023-11-27	0.000000	0	0.000000
2023-11-28	0.000000	0	0.000000
2023-11-29	0.000000	0	0.000000
2023-11-30	44.222555	53	0.546826
2023-12-01	73.777495	59	0.812562
2023-12-02	55.236019	53	0.663210
2023-12-03	76.974418	76	0.673558
2023-12-04	50.226574	38	0.676961
2023-12-05	0.000000	0	0.000000
2023-12-06	30.371363	30	0.682418

SENTINEL-2 LEVEL-1C PRODUCTS

This section shows the performance of MET Norway for Sentinel-2 Level-1C products. Both, an overall status and last month status are shown below.

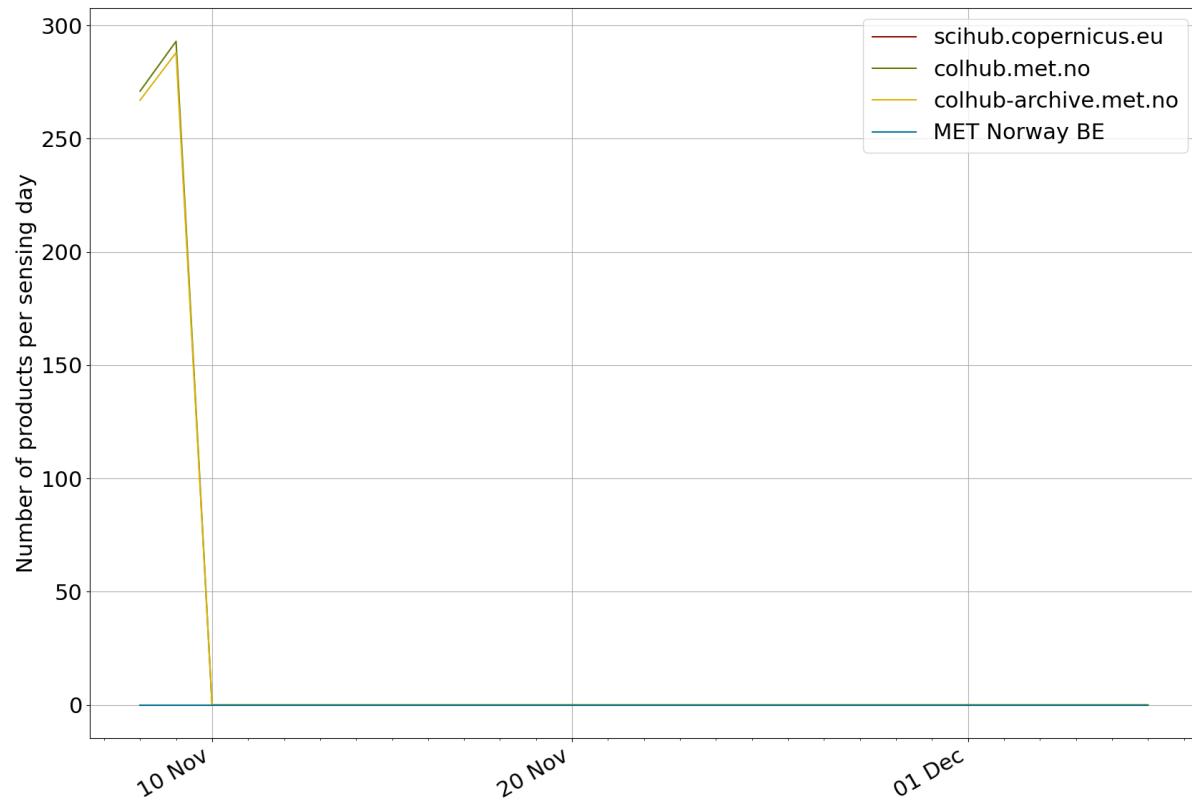
4.1 Products on portals

The following section contains an update on the Sentinel-2 Level-1C products included in the different FEs and BEs.



The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-2 Level-1C.

While the figure below shows a zoom on the last 30 days.



A 30 days table is also included for more detailed information.

sensing_date	colhub.met.no	scihub.copernicues.eu	colhub-archive.met.no	\
2023-11-06	195	0.0	190.0	
2023-11-07	334	0.0	333.0	
2023-11-08	271	0.0	267.0	
2023-11-09	293	0.0	288.0	
2023-11-10	0	0.0	0.0	
2023-11-11	0	0.0	0.0	
2023-11-12	0	0.0	0.0	
2023-11-13	0	0.0	0.0	
2023-11-14	0	0.0	0.0	
2023-11-15	0	0.0	0.0	
2023-11-16	0	0.0	0.0	
2023-11-17	0	0.0	0.0	
2023-11-18	0	0.0	0.0	
2023-11-19	0	0.0	0.0	
2023-11-20	0	0.0	0.0	
2023-11-21	0	0.0	0.0	
2023-11-22	0	0.0	0.0	
2023-11-23	0	0.0	0.0	
2023-11-24	0	0.0	0.0	
2023-11-25	0	0.0	0.0	
2023-11-26	0	0.0	0.0	
2023-11-28	0	0.0	0.0	
2023-11-29	0	0.0	0.0	
2023-11-30	0	0.0	0.0	
2023-12-01	0	0.0	0.0	

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2023-12-02	0	0.0	0.0
2023-12-03	0	0.0	0.0
2023-12-04	0	0.0	0.0
2023-12-05	0	0.0	0.0
2023-12-06	0	0.0	0.0
MET Norway BE			
sensing_date			
2023-11-06	0.0		
2023-11-07	0.0		
2023-11-08	0.0		
2023-11-09	0.0		
2023-11-10	0.0		
2023-11-11	0.0		
2023-11-12	0.0		
2023-11-13	0.0		
2023-11-14	0.0		
2023-11-15	0.0		
2023-11-16	0.0		
2023-11-17	0.0		
2023-11-18	0.0		
2023-11-19	0.0		
2023-11-20	0.0		
2023-11-21	0.0		
2023-11-22	0.0		
2023-11-23	0.0		
2023-11-24	0.0		
2023-11-25	0.0		
2023-11-26	0.0		
2023-11-28	0.0		
2023-11-29	0.0		
2023-11-30	0.0		
2023-12-01	0.0		
2023-12-02	0.0		
2023-12-03	0.0		
2023-12-04	0.0		
2023-12-05	0.0		
2023-12-06	0.0		

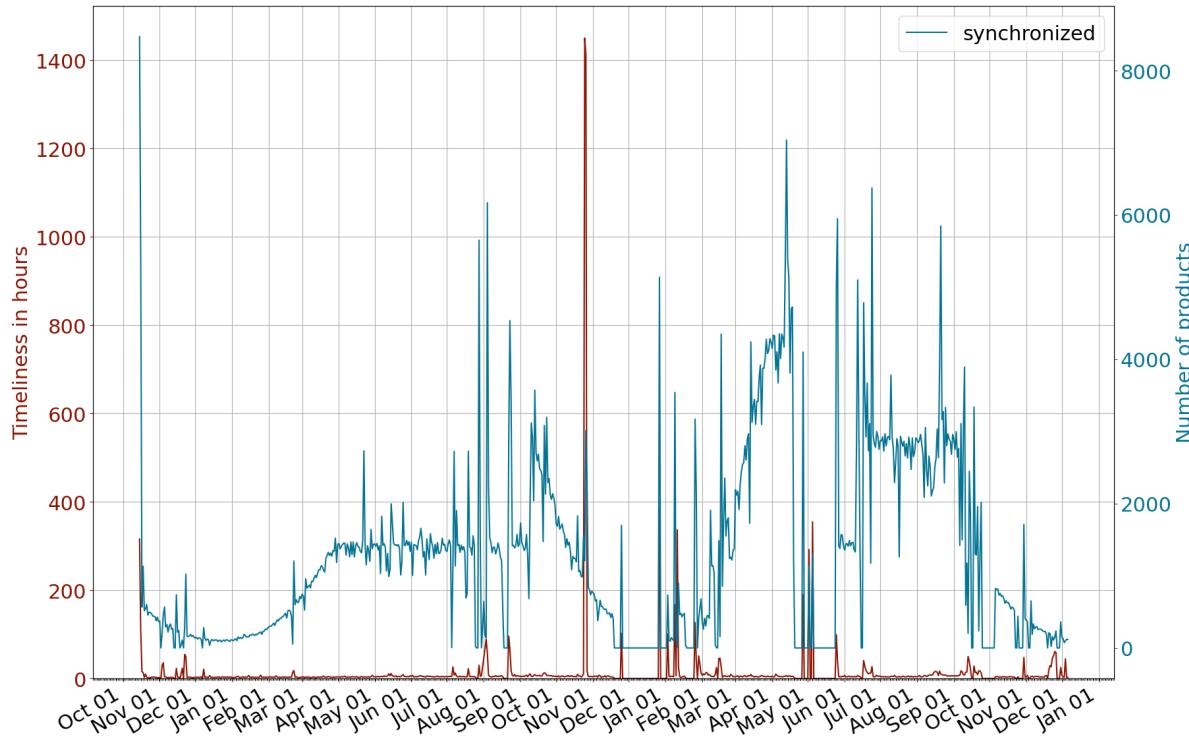
4.2 Missing products

The overall total number of Sentinel-2 Level-1C products is 28275383. The number of overall Sentinel-2 Level-1C missing products consists of 26029346 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

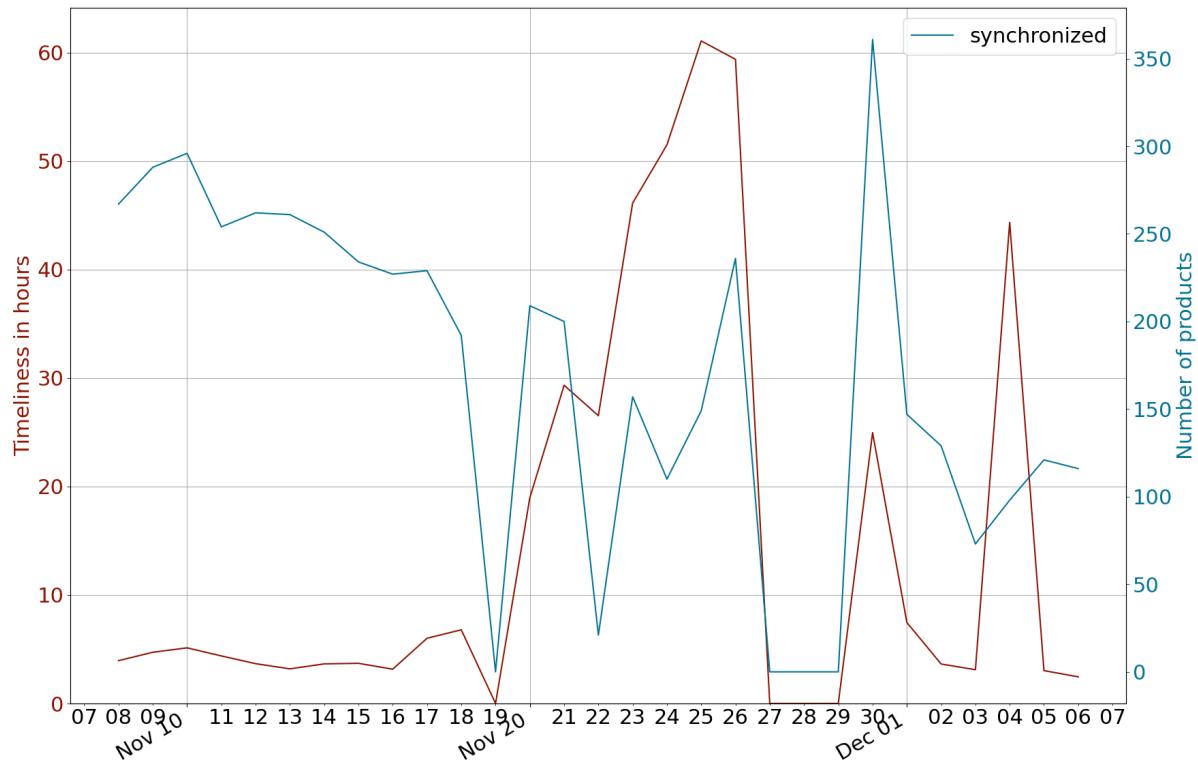
The total number of Sentinel-2 Level-1C products in the last 30 days is 28275383. The number of Sentinel-2 Level-1C missing products during the last 30 days consists of 26030112 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

4.3 Data ingestion

In this section the time difference between sensing time and ingestion time at MET norway is assessed. The ingestion time is the time at which a Sentinel product was downloaded to MET Norway BE and so, it is automatically available in at least one of the MET Norway FEs.



Following previous sections, the graph below shows a zoom in the last 30 days for the synchronization between ESA datahub and MET Norway BE.



A more detailed information is given in the table below where the last 30 days are assessed for products synchronized from ESA.

day	size	number	timeliness
2023-11-07	151.681874	333	3.258253
2023-11-08	125.747683	267	3.945383
2023-11-09	132.564068	288	4.717263
2023-11-10	128.964512	296	5.129273
2023-11-11	117.313962	254	4.381448
2023-11-12	127.733747	262	3.669513
2023-11-13	115.660112	261	3.192290
2023-11-14	114.127587	251	3.649972
2023-11-15	111.305050	234	3.701655
2023-11-16	110.098514	227	3.159830
2023-11-17	112.752569	229	6.009297
2023-11-18	96.394335	192	6.790357
2023-11-19	0.000000	0	0.000000
2023-11-20	101.277335	209	18.964207
2023-11-21	93.756010	200	29.336751
2023-11-22	8.505969	21	26.534324
2023-11-23	76.922383	157	46.136823
2023-11-24	49.917539	110	51.500760
2023-11-25	73.946408	149	61.084385
2023-11-26	115.173026	236	59.389796
2023-11-27	0.000000	0	0.000000
2023-11-28	0.000000	0	0.000000
2023-11-29	0.000000	0	0.000000
2023-11-30	171.301155	361	24.970853
2023-12-01	70.114175	147	7.467680
2023-12-02	64.737325	129	3.637732

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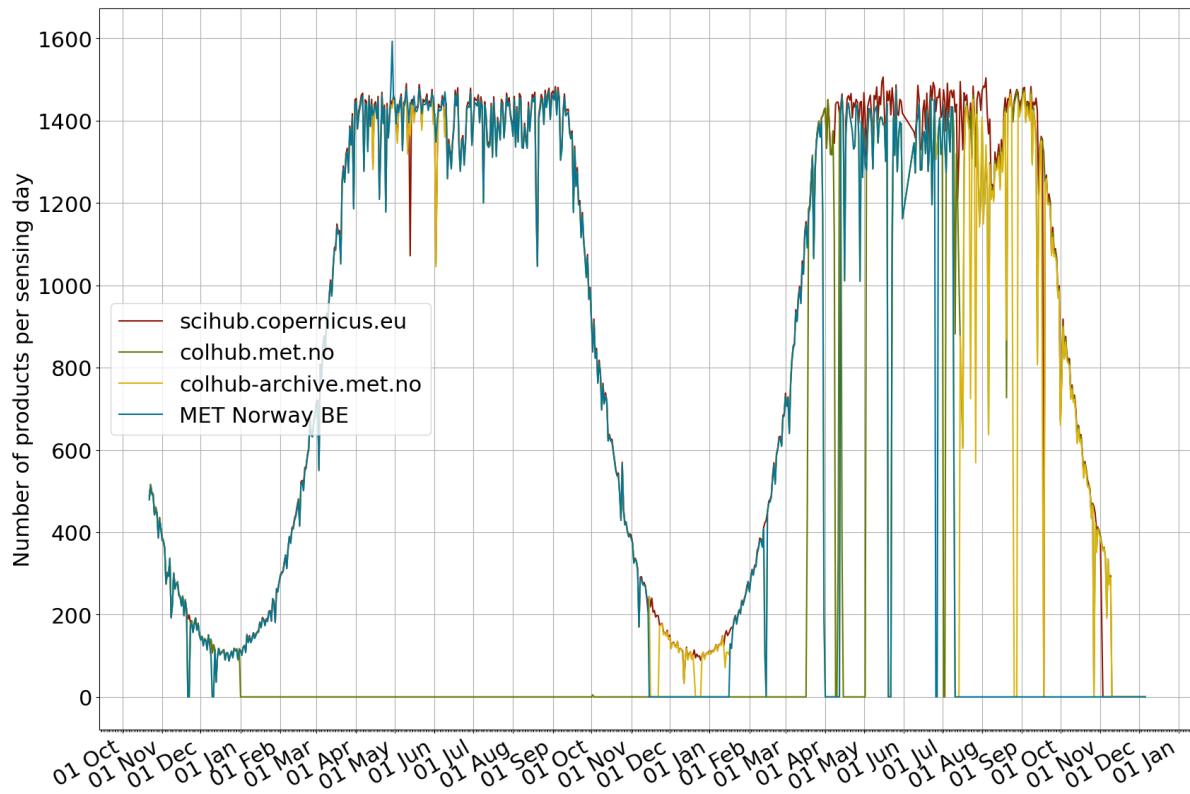
2023-12-03	39.498407	73	3.112461
2023-12-04	42.711347	98	44.350754
2023-12-05	55.221507	121	3.026266
2023-12-06	56.443432	116	2.456582

SENTINEL-2 LEVEL-2A PRODUCTS

This section shows the performance of MET Norway for Sentinel-2 Level-2A products. Both, an overall status and last month status are shown below.

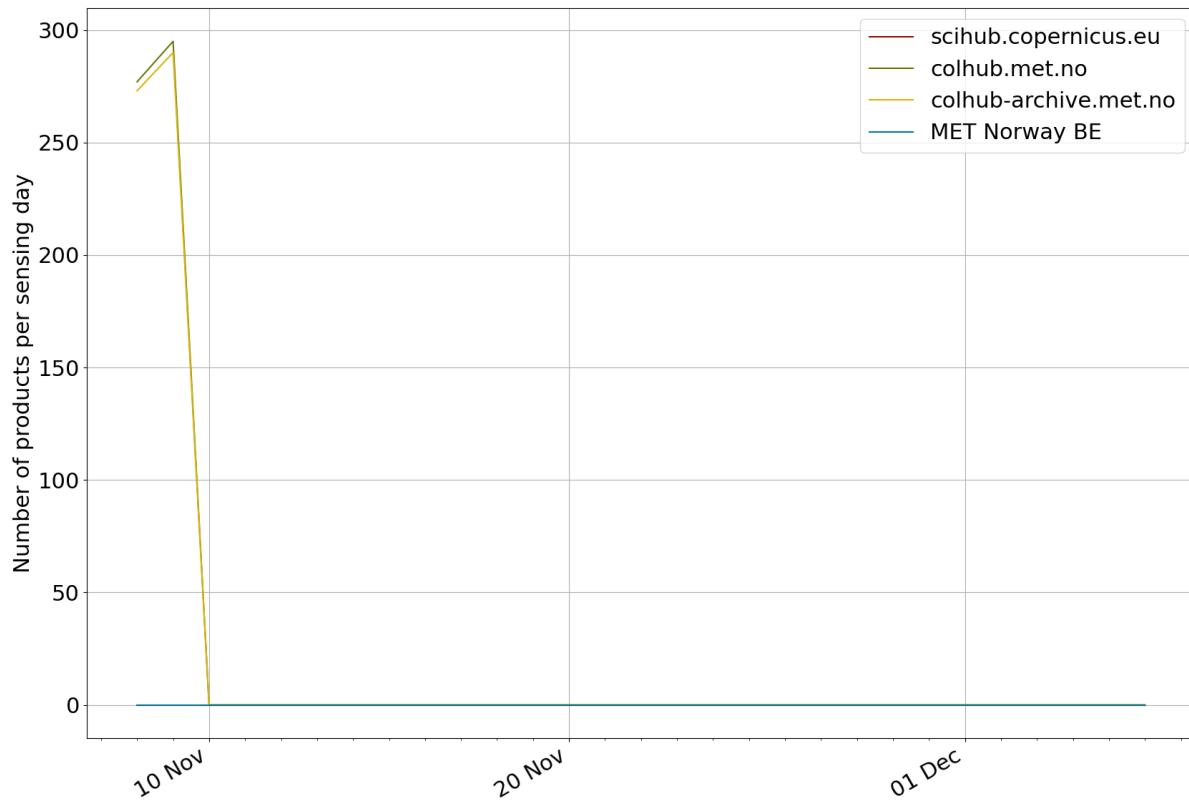
5.1 Products on portals

The following section contains an update on the Sentinel-2 Level-2A products included in the different FEs and BEs.



The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-2 Level-2A.

While the figure below shows a zoom on the last 30 days.



A 30 days table is also included for more detailed information.

sensing_date	colhub.met.no	scihub.copernicues.eu	colhub-archive.met.no	\
2023-11-06	196	0.0	191.0	
2023-11-07	335	0.0	334.0	
2023-11-08	277	0.0	273.0	
2023-11-09	295	0.0	290.0	
2023-11-10	0	0.0	0.0	
2023-11-11	0	0.0	0.0	
2023-11-12	0	0.0	0.0	
2023-11-13	0	0.0	0.0	
2023-11-14	0	0.0	0.0	
2023-11-15	0	0.0	0.0	
2023-11-16	0	0.0	0.0	
2023-11-17	0	0.0	0.0	
2023-11-18	0	0.0	0.0	
2023-11-19	0	0.0	0.0	
2023-11-20	0	0.0	0.0	
2023-11-21	0	0.0	0.0	
2023-11-22	0	0.0	0.0	
2023-11-23	0	0.0	0.0	
2023-11-24	0	0.0	0.0	
2023-11-25	0	0.0	0.0	
2023-11-26	0	0.0	0.0	
2023-11-28	0	0.0	0.0	
2023-11-29	0	0.0	0.0	
2023-11-30	0	0.0	0.0	
2023-12-01	0	0.0	0.0	

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2023-12-02	0	0.0	0.0
2023-12-03	0	0.0	0.0
2023-12-04	0	0.0	0.0
2023-12-05	0	0.0	0.0
2023-12-06	0	0.0	0.0
MET Norway BE			
sensing_date			
2023-11-06	0.0		
2023-11-07	0.0		
2023-11-08	0.0		
2023-11-09	0.0		
2023-11-10	0.0		
2023-11-11	0.0		
2023-11-12	0.0		
2023-11-13	0.0		
2023-11-14	0.0		
2023-11-15	0.0		
2023-11-16	0.0		
2023-11-17	0.0		
2023-11-18	0.0		
2023-11-19	0.0		
2023-11-20	0.0		
2023-11-21	0.0		
2023-11-22	0.0		
2023-11-23	0.0		
2023-11-24	0.0		
2023-11-25	0.0		
2023-11-26	0.0		
2023-11-28	0.0		
2023-11-29	0.0		
2023-11-30	0.0		
2023-12-01	0.0		
2023-12-02	0.0		
2023-12-03	0.0		
2023-12-04	0.0		
2023-12-05	0.0		
2023-12-06	0.0		

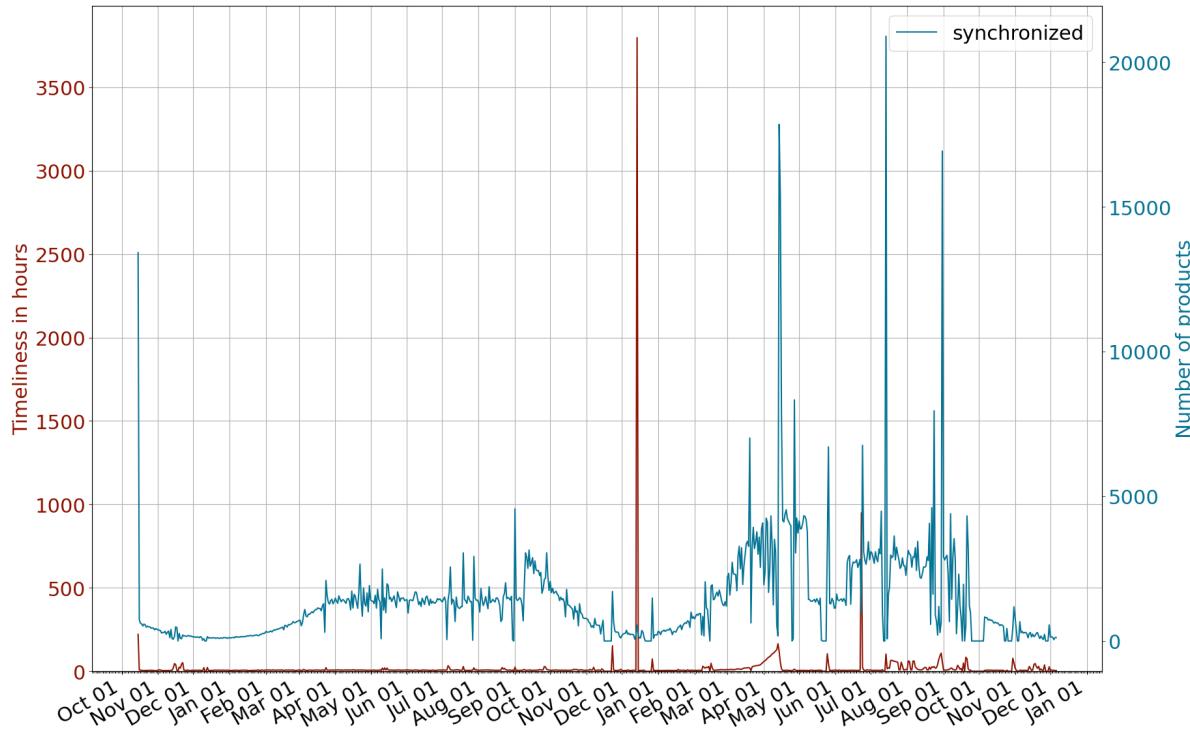
5.2 Missing products

The overall total number of Sentinel-2 Level-2A products is 28275383. The number of overall Sentinel-2 Level-2A missing products consists of 26029346 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

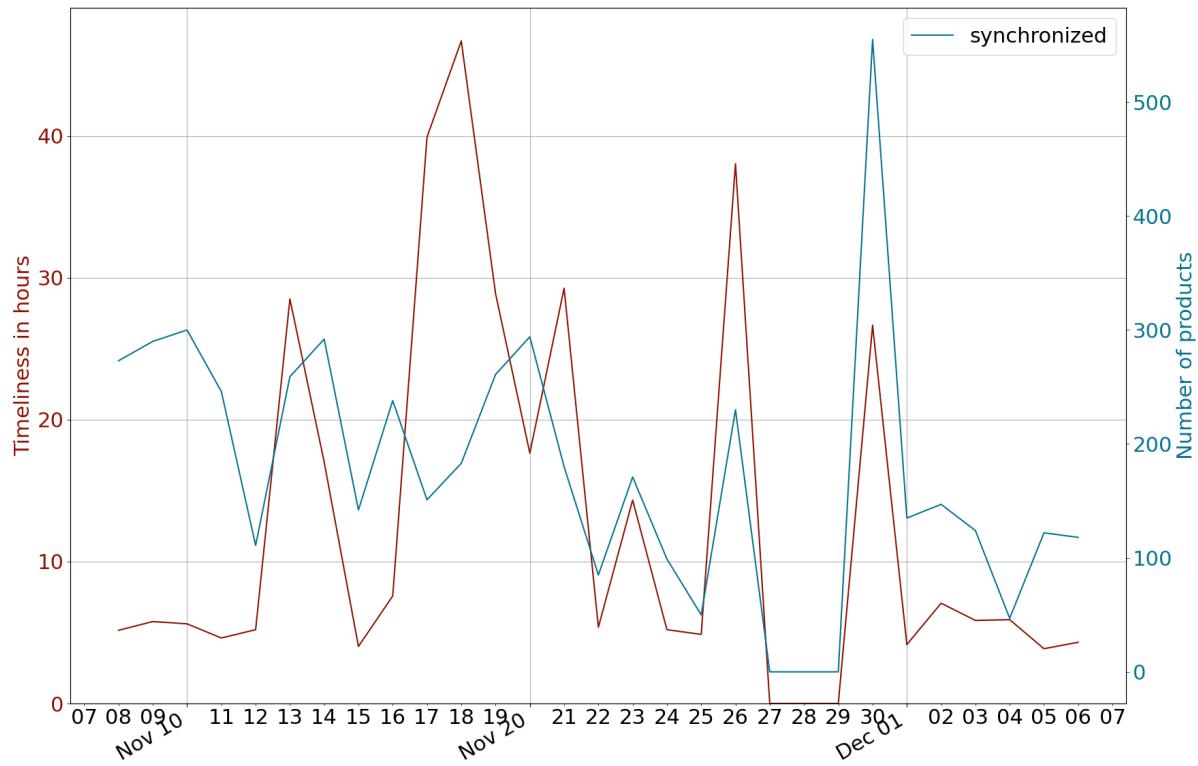
The total number of Sentinel-2 level-2A products in the last 30 days is 28275383. The number of Sentinel-2 Level-2A missing products during the last 30 days consists of 26030112 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

5.3 Data ingestion

In this section the time difference between sensing time and ingestion time at MET norway is assessed. The ingestion time is the time at which a Sentinel product was downloaded to MET Norway BE and so, it is automatically available in at least one of the MET Norway FEs.



Following previous sections, the graph below shows a zoom in the last 30 days for the synchronization between ESA datahub and MET Norway BE.



A more detailed information is given in the table below where the last 30 days are assessed for products synchronized from ESA.

day	size	number	timeliness
2023-11-07	190.607343	334	4.237724
2023-11-08	159.834955	273	5.156798
2023-11-09	165.733099	290	5.772668
2023-11-10	162.371277	300	5.612555
2023-11-11	142.368633	246	4.614094
2023-11-12	67.980167	111	5.201007
2023-11-13	149.639818	259	28.509132
2023-11-14	169.477424	292	17.019890
2023-11-15	85.179354	142	4.021108
2023-11-16	140.270216	238	7.573814
2023-11-17	90.539176	151	39.912122
2023-11-18	108.488903	183	46.698364
2023-11-19	167.228905	261	28.887031
2023-11-20	172.160775	294	17.645701
2023-11-21	103.916943	180	29.264855
2023-11-22	44.659313	85	5.372269
2023-11-23	108.541748	171	14.332134
2023-11-24	58.558831	99	5.201296
2023-11-25	37.938420	50	4.868096
2023-11-26	141.644940	230	38.040597
2023-11-27	0.000000	0	0.000000
2023-11-28	0.000000	0	0.000000
2023-11-29	0.000000	0	0.000000
2023-11-30	336.024082	555	26.654134
2023-12-01	81.391240	135	4.151784
2023-12-02	87.274786	147	7.067249

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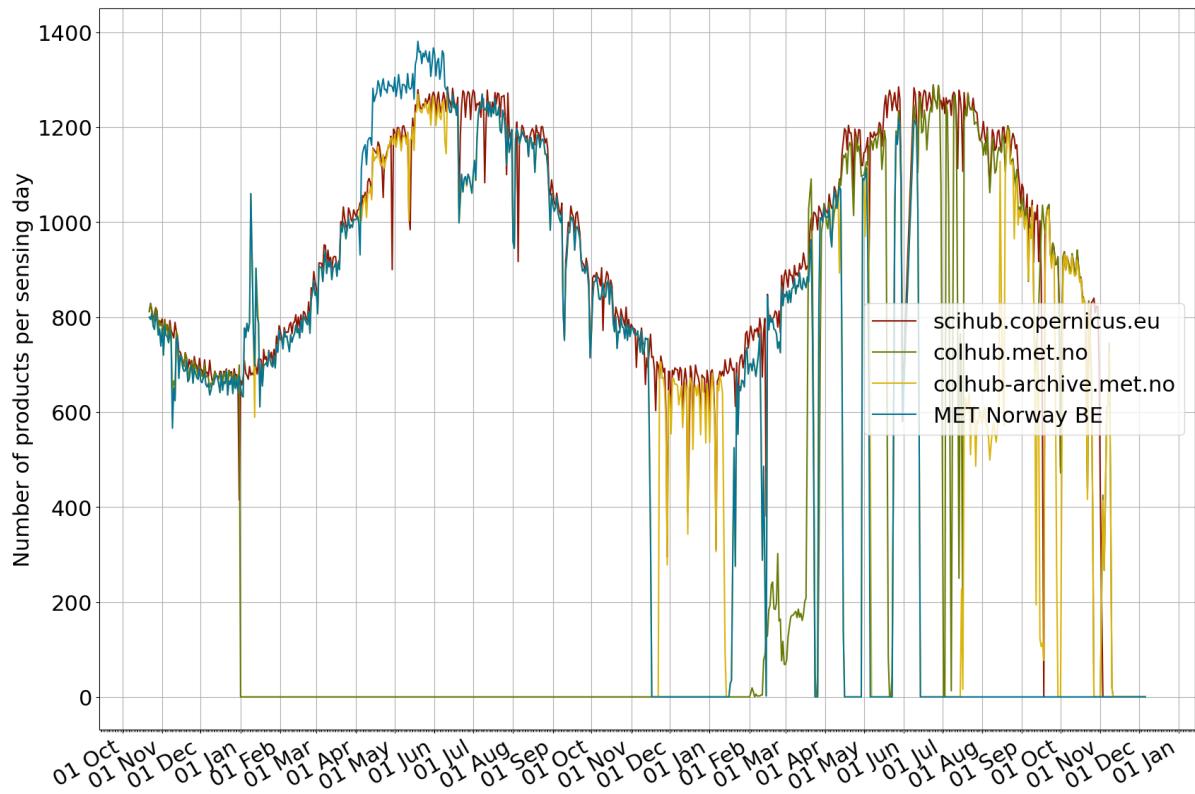
2023-12-03	78.427149	124	5.851365
2023-12-04	24.610815	47	5.908434
2023-12-05	70.167867	122	3.857301
2023-12-06	70.981669	118	4.313907

SENTINEL-3 PRODUCTS

This section shows the performance of MET Norway for Sentinel-3 products. Both, an overall status and last month status are shown below.

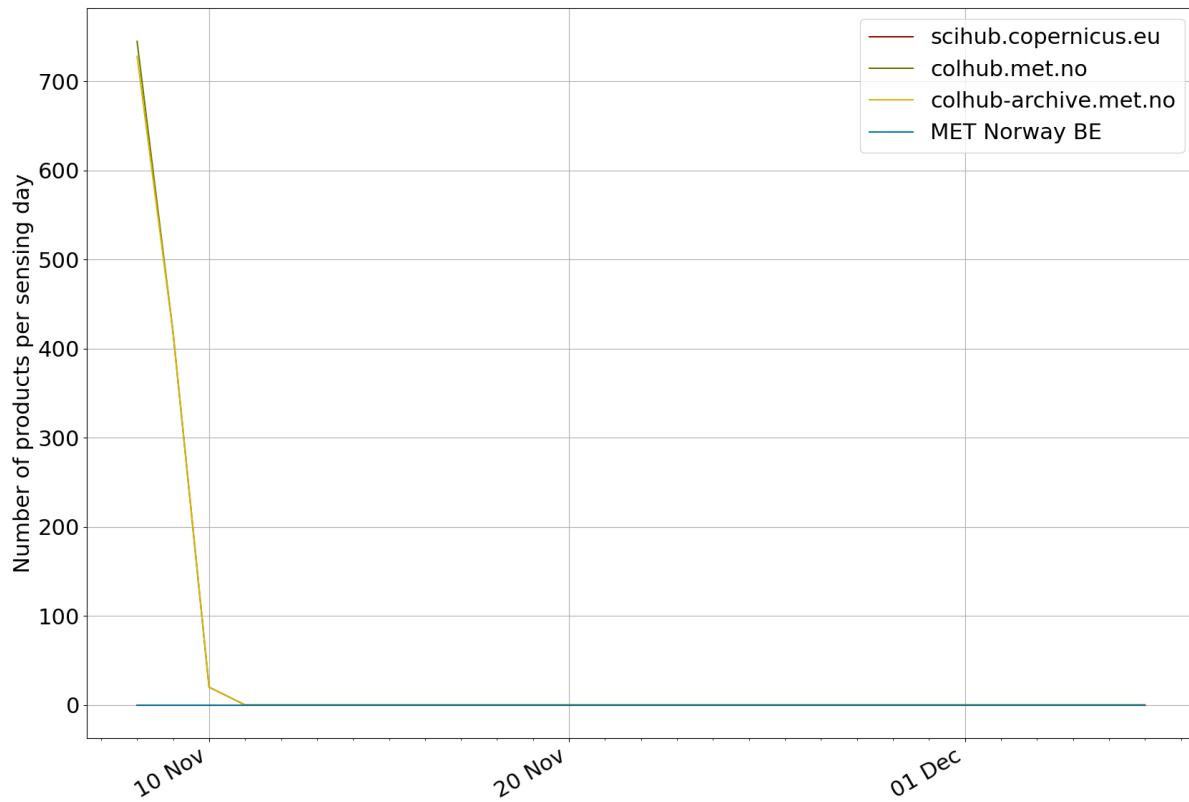
6.1 Products on portals

The following section contains an update on the Sentinel-3 products included in the different FEs and BEs.



The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-3.

While the figure below shows a zoom on the last 30 days.



A 30 days table is also included for more detailed information.

sensing_date	colhub.met.no	scihub.copernicues.eu	colhub-archive.met.no	\
2023-11-06	609	0.0	608.0	
2023-11-07	614	0.0	616.0	
2023-11-08	745	0.0	728.0	
2023-11-09	418	0.0	418.0	
2023-11-10	20	0.0	20.0	
2023-11-11	0	0.0	0.0	
2023-11-12	0	0.0	0.0	
2023-11-13	0	0.0	0.0	
2023-11-14	0	0.0	0.0	
2023-11-15	0	0.0	0.0	
2023-11-16	0	0.0	0.0	
2023-11-17	0	0.0	0.0	
2023-11-18	0	0.0	0.0	
2023-11-19	0	0.0	0.0	
2023-11-20	0	0.0	0.0	
2023-11-21	0	0.0	0.0	
2023-11-22	0	0.0	0.0	
2023-11-23	0	0.0	0.0	
2023-11-24	0	0.0	0.0	
2023-11-25	0	0.0	0.0	
2023-11-26	0	0.0	0.0	
2023-11-28	0	0.0	0.0	
2023-11-29	0	0.0	0.0	
2023-11-30	0	0.0	0.0	
2023-12-01	0	0.0	0.0	

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2023-12-02	0	0.0	0.0
2023-12-03	0	0.0	0.0
2023-12-04	0	0.0	0.0
2023-12-05	0	0.0	0.0
2023-12-06	0	0.0	0.0
MET Norway BE			
sensing_date			
2023-11-06	0.0		
2023-11-07	0.0		
2023-11-08	0.0		
2023-11-09	0.0		
2023-11-10	0.0		
2023-11-11	0.0		
2023-11-12	0.0		
2023-11-13	0.0		
2023-11-14	0.0		
2023-11-15	0.0		
2023-11-16	0.0		
2023-11-17	0.0		
2023-11-18	0.0		
2023-11-19	0.0		
2023-11-20	0.0		
2023-11-21	0.0		
2023-11-22	0.0		
2023-11-23	0.0		
2023-11-24	0.0		
2023-11-25	0.0		
2023-11-26	0.0		
2023-11-28	0.0		
2023-11-29	0.0		
2023-11-30	0.0		
2023-12-01	0.0		
2023-12-02	0.0		
2023-12-03	0.0		
2023-12-04	0.0		
2023-12-05	0.0		
2023-12-06	0.0		

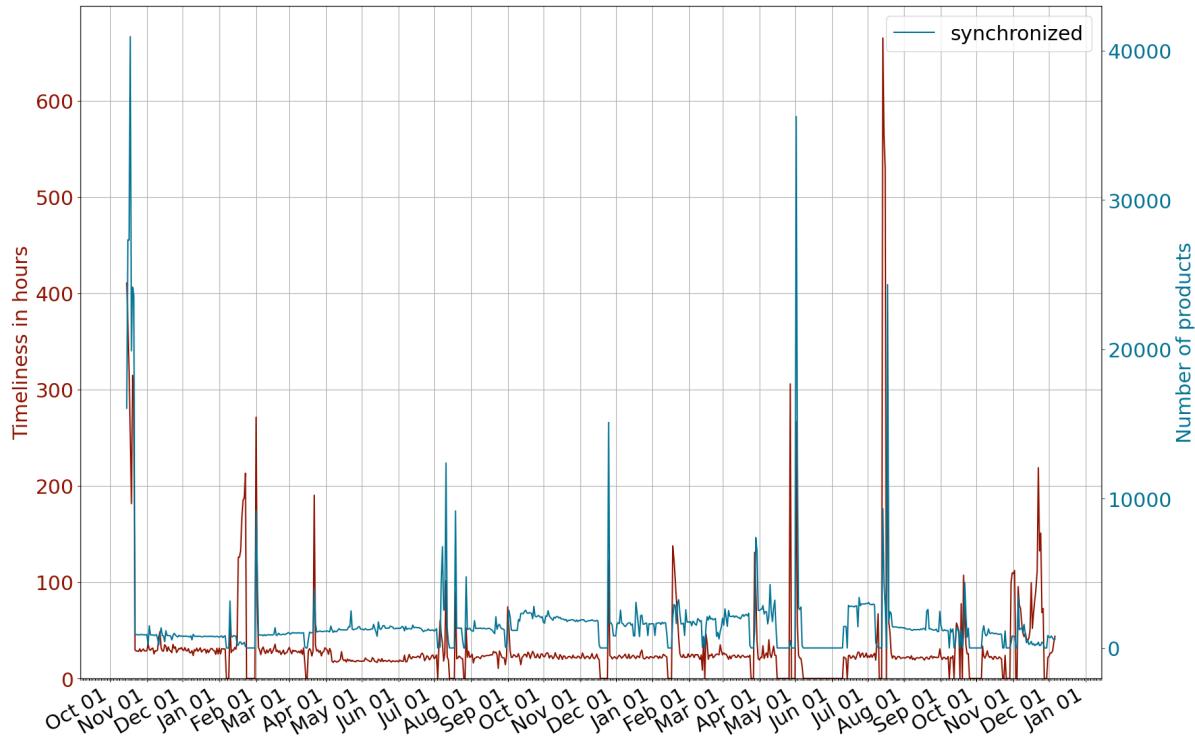
6.2 Missing products

The overall total number of Sentinel-3 products is 28275383. The number of overall Sentinel-3 missing products consists of 26029346 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

The total number of Sentinel-3 products in the last 30 days is 28275383. The number of Sentinel-3 missing products during the last 30 days consists of 26030112 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

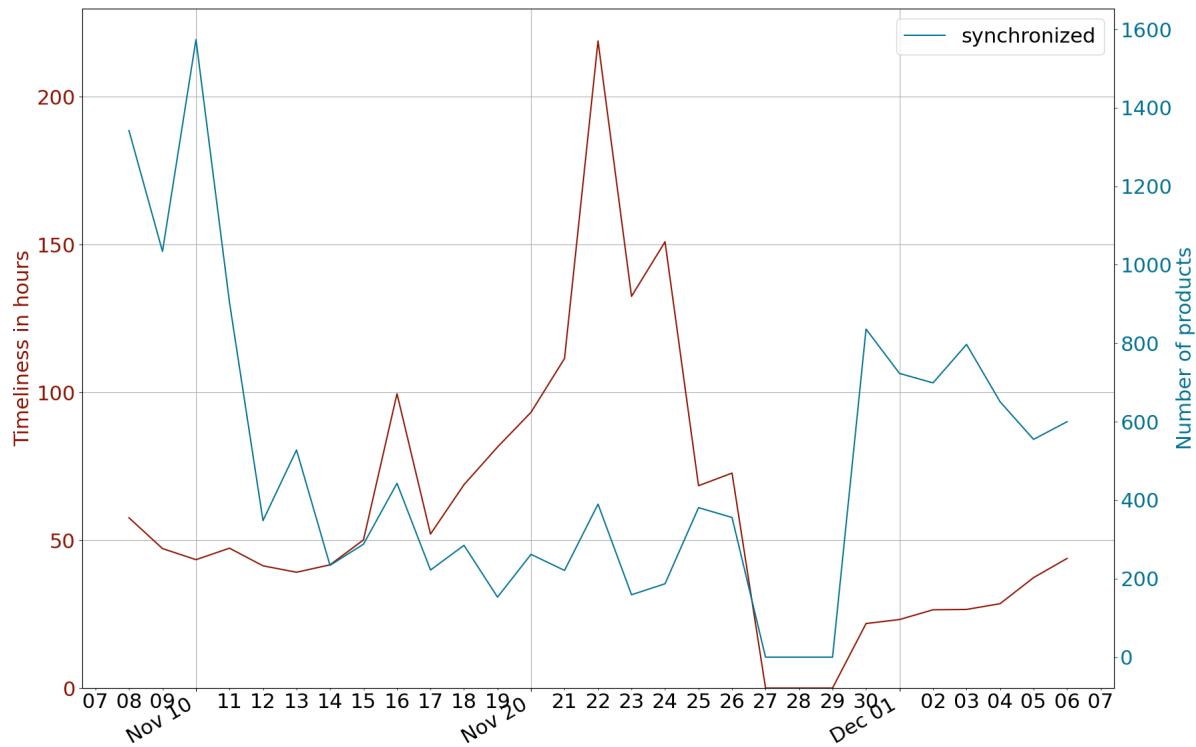
6.3 Data ingestion

In this section the time difference between sensing time and ingestion time at MET norway is assessed. The ingestion time is the time at which a Sentinel product was downloaded to MET Norway BE and so, it is automatically available in at least one of the MET Norway FEs.



The figure above shows an overall status of the Sentinel-3 synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last 30 days for the synchronization between ESA datahub and MET Norway BE.



A more detailed information is given in the table below where the last 30 days are assessed for products synchronized from ESA.

day	size	number	timeliness
2023-11-07	369.733755	1280	72.923349
2023-11-08	410.696841	1342	57.593631
2023-11-09	315.738073	1034	47.182513
2023-11-10	483.842236	1574	43.427131
2023-11-11	343.474447	904	47.304579
2023-11-12	137.927769	348	41.342228
2023-11-13	196.381252	528	39.168003
2023-11-14	101.377359	234	41.673107
2023-11-15	109.933313	288	50.127621
2023-11-16	149.368705	443	99.563129
2023-11-17	68.607945	222	52.090592
2023-11-18	80.337990	285	68.808195
2023-11-19	58.411500	153	81.526800
2023-11-20	70.028847	262	93.279097
2023-11-21	84.426507	221	111.479966
2023-11-22	126.652008	390	218.881010
2023-11-23	55.442071	159	132.500550
2023-11-24	69.168856	187	150.959719
2023-11-25	126.189716	381	68.448747
2023-11-26	105.834603	356	72.708552
2023-11-27	0.000000	0	0.000000
2023-11-28	0.000000	0	0.000000
2023-11-29	0.000000	0	0.000000
2023-11-30	254.524753	836	21.817215
2023-12-01	226.873692	723	23.178656
2023-12-02	213.433912	699	26.471389

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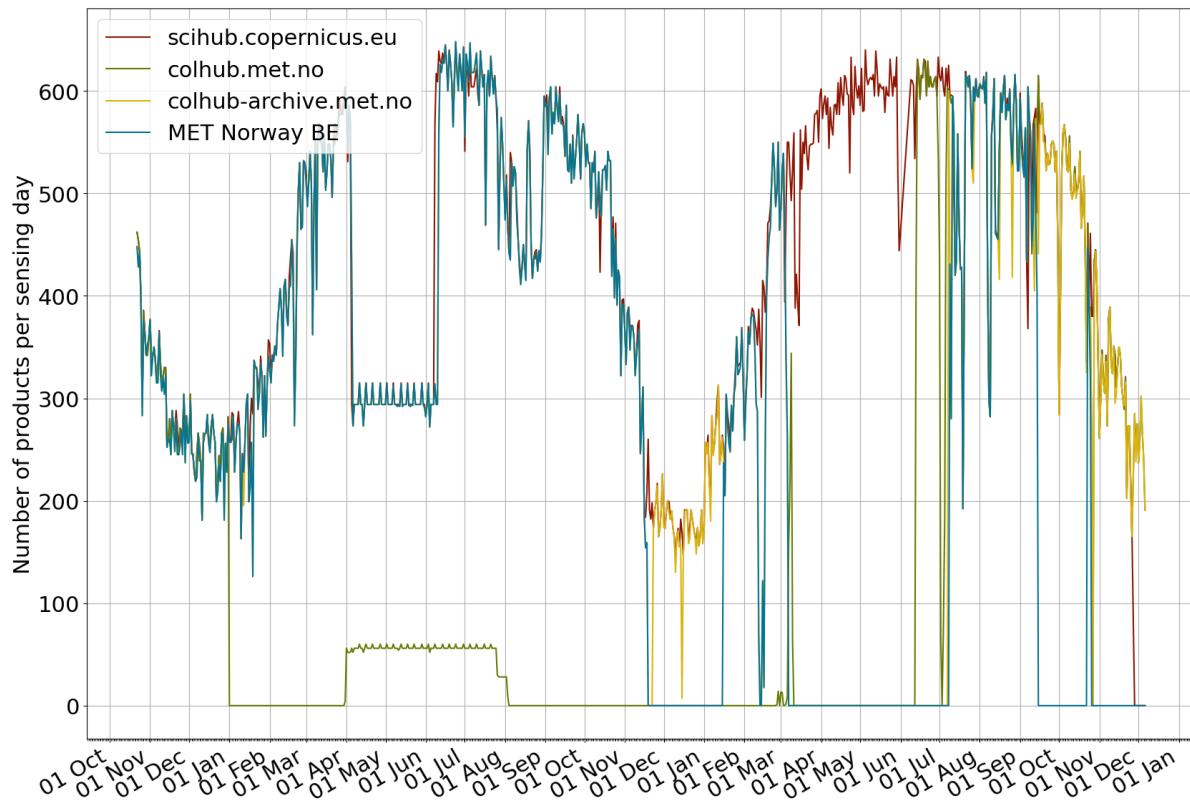
2023-12-03	236.798679	797	26.593547
2023-12-04	197.474256	651	28.529948
2023-12-05	170.360022	555	37.350829
2023-12-06	180.851974	600	43.849679

SENTINEL-5P PRODUCTS

This section shows the performance of MET Norway for Sentinel-5p products. Both, an overall status and last month status are shown below.

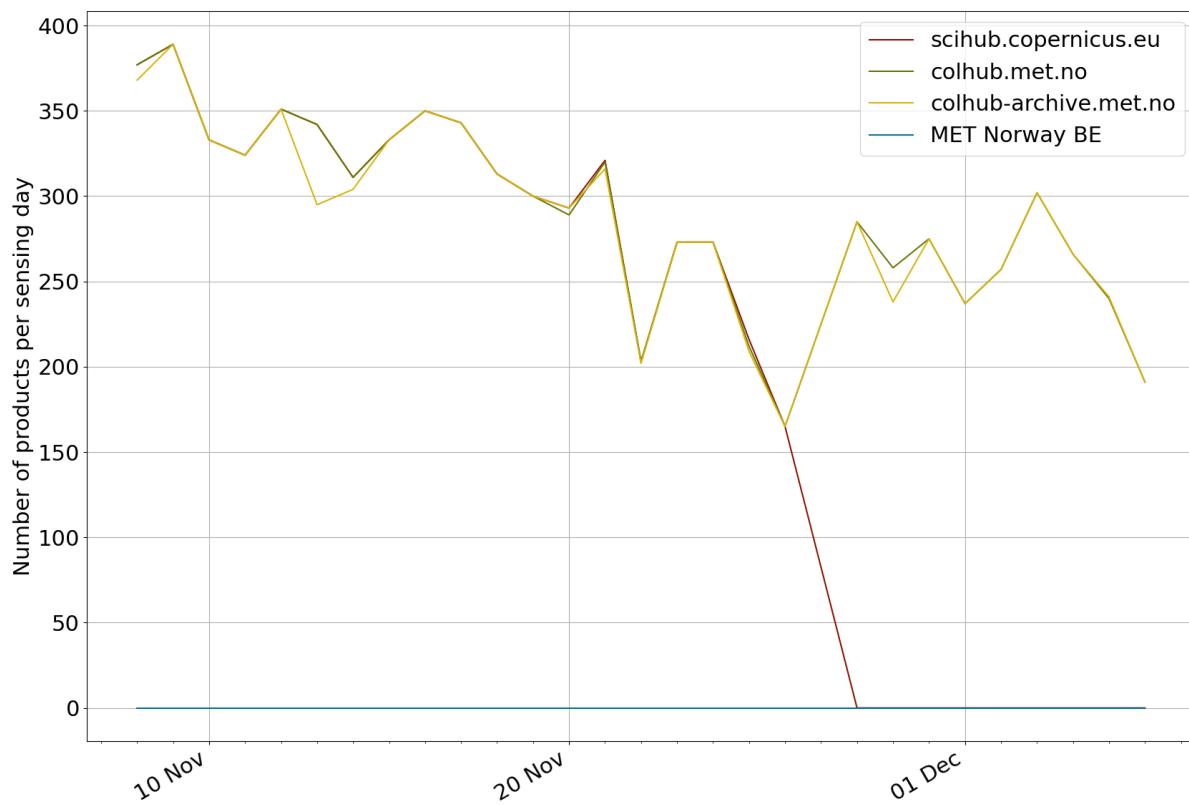
7.1 Products on portals

The following section contains an update on the Sentinel-5p products included in the different FEs and BEs.



The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-5p.

While the figure below shows a zoom on the last 30 days.



A 30 days table is also included for more detailed information.

sensing_date	colhub.met.no	scihub.copernicues.eu	colhub-archive.met.no	\
2023-11-06	341	342.0	336.0	
2023-11-07	273	273.0	273.0	
2023-11-08	377	377.0	368.0	
2023-11-09	389	389.0	389.0	
2023-11-10	333	333.0	333.0	
2023-11-11	324	324.0	324.0	
2023-11-12	351	351.0	351.0	
2023-11-13	342	342.0	295.0	
2023-11-14	311	311.0	304.0	
2023-11-15	333	333.0	333.0	
2023-11-16	350	350.0	350.0	
2023-11-17	343	343.0	343.0	
2023-11-18	313	313.0	313.0	
2023-11-19	300	300.0	300.0	
2023-11-20	289	293.0	293.0	
2023-11-21	320	321.0	316.0	
2023-11-22	203	203.0	202.0	
2023-11-23	273	273.0	273.0	
2023-11-24	273	273.0	273.0	
2023-11-25	212	216.0	209.0	
2023-11-26	165	165.0	165.0	
2023-11-28	285	0.0	285.0	
2023-11-29	258	0.0	238.0	
2023-11-30	275	0.0	275.0	
2023-12-01	237	0.0	237.0	

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2023-12-02	257	0.0	257.0
2023-12-03	302	0.0	302.0
2023-12-04	266	0.0	266.0
2023-12-05	240	0.0	241.0
2023-12-06	191	0.0	191.0

MET Norway BE			
sensing_date			
2023-11-06	0.0		
2023-11-07	0.0		
2023-11-08	0.0		
2023-11-09	0.0		
2023-11-10	0.0		
2023-11-11	0.0		
2023-11-12	0.0		
2023-11-13	0.0		
2023-11-14	0.0		
2023-11-15	0.0		
2023-11-16	0.0		
2023-11-17	0.0		
2023-11-18	0.0		
2023-11-19	0.0		
2023-11-20	0.0		
2023-11-21	0.0		
2023-11-22	0.0		
2023-11-23	0.0		
2023-11-24	0.0		
2023-11-25	0.0		
2023-11-26	0.0		
2023-11-28	0.0		
2023-11-29	0.0		
2023-11-30	0.0		
2023-12-01	0.0		
2023-12-02	0.0		
2023-12-03	0.0		
2023-12-04	0.0		
2023-12-05	0.0		
2023-12-06	0.0		

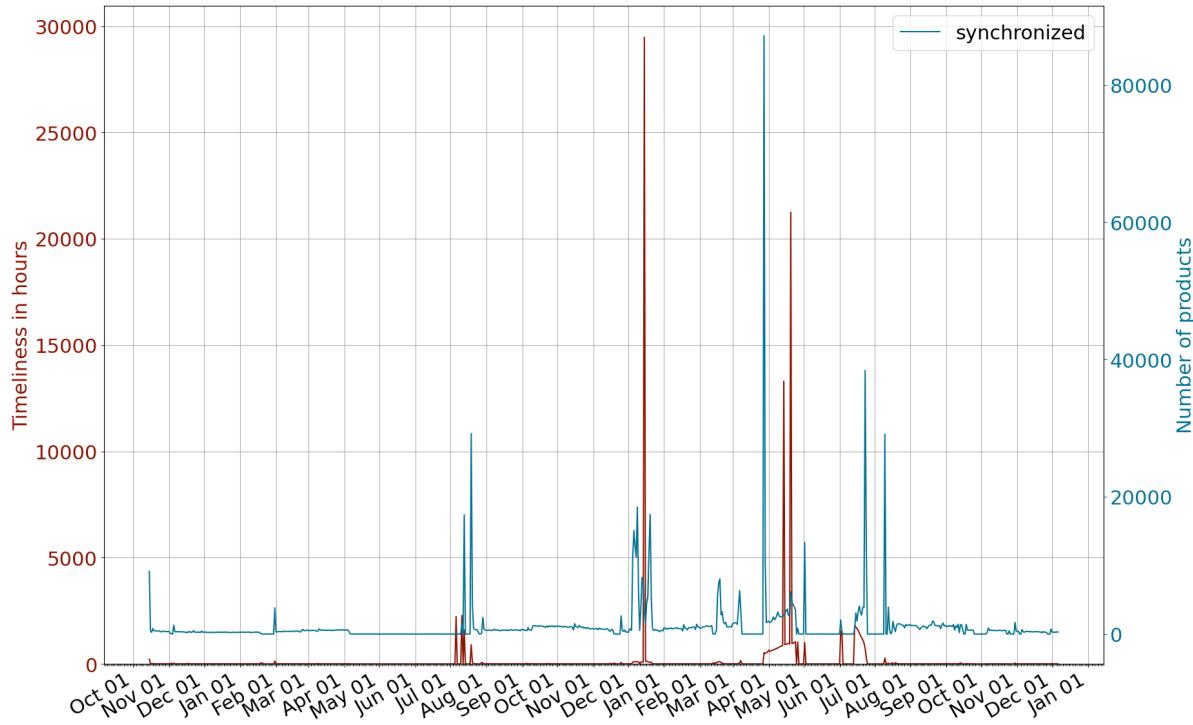
7.2 Missing products

The overall total number of Sentinel-5p products is 28275383. The number of overall Sentinel-5p missing products consists of 26029346 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

The total number of Sentinel-5p products in the last 30 days is 28275383. The number of Sentinel-5p missing products during the last 30 days consists of 26030112 images. This represents that a 0% of the total was included in MET Norway DHR, while a 100% was not included.

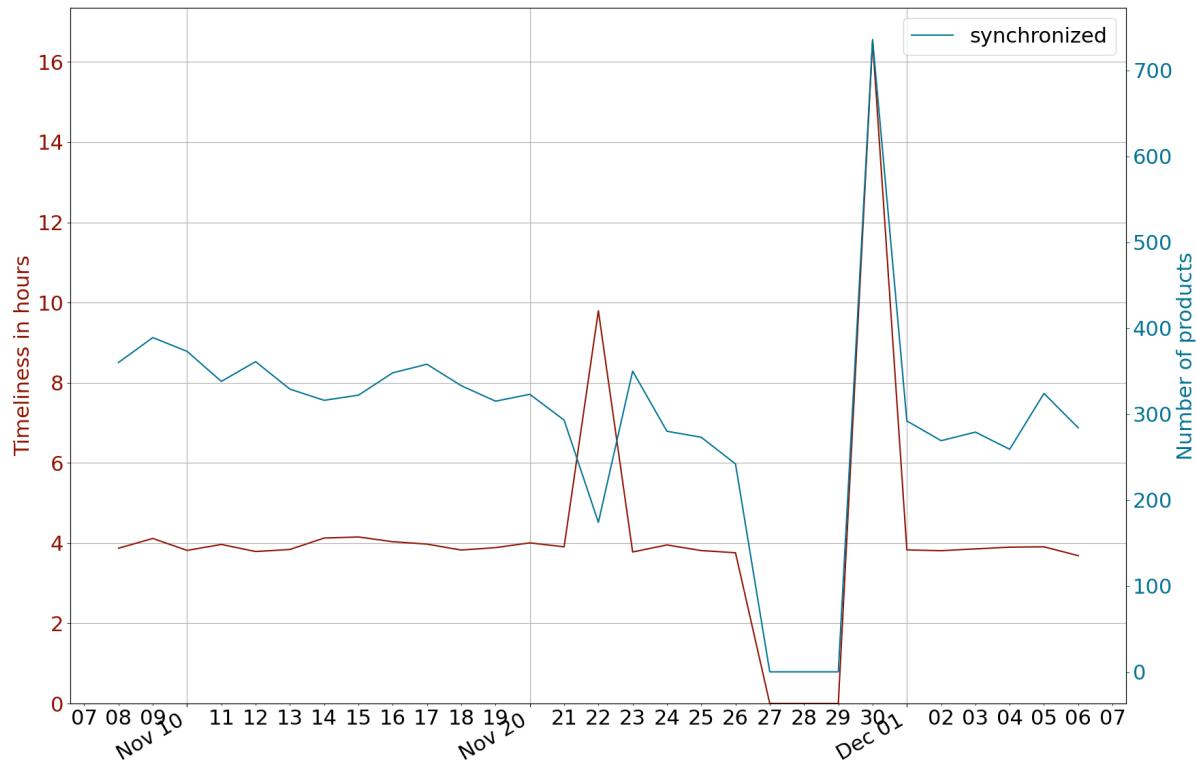
7.3 Data ingestion

In this section the time difference between sensing time and ingestion time at MET norway is assessed. The ingestion time is the time at which a Sentinel product was downloaded to MET Norway BE and so, it is automatically available in at least one of the MET Norway FEs.



The figure above shows an overall status of the Sentinel-5p synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last 30 days for the synchronization between ESA datahub and MET Norway BE.



A more detailed information is given in the table below where the last 30 days are assessed for products synchronized from ESA.

day	size	number	timeliness
2023-11-07	204.521640	266	3.931993
2023-11-08	250.932180	360	3.871582
2023-11-09	264.428683	389	4.115448
2023-11-10	252.897862	373	3.817613
2023-11-11	243.288479	338	3.966401
2023-11-12	243.365280	361	3.789386
2023-11-13	201.783009	329	3.840849
2023-11-14	220.604011	316	4.125766
2023-11-15	236.833450	322	4.152721
2023-11-16	241.165226	348	4.034454
2023-11-17	236.936249	358	3.974665
2023-11-18	223.822716	333	3.826152
2023-11-19	219.914605	315	3.886712
2023-11-20	219.014808	323	4.005817
2023-11-21	200.952476	293	3.906878
2023-11-22	200.233227	174	9.795063
2023-11-23	217.439760	350	3.777982
2023-11-24	171.248595	280	3.953785
2023-11-25	165.321021	273	3.813815
2023-11-26	159.685952	242	3.758719
2023-11-27	0.000000	0	0.000000
2023-11-28	0.000000	0	0.000000
2023-11-29	0.000000	0	0.000000
2023-11-30	513.786123	736	16.524593
2023-12-01	174.969949	292	3.830044
2023-12-02	186.326280	269	3.810835

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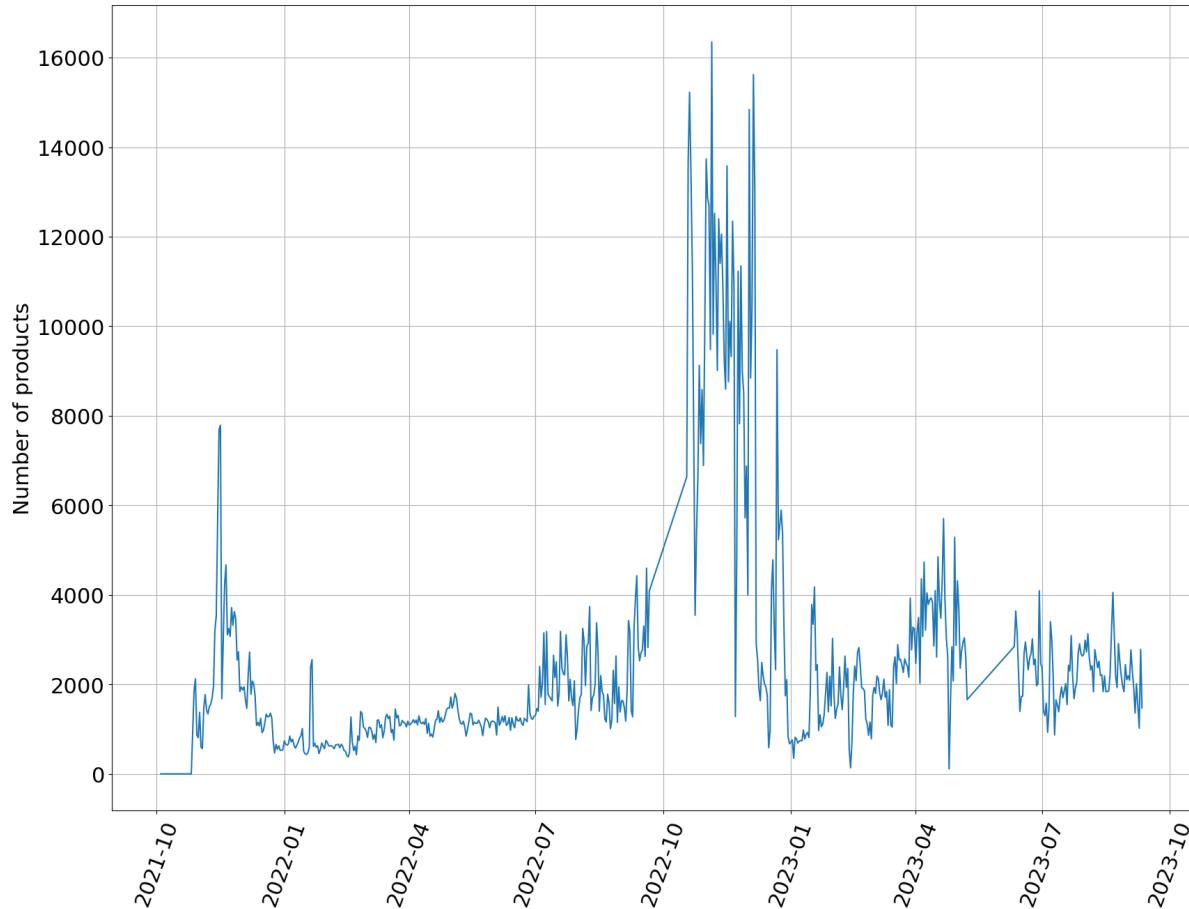
2023-12-03	203.313672	279	3.855136
2023-12-04	162.758434	259	3.897804
2023-12-05	222.588173	324	3.907407
2023-12-06	190.114208	284	3.686374

MONITORING DATA DOWNLOADS FROM COLHUB PORTALS

In this section the performance of the FrontEnds is analyzed, for both [colhub.met.no](#) and [colhub-archive.met.no](#). The FEs performance is translated as user accessibility to the data which is one of the main goals for the project.

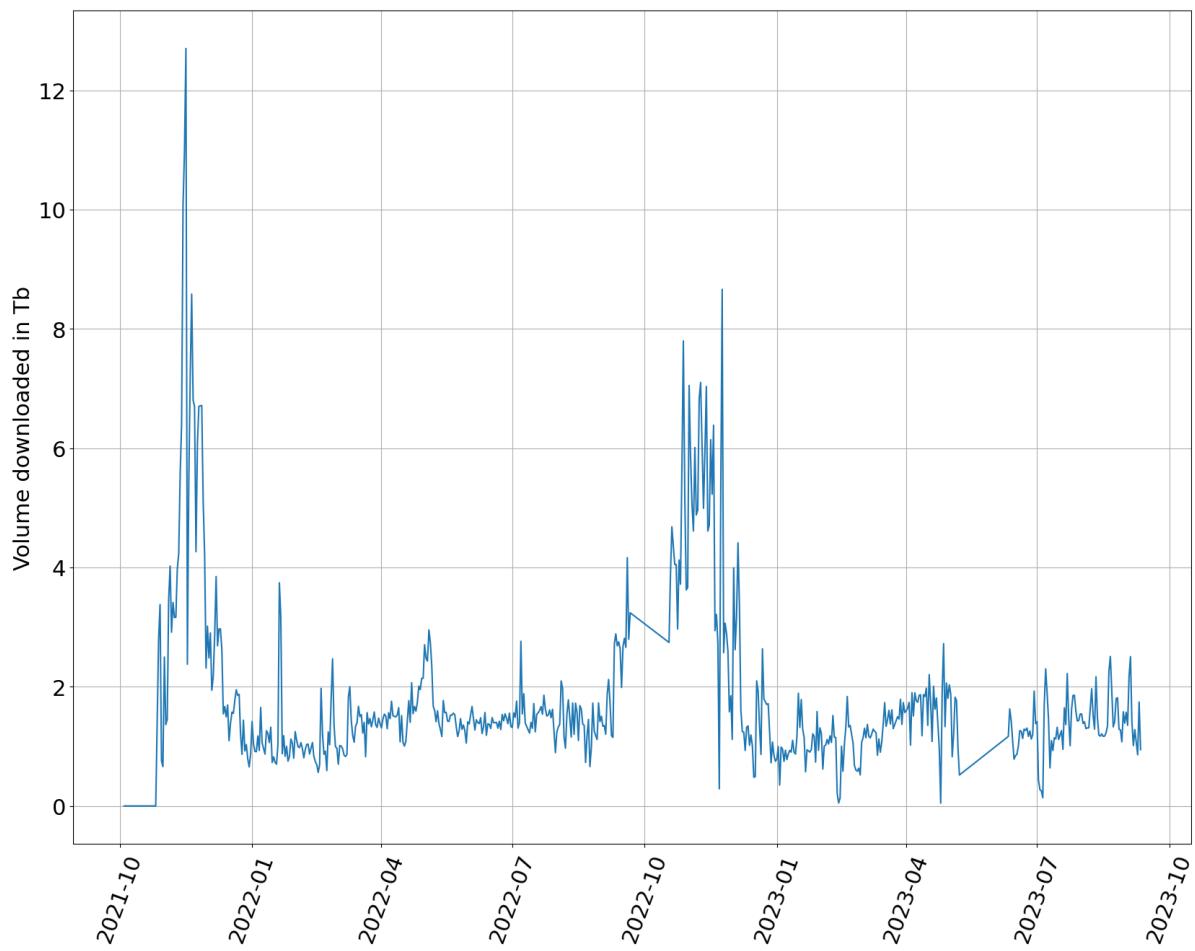
8.1 Portal: [colhub.met.no](#)

The first portal to analyze is [colhub.met.no](#). The target of the analysis is to check the amount of data downloaded by users, but also the number of users accessing the datahub. Below the historical amount of data per day is represented.



The same data is also represented below, with a difference. This time the data is not accounted by numer, but by volume. Although both graphs show similar trends, they are not exactly equal due to the variability in the ratio volume per product.

For instance, the seasonality of optical products could have an impact in the total volume of products.



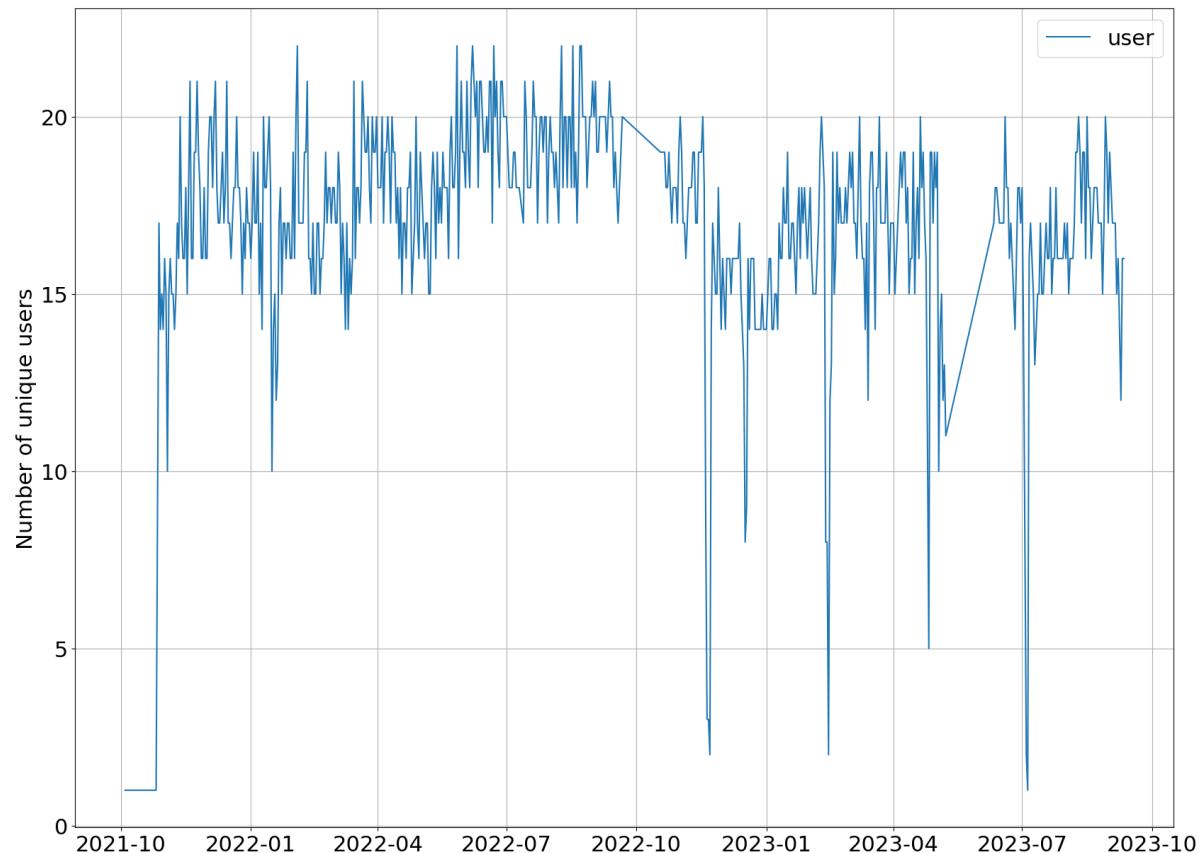
The table below is also interesting. It shows the amount of products downloaded for each the different Sentinel products. As expected, S1 and S2 are the most used Sentinels. S3 is slightly used, while S5p is not used.

satellite	product_type	
S1	GRDH	184907
	GRDM	68230
	OCN	54868
	RAW	151733
	SLC	45847
S2	MSIL1C	282758
	MSIL1C_DTERRENG	3100
	MSIL2A	755846
S3	OLCI_L1	3057
	OLCI_L2	302
	SLSTR_L1	3958
	SLSTR_L2	4
	SRAL_L1	20
	SRAL_L2	55
	SYN_L2	27
S5	NRTI_L2	3281
	OFFL_L1B	3
	OFFL_L2	4

The following table shows the total downloaded volume of data in Tb per month. Here the seasonality of some Sentinel products can affect the final numbers.

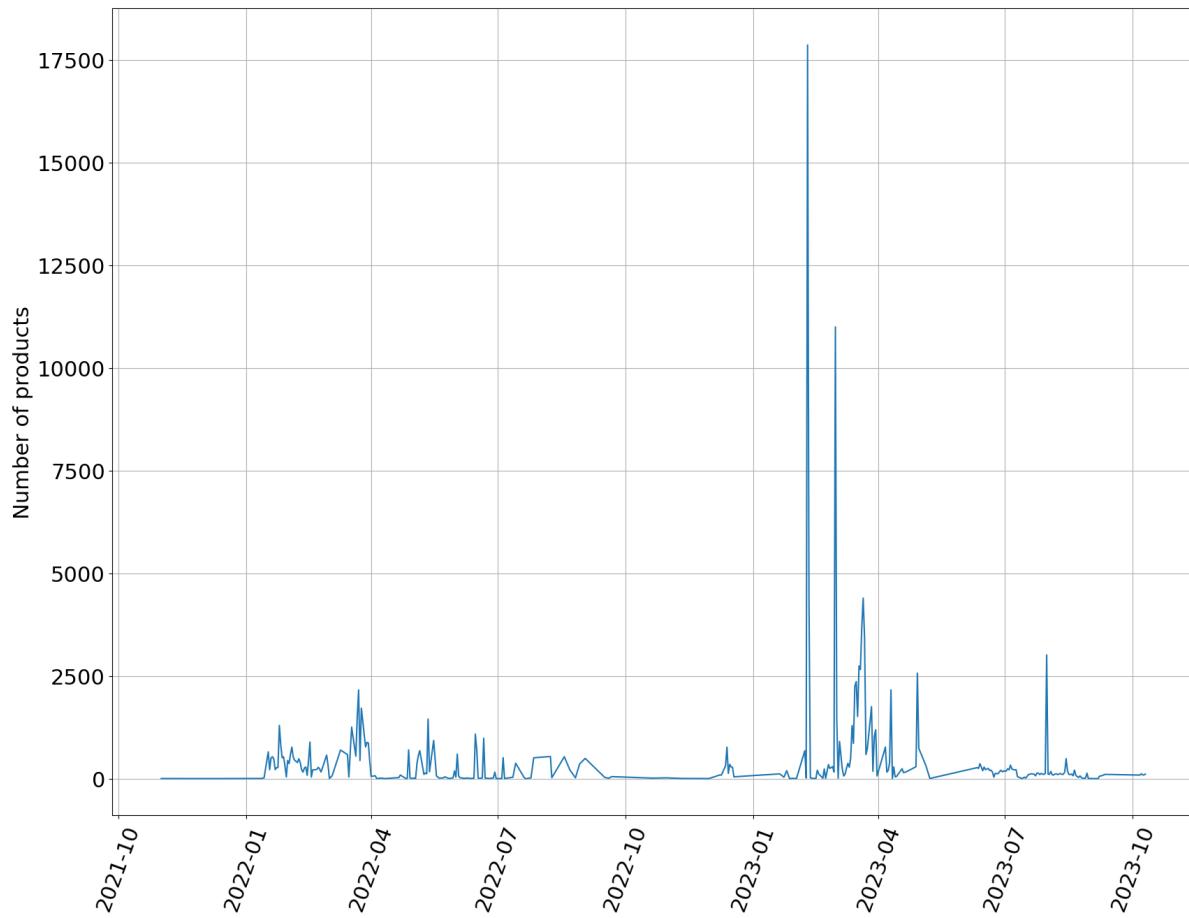
download_time	download_time	
2021	10	7.588303
	11	158.654049
	12	57.675128
2022	1	36.406545
	2	29.798405
	3	39.869718
	4	46.768604
	5	51.219186
	6	42.277098
	7	44.565096
	8	42.852304
	9	47.447532
	10	60.491409
	11	141.031091
	12	50.957670
2023	1	31.934204
	2	26.186281
	3	41.244137
	4	49.409686
	5	11.021648
	6	23.288549
	7	38.469730
	8	44.514413
	9	14.828489
		Name: size, dtype: float64

The number of users accessing and using the datahub is also important to be known. The plot below show the number of users per day. Some variability is represented in its numbers. Nevertheless, [colhub.met.no](#) is used by 15 to 20 users per day.



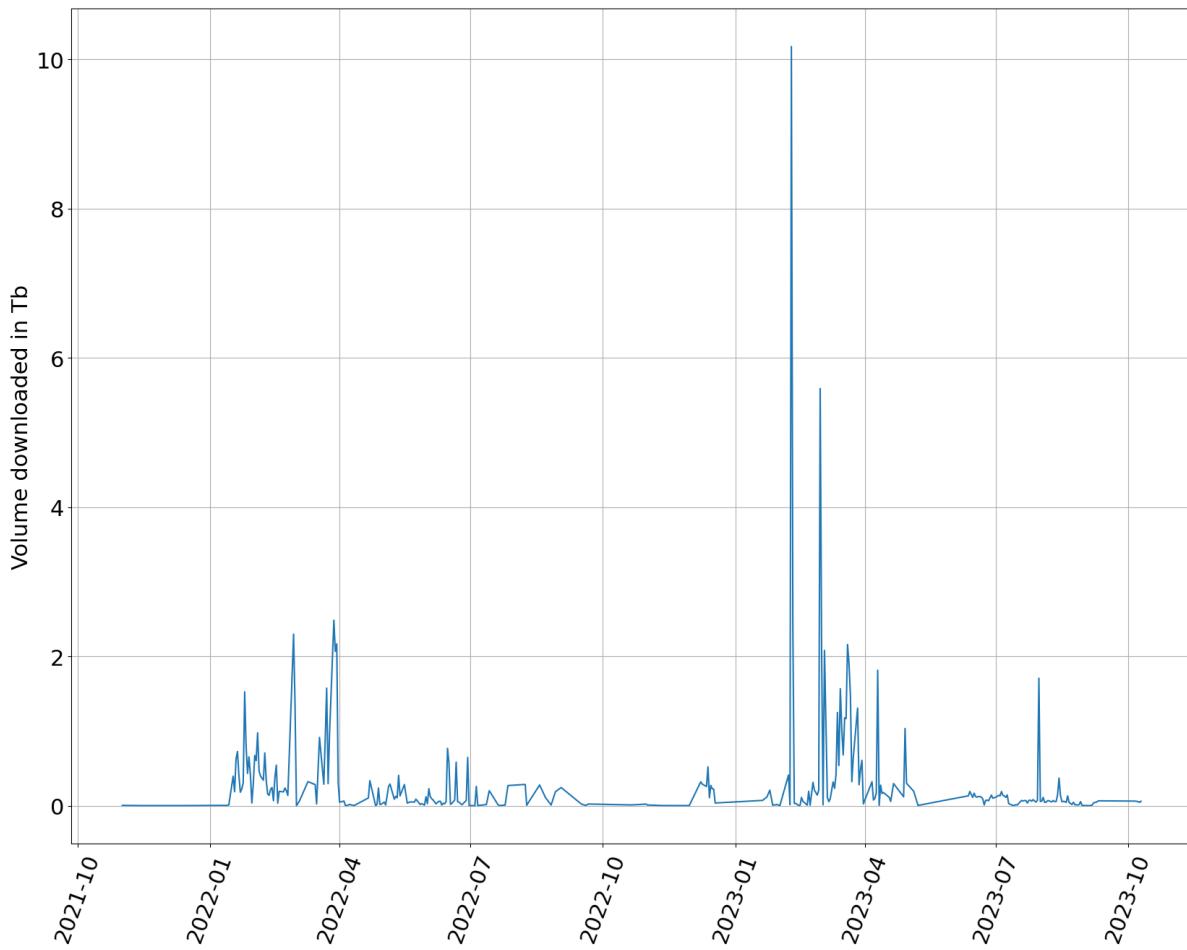
8.2 Portal: colhub-archive.met.no

Similar to [colhub.met.no](#), here it is presented the performance of [colhub-archive.met.no](#). First the number of products downloaded per day. As shown in the plot below, some days the number of products downloaded is null. This is a correct value which is not reflecting the performance of the FE. The archive is not as frequently accessed as [colhub.met.no](#). Only those users looking for historical data will used this portal.



As explained and shown in the previous section, the total volume downloaded is also shown in the graphic below.

```
Index(['size', 'download_duration'], dtype='object')
```



It is still interesting to see the number of products downloaded per product type. As shown in the previous section, S1 and S2 still are the most popular Sentinels.

satellite	product_type	
S1	GRDH	31284
	GRDM	7755
	OCN	1
	RAW	3
	SLC	3219
S2	MSIL1C	34518
	MSIL1C_DTERRENG	16832
	MSIL2A	43148
S3	OLCI_L1	1
	SLSTR_L1	2
	SRAL_L1	4
	SRAL_L2	158
S5	OFFL_L2	1
dtype: int64		

The table below shows the monthly retrieved volume of data in Tb.

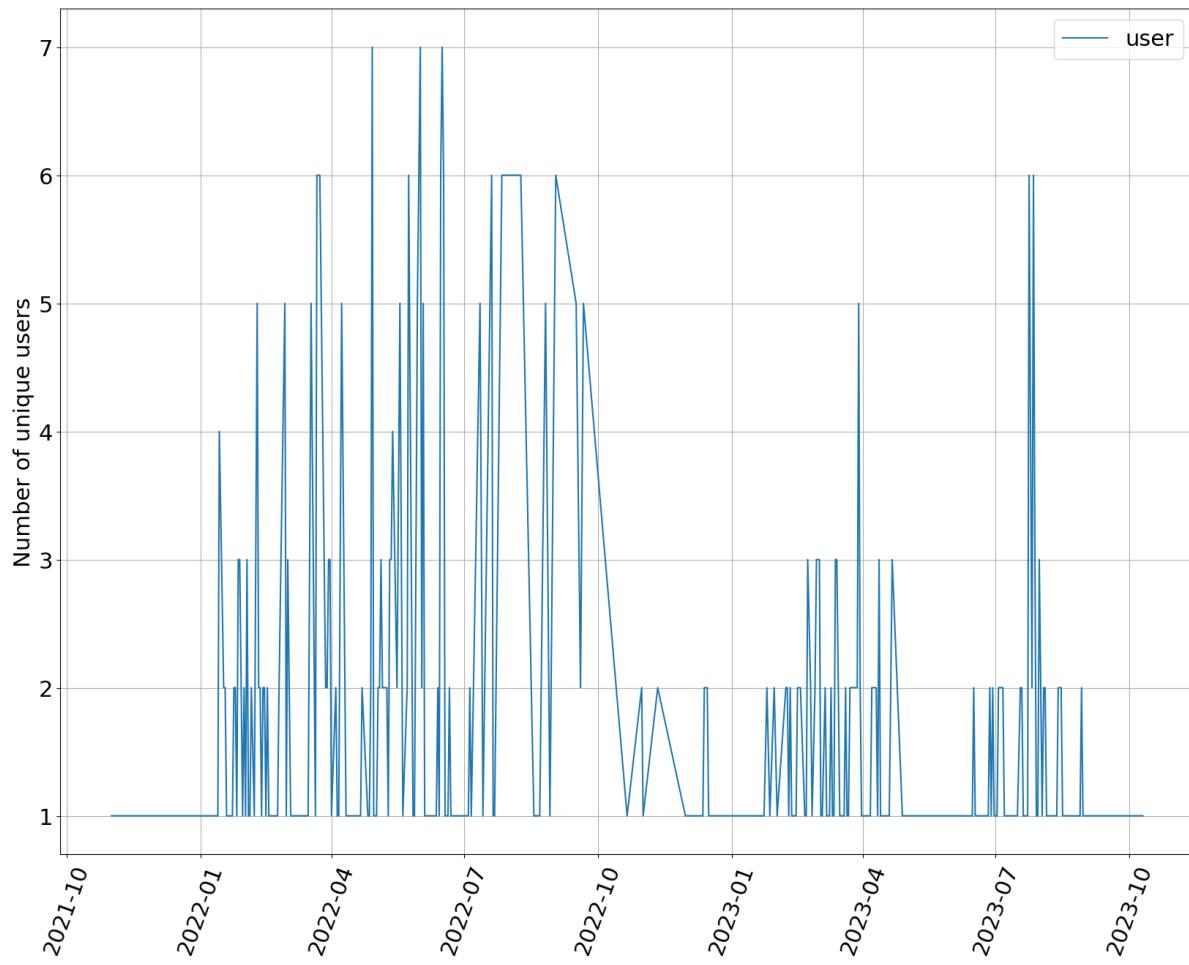
download_time	download_time	
2021	December	0.000696
	November	0.005186

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2022	April	0.858194
	August	0.874257
	December	2.247264
	February	9.514969
	January	7.210722
	July	0.771705
	June	3.787335
	March	13.999207
	May	2.258999
	November	0.011412
	October	0.030705
	September	0.289683
2023	April	5.010196
	August	1.931697
	February	14.316868
	January	0.417223
	July	3.804772
	June	2.082679
	March	27.805556
	May	0.196331
	October	0.276372
Name: size, dtype: float64		

The last graphic show the number of users accessing and downloading data from the portal. Again, the discontinuity in numbers of users it is not a sign of the portal performance.



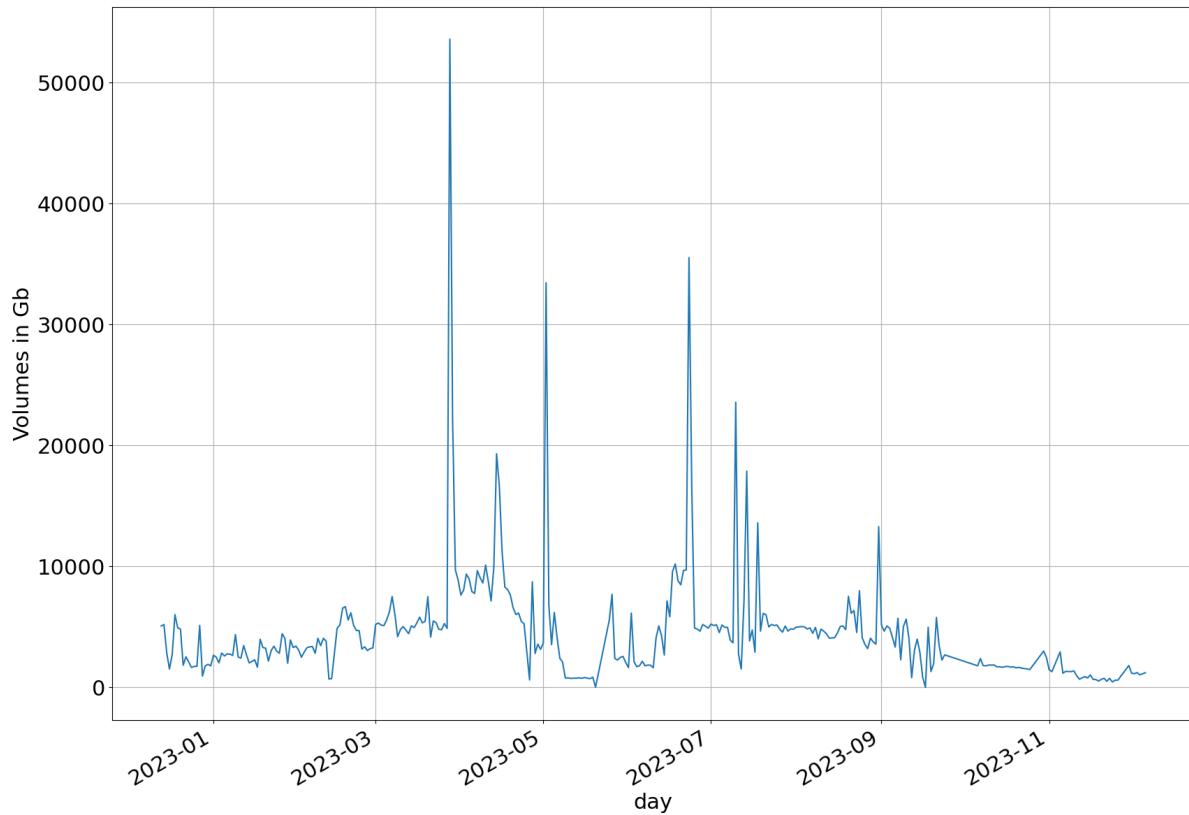
DATA VOLUMES FOR NBS

Satellite data storage requires an important amount of disk space, especially high resolution products such as the ones produced by the Sentinel constellation. This also represents an economical cost. Hence, it is very important to keep track of the total volume of data stored at MET Norway premises. In this section those numbers are shown.

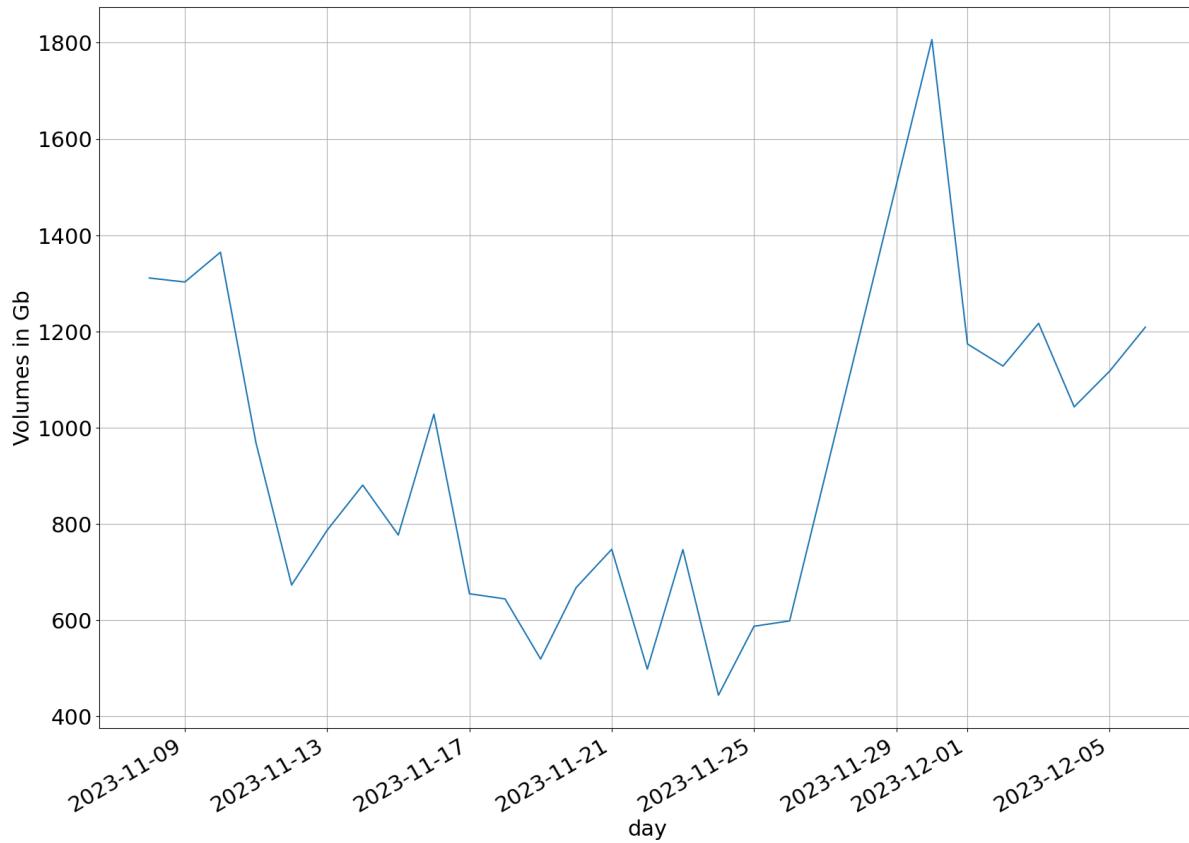
9.1 Volumes for AOI backends

Two type of products can be differentiated, products acquired from ESA datahub which keep the original format and Sentinel products transformed into NetCDF. Those directly acquired from ESA are store at MET Norway BE for the AOI. Later on, they are made available to users through colhub-archive and colhub FEs.

The total amount of Sentinel products for the AOI, located in the AOI BE, represents 4173 Tb



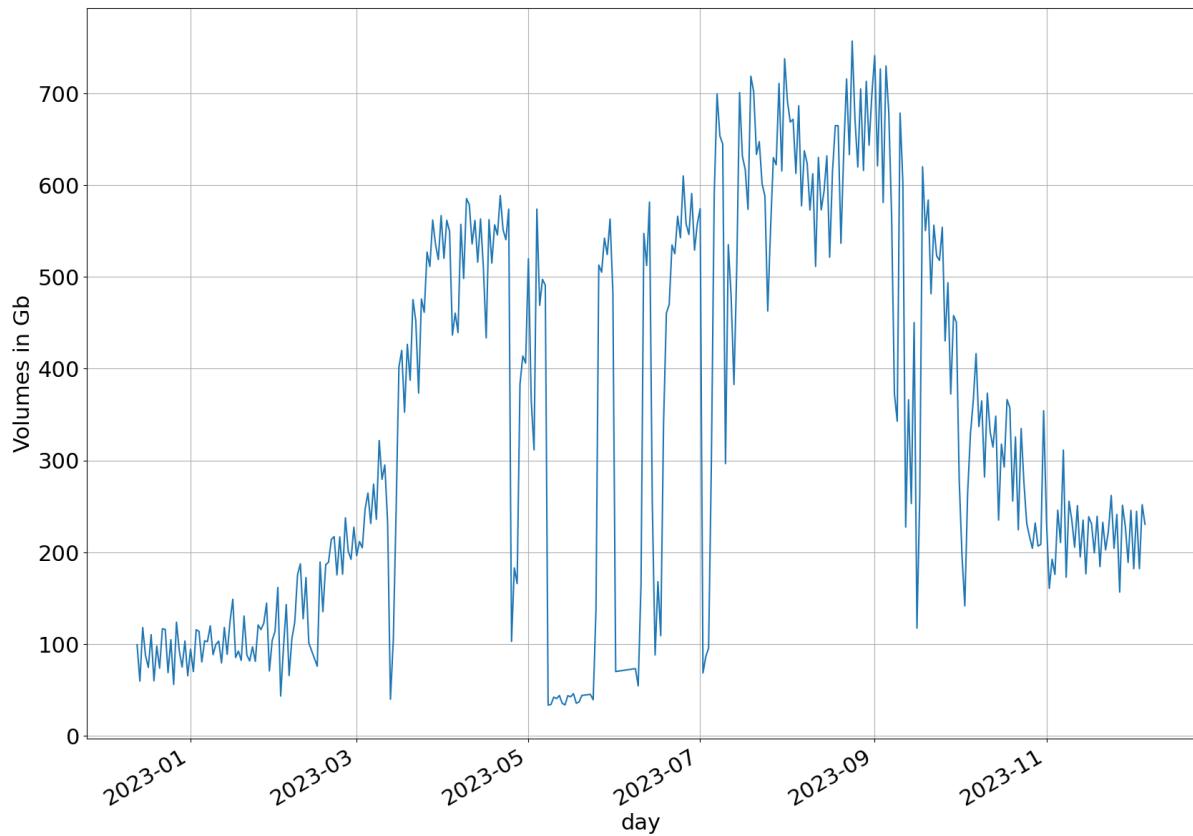
In the graphic above the volume of data per day in Gb is shown for the last year. Here we can observed seasonality due to optical sensor products. The table below shows the same information for the lsat 30 days.



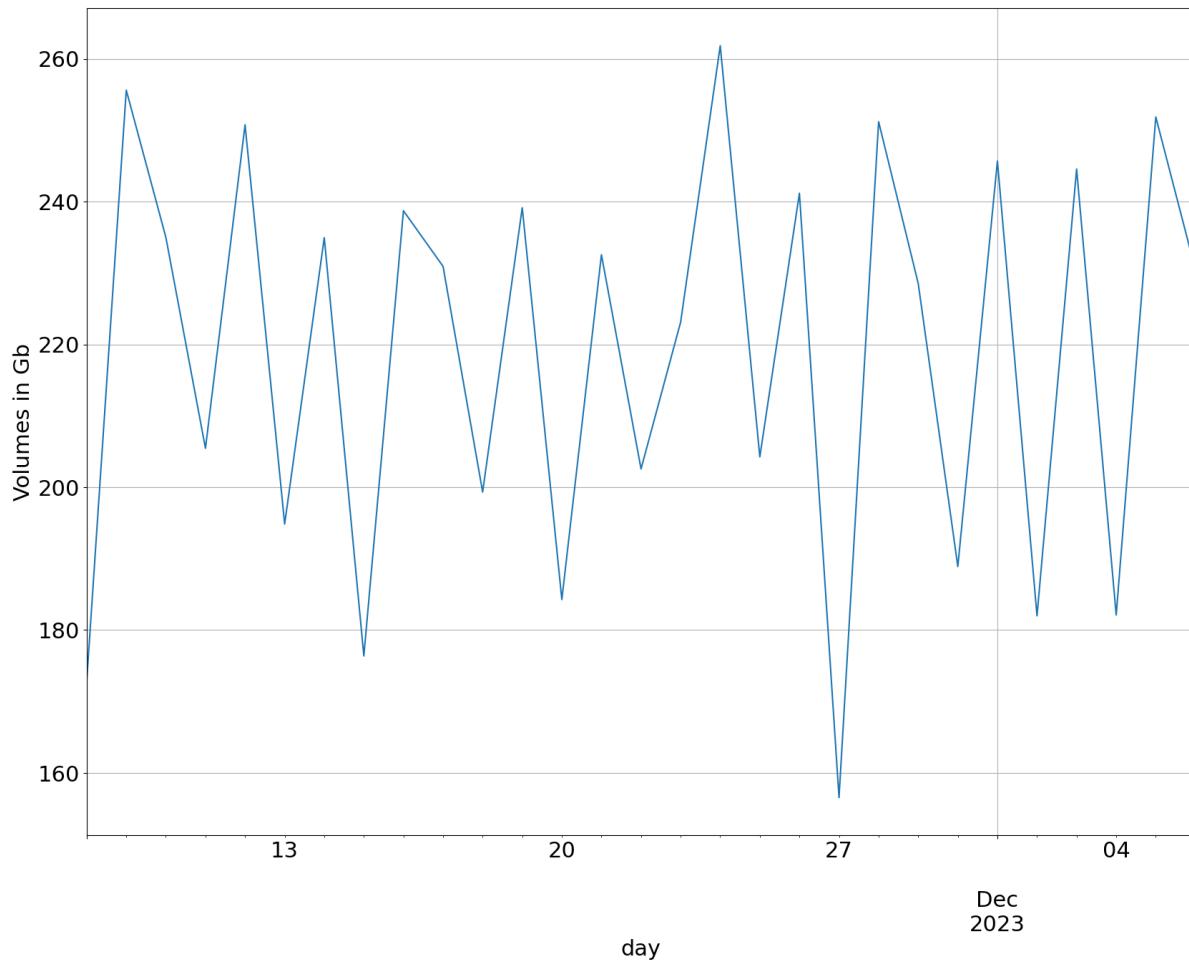
9.2 Volume for netcdf products

The products converted to NetCDF are S1 and S2 products. These Sentinel datasets are served as SAFE format by ESA. This is not always convenient for users. Therefore as part of the NBS project, one of the MET Norway tasks as operator is to translate those products into NetCDF.

The total amount of Sentinel-1 and Sentinel-2 products for the AOI transformed to NetCDF represents 841 Tb

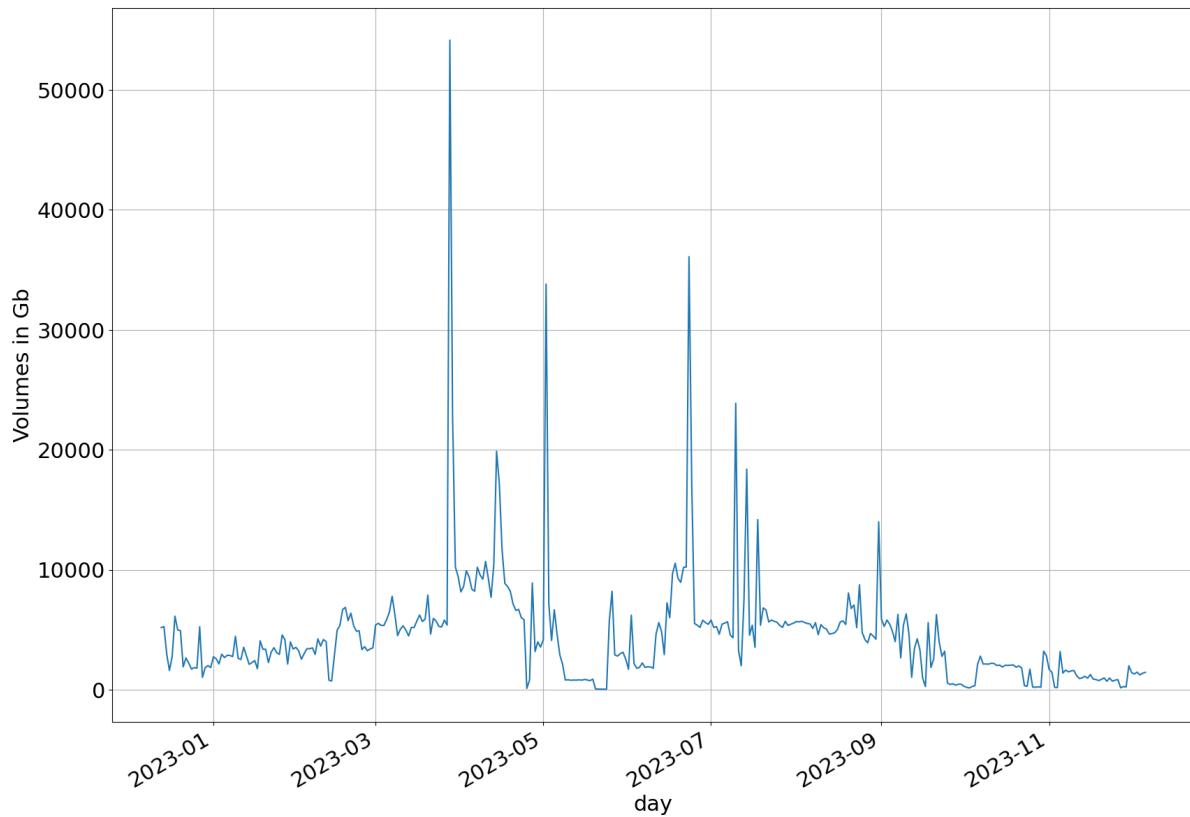


In the graphic above the volume of NetCDF data per day in Gb is shown for the last year. Here we can observed seasonality due to optical sensor products. The table below shows the same information for the lsat 30 days.



9.3 Totals

Finally, the total amount of disk space dedicated to the NBS project, including either products in SAFE and NetCDF formats, represents 5014 Tb



In the graphic above the total volume of data per day in Gb is shown for the last year. Here we can observed seasonality due to optical sensor products again. The table below shows the same information for the last 30 days.

day	product_type	action	volume	number	timeliness
2023-11-08	GRDH	fscanner	51.438035	20.0	0.724008
2023-11-08	GRDH	synchronized	36.599179	45.0	1.139506
2023-11-08	GRDM	fscanner	4.761754	32.0	0.657856
2023-11-08	GRDM	synchronized	4.185658	18.0	0.913574
2023-11-08	OCN	synchronized	0.594127	54.0	1.279952
2023-11-08	RAW	synchronized	86.168148	63.0	0.942815
2023-11-08	SLC	synchronized	180.042771	47.0	1.431203
2023-11-09	GRDH	fscanner	63.883174	26.0	0.675942
2023-11-09	GRDH	synchronized	42.589266	50.0	0.958345
2023-11-09	GRDM	fscanner	7.709502	49.0	0.673913
2023-11-09	GRDM	synchronized	3.7744598	18.0	0.843820
2023-11-09	OCN	synchronized	0.559821	50.0	0.999811
2023-11-09	RAW	synchronized	95.112106	69.0	0.787020
2023-11-09	SLC	synchronized	210.591291	53.0	1.378514
2023-11-10	GRDH	fscanner	67.433532	24.0	0.645476
2023-11-10	GRDH	synchronized	43.793409	42.0	1.180883
2023-11-10	GRDM	fscanner	3.744464	35.0	0.679621
2023-11-10	GRDM	synchronized	2.966094	10.0	0.915459
2023-11-10	OCN	synchronized	0.471461	35.0	1.294249
2023-11-10	RAW	synchronized	74.648075	53.0	0.946633
2023-11-10	SLC	synchronized	143.505331	33.0	1.371783
2023-11-11	GRDH	fscanner	54.929408	19.0	0.849359
2023-11-11	GRDM	fscanner	2.861695	26.0	0.709878
2023-11-11	RAW	synchronized	12.747985	8.0	22.675041

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2023-11-11	SLC	synchronized	51.076530	7.0	8.189754
2023-11-12	GRDH	fscanner	79.583353	27.0	0.778984
2023-11-12	GRDH	synchronized	11.521272	7.0	33.916689
2023-11-12	GRDM	fscanner	4.871748	45.0	0.764870
2023-11-13	GRDH	fscanner	46.338446	20.0	0.626877
2023-11-13	GRDH	synchronized	2.173008	1.0	57.520360
2023-11-13	GRDM	fscanner	8.236695	40.0	0.610245
2023-11-13	GRDM	synchronized	1.024492	3.0	68.468721
2023-11-13	OCN	synchronized	0.204523	11.0	57.625468
2023-11-13	RAW	synchronized	2.723878	3.0	68.404010
2023-11-13	SLC	synchronized	62.756391	8.0	57.801575
2023-11-14	GRDH	fscanner	69.358721	26.0	0.671773
2023-11-14	GRDH	synchronized	23.523026	14.0	77.657037
2023-11-14	GRDM	fscanner	7.350132	44.0	0.667035
2023-11-14	GRDM	synchronized	3.935785	10.0	72.911060
2023-11-14	OCN	synchronized	0.438940	16.0	77.777424
2023-11-14	RAW	synchronized	34.016229	26.0	76.970196
2023-11-14	SLC	synchronized	136.413549	18.0	78.476941
2023-11-15	GRDH	fscanner	72.819659	26.0	0.761790
2023-11-15	GRDH	synchronized	21.277546	13.0	90.509918
2023-11-15	GRDM	fscanner	8.394508	44.0	0.783823
2023-11-15	GRDM	synchronized	2.016073	5.0	91.441814
2023-11-15	OCN	synchronized	0.289367	13.0	90.561755
2023-11-15	RAW	synchronized	26.097227	18.0	90.432416
2023-11-15	SLC	synchronized	102.766373	14.0	90.709614
2023-11-16	GRDH	fscanner	68.199145	24.0	0.690347
2023-11-16	GRDH	synchronized	44.924124	27.0	112.234603
2023-11-16	GRDM	fscanner	7.007955	44.0	0.634549
2023-11-16	GRDM	synchronized	4.162893	11.0	108.931902
2023-11-16	OCN	synchronized	0.594957	27.0	112.448819
2023-11-16	RAW	synchronized	52.836095	39.0	111.837066
2023-11-16	SLC	synchronized	209.340711	27.0	112.494813
2023-11-17	GRDH	fscanner	70.688868	24.0	0.709782
2023-11-17	GRDH	synchronized	16.748053	10.0	111.561465
2023-11-17	GRDM	fscanner	7.495410	42.0	0.668379
2023-11-17	GRDM	synchronized	2.113678	6.0	113.917556
2023-11-17	OCN	synchronized	0.232283	9.0	114.025392
2023-11-17	RAW	synchronized	21.765206	17.0	110.660297
2023-11-17	SLC	synchronized	26.980474	4.0	112.726231
2023-11-18	GRDH	fscanner	46.359253	16.0	0.545629
2023-11-18	GRDM	fscanner	7.367041	38.0	0.616227
2023-11-18	OCN	synchronized	0.027259	2.0	130.475872
2023-11-18	SLC	synchronized	81.282937	11.0	137.065387
2023-11-19	GRDH	fscanner	69.726858	22.0	0.709658
2023-11-19	GRDM	fscanner	3.898543	36.0	0.819229
2023-11-20	GRDH	fscanner	51.182306	19.0	0.714397
2023-11-20	GRDH	synchronized	6.512365	4.0	182.342330
2023-11-20	GRDM	fscanner	4.763469	32.0	0.658374
2023-11-20	OCN	synchronized	0.051741	4.0	182.368586
2023-11-20	RAW	synchronized	6.492772	4.0	182.315250
2023-11-20	SLC	synchronized	36.185230	5.0	182.465370
2023-11-21	GRDH	fscanner	67.625936	26.0	0.676424
2023-11-21	GRDH	synchronized	33.731446	20.0	201.955828
2023-11-21	GRDM	fscanner	1.686026	10.0	0.432045
2023-11-21	GRDM	synchronized	4.874012	12.0	208.399787
2023-11-21	OCN	synchronized	0.446686	23.0	202.287672

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2023-11-21	RAW	synchronized	38.682926	29.0	201.607726
2023-11-21	SLC	synchronized	117.183028	15.0	202.452428
2023-11-22	GRDH	fscanner	67.893771	23.0	0.666807
2023-11-22	GRDM	synchronized	10.063490	6.0	213.313256
2023-11-22	GRDM	fscanner	3.812366	35.0	0.679929
2023-11-22	GRDH	synchronized	2.463601	6.0	216.613527
2023-11-22	OCN	synchronized	0.224634	6.0	216.613150
2023-11-22	RAW	synchronized	25.752868	19.0	213.299242
2023-11-22	SLC	synchronized	7.861957	1.0	217.941315
2023-11-23	GRDH	fscanner	54.730440	18.0	0.913039
2023-11-23	GRDH	synchronized	28.543263	17.0	219.043814
2023-11-23	GRDM	fscanner	2.835303	26.0	0.710111
2023-11-23	GRDM	synchronized	2.711959	7.0	218.716656
2023-11-23	OCN	synchronized	0.464750	21.0	219.078993
2023-11-23	RAW	synchronized	40.486753	29.0	218.886831
2023-11-23	SLC	synchronized	158.448033	21.0	219.282306
2023-11-24	GRDH	fscanner	77.614354	27.0	0.934852
2023-11-24	GRDM	fscanner	3.489474	33.0	0.684510
2023-11-24	RAW	synchronized	14.056912	11.0	234.701554
2023-11-25	GRDH	fscanner	46.399259	20.0	0.625942
2023-11-25	GRDH	synchronized	19.284931	12.0	43.208249
2023-11-25	GRDM	fscanner	8.141089	39.0	0.613832
2023-11-25	OCN	synchronized	0.117805	9.0	51.447943
2023-11-25	RAW	synchronized	20.611713	14.0	42.781718
2023-11-25	SLC	synchronized	89.315319	12.0	51.768930
2023-11-26	GRDH	fscanner	68.647841	25.0	0.673294
2023-11-26	GRDM	fscanner	7.371094	44.0	0.666815
2023-11-30	GRDH	fscanner	36.856284	15.0	0.477820
2023-11-30	GRDH	synchronized	65.600928	39.0	1.449643
2023-11-30	GRDM	fscanner	7.366272	38.0	0.615831
2023-11-30	GRDM	synchronized	8.968289	24.0	1.012277
2023-11-30	OCN	synchronized	1.162468	52.0	1.576176
2023-11-30	RAW	synchronized	82.273605	63.0	1.140477
2023-11-30	SLC	synchronized	328.672352	43.0	1.854586
2023-12-01	GRDH	fscanner	69.870599	23.0	0.805764
2023-12-01	GRDH	synchronized	78.172566	48.0	1.701504
2023-12-01	GRDM	fscanner	3.906896	36.0	0.819361
2023-12-01	GRDM	synchronized	5.305839	14.0	1.200628
2023-12-01	OCN	synchronized	0.853911	44.0	1.817015
2023-12-01	RAW	synchronized	85.611332	62.0	1.334687
2023-12-01	SLC	synchronized	376.919166	51.0	1.953957
2023-12-02	GRDH	fscanner	50.474640	21.0	0.668250
2023-12-02	GRDH	synchronized	73.789539	45.0	1.404731
2023-12-02	GRDM	fscanner	4.761379	32.0	0.658170
2023-12-02	GRDM	synchronized	7.720881	19.0	1.332272
2023-12-02	OCN	synchronized	1.156450	55.0	1.684293
2023-12-02	RAW	synchronized	85.685724	63.0	1.171648
2023-12-02	SLC	synchronized	352.654720	47.0	1.824176
2023-12-03	GRDH	fscanner	69.095875	27.0	0.673479
2023-12-03	GRDH	synchronized	82.887260	50.0	1.366115
2023-12-03	GRDM	fscanner	7.878543	49.0	0.673637
2023-12-03	GRDM	synchronized	6.854922	18.0	1.551090
2023-12-03	OCN	synchronized	1.050881	50.0	1.504573
2023-12-03	RAW	synchronized	92.947527	68.0	1.363808
2023-12-03	SLC	synchronized	398.084848	53.0	1.856207
2023-12-04	GRDH	fscanner	47.925880	17.0	0.695538

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2023-12-04	GRDH	synchronized	82.913521	50.0	1.462862
2023-12-04	GRDM	fscanner	2.300695	21.0	0.658384
2023-12-04	GRDM	synchronized	5.112656	13.0	2.785401
2023-12-04	OCN	synchronized	0.944452	49.0	1.763960
2023-12-04	RAW	synchronized	89.797546	64.0	1.201542
2023-12-04	SLC	synchronized	386.659506	51.0	1.937848
2023-12-05	GRDH	synchronized	86.317828	53.0	1.498869
2023-12-05	GRDM	synchronized	5.211910	14.0	1.900167
2023-12-05	OCN	synchronized	0.900228	46.0	1.796004
2023-12-05	RAW	synchronized	93.364991	67.0	1.390010
2023-12-05	SLC	synchronized	413.558058	56.0	2.141756
2023-12-06	GRDH	fscanner	28.106087	9.0	0.687026
2023-12-06	GRDH	synchronized	99.603665	61.0	2.553949
2023-12-06	GRDM	fscanner	2.265277	21.0	0.677810
2023-12-06	GRDM	synchronized	3.473492	9.0	1.261426
2023-12-06	OCN	synchronized	0.845484	50.0	2.848418
2023-12-06	RAW	synchronized	100.129298	70.0	2.253177
2023-12-06	SLC	synchronized	475.954139	64.0	3.022014
2023-11-08	MSIL1C	synchronized	125.747683	267.0	3.945383
2023-11-09	MSIL1C	synchronized	132.564068	288.0	4.717263
2023-11-10	MSIL1C	synchronized	128.964512	296.0	5.129273
2023-11-11	MSIL1C	synchronized	117.313962	254.0	4.381448
2023-11-12	MSIL1C	synchronized	127.733747	262.0	3.669513
2023-11-13	MSIL1C	synchronized	115.660112	261.0	3.192290
2023-11-14	MSIL1C	synchronized	114.127587	251.0	3.649972
2023-11-15	MSIL1C	synchronized	111.305050	234.0	3.701655
2023-11-16	MSIL1C	synchronized	110.098514	227.0	3.159830
2023-11-17	MSIL1C	synchronized	112.752569	229.0	6.009297
2023-11-18	MSIL1C	synchronized	96.394335	192.0	6.790357
2023-11-20	MSIL1C	synchronized	101.277335	209.0	18.964207
2023-11-21	MSIL1C	synchronized	93.756010	200.0	29.336751
2023-11-22	MSIL1C	synchronized	8.505969	21.0	26.534324
2023-11-23	MSIL1C	synchronized	76.922383	157.0	46.136823
2023-11-24	MSIL1C	synchronized	49.917539	110.0	51.500760
2023-11-25	MSIL1C	synchronized	73.946408	149.0	61.084385
2023-11-26	MSIL1C	synchronized	115.173026	236.0	59.389796
2023-11-30	MSIL1C	synchronized	171.301155	361.0	24.970853
2023-12-01	MSIL1C	synchronized	70.114175	147.0	7.467680
2023-12-02	MSIL1C	synchronized	64.737325	129.0	3.637732
2023-12-03	MSIL1C	synchronized	39.498407	73.0	3.112461
2023-12-04	MSIL1C	synchronized	42.711347	98.0	44.350754
2023-12-05	MSIL1C	synchronized	55.221507	121.0	3.026266
2023-12-06	MSIL1C	synchronized	56.443432	116.0	2.456582
2023-11-08	MSIL2A	synchronized	159.834955	273.0	5.156798
2023-11-09	MSIL2A	synchronized	165.733099	290.0	5.772668
2023-11-10	MSIL2A	synchronized	162.371277	300.0	5.612555
2023-11-11	MSIL2A	synchronized	142.368633	246.0	4.614094
2023-11-12	MSIL2A	synchronized	67.980167	111.0	5.201007
2023-11-13	MSIL2A	synchronized	149.639818	259.0	28.509132
2023-11-14	MSIL2A	synchronized	169.477424	292.0	17.019890
2023-11-15	MSIL2A	synchronized	85.179354	142.0	4.021108
2023-11-16	MSIL2A	synchronized	140.270216	238.0	7.573814
2023-11-17	MSIL2A	synchronized	90.539176	151.0	39.912122
2023-11-18	MSIL2A	synchronized	108.488903	183.0	46.698364
2023-11-19	MSIL2A	synchronized	167.228905	261.0	28.887031
2023-11-20	MSIL2A	synchronized	172.160775	294.0	17.645701

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2023-11-21	MSIL2A	synchronized	103.916943	180.0	29.264855
2023-11-22	MSIL2A	synchronized	44.659313	85.0	5.372269
2023-11-23	MSIL2A	synchronized	108.541748	171.0	14.332134
2023-11-24	MSIL2A	synchronized	58.558831	99.0	5.201296
2023-11-25	MSIL2A	synchronized	37.938420	50.0	4.868096
2023-11-26	MSIL2A	synchronized	141.644940	230.0	38.040597
2023-11-30	MSIL2A	synchronized	336.024082	555.0	26.654134
2023-12-01	MSIL2A	synchronized	81.391240	135.0	4.151784
2023-12-02	MSIL2A	synchronized	87.274786	147.0	7.067249
2023-12-03	MSIL2A	synchronized	78.427149	124.0	5.851365
2023-12-04	MSIL2A	synchronized	24.610815	47.0	5.908434
2023-12-05	MSIL2A	synchronized	70.167867	122.0	3.857301
2023-12-06	MSIL2A	synchronized	70.981669	118.0	4.313907
2023-11-08	OLCI_L1	synchronized	48.728232	75.0	45.179534
2023-11-08	OLCI_L2	synchronized	7.760004	76.0	45.271706
2023-11-08	SLSTR_L1	synchronized	103.207310	272.0	50.788960
2023-11-08	SLSTR_L2	synchronized	24.434725	407.0	57.593631
2023-11-08	SRAL_L1	synchronized	207.821532	121.0	79.681501
2023-11-08	SRAL_L2	synchronized	6.995067	289.0	80.569942
2023-11-08	SYN_L2	synchronized	11.749971	102.0	69.501068
2023-11-09	OLCI_L1	synchronized	31.529407	50.0	39.481715
2023-11-09	OLCI_L2	synchronized	4.639943	47.0	39.779212
2023-11-09	SLSTR_L1	synchronized	74.239924	196.0	35.718789
2023-11-09	SLSTR_L2	synchronized	17.288808	291.0	47.182513
2023-11-09	SRAL_L1	synchronized	173.568460	109.0	67.652874
2023-11-09	SRAL_L2	synchronized	5.922279	266.0	68.124673
2023-11-09	SYN_L2	synchronized	8.549252	75.0	51.878697
2023-11-10	OLCI_L1	synchronized	48.786385	80.0	27.263293
2023-11-10	OLCI_L2	synchronized	5.350419	56.0	29.426739
2023-11-10	SLSTR_L1	synchronized	127.225783	336.0	32.206521
2023-11-10	SLSTR_L2	synchronized	26.893520	444.0	43.427131
2023-11-10	SRAL_L1	synchronized	253.401975	160.0	54.716646
2023-11-10	SRAL_L2	synchronized	9.032271	378.0	56.743870
2023-11-10	SYN_L2	synchronized	13.151884	120.0	47.113588
2023-11-11	OLCI_L1	synchronized	33.483611	54.0	33.124401
2023-11-11	SLSTR_L1	synchronized	94.220012	246.0	35.269294
2023-11-11	SLSTR_L2	synchronized	8.294768	122.0	46.574857
2023-11-11	SRAL_L1	synchronized	192.366723	121.0	51.695796
2023-11-11	SRAL_L2	synchronized	7.570352	294.0	52.554985
2023-11-11	SYN_L2	synchronized	7.538982	67.0	48.034301
2023-11-12	OLCI_L1	synchronized	14.556402	25.0	26.255666
2023-11-12	SLSTR_L1	synchronized	34.789543	91.0	33.847644
2023-11-12	SLSTR_L2	synchronized	3.006787	44.0	38.170436
2023-11-12	SRAL_L1	synchronized	79.273367	47.0	44.585073
2023-11-12	SRAL_L2	synchronized	3.061953	114.0	44.514019
2023-11-12	SYN_L2	synchronized	3.239717	27.0	47.202868
2023-11-13	OLCI_L1	synchronized	22.522829	39.0	25.374099
2023-11-13	SLSTR_L1	synchronized	53.246461	140.0	34.314633
2023-11-13	SLSTR_L2	synchronized	4.824085	71.0	34.547989
2023-11-13	SRAL_L1	synchronized	107.902575	70.0	45.323586
2023-11-13	SRAL_L2	synchronized	4.277099	173.0	45.373473
2023-11-13	SYN_L2	synchronized	3.608205	35.0	43.788016
2023-11-14	OLCI_L1	synchronized	12.381150	20.0	29.672865
2023-11-14	SLSTR_L1	synchronized	19.019868	51.0	35.034322
2023-11-14	SLSTR_L2	synchronized	2.315901	34.0	37.142918
2023-11-14	SRAL_L1	synchronized	63.423198	34.0	49.392537

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2023-11-14	SRAL_L2	synchronized	2.314681	77.0	59.290149
2023-11-14	SYN_L2	synchronized	1.922561	18.0	46.203297
2023-11-15	OLCI_L1	synchronized	7.031755	12.0	25.744005
2023-11-15	SLSTR_L1	synchronized	30.755761	81.0	44.019610
2023-11-15	SLSTR_L2	synchronized	2.996693	44.0	46.777775
2023-11-15	SRAL_L1	synchronized	64.289487	39.0	53.477466
2023-11-15	SRAL_L2	synchronized	2.430104	90.0	54.988888
2023-11-15	SYN_L2	synchronized	2.429513	22.0	54.949192
2023-11-16	OLCI_L1	synchronized	9.704676	16.0	102.150942
2023-11-16	OLCI_L2	synchronized	0.381285	5.0	16.044432
2023-11-16	SLSTR_L1	synchronized	46.473453	121.0	99.563129
2023-11-16	SLSTR_L2	synchronized	7.068695	113.0	48.657143
2023-11-16	SRAL_L1	synchronized	78.970481	46.0	115.903421
2023-11-16	SRAL_L2	synchronized	2.836709	105.0	104.457547
2023-11-16	SYN_L2	synchronized	3.933406	37.0	57.972723
2023-11-17	OLCI_L1	synchronized	11.362273	20.0	47.553099
2023-11-17	OLCI_L2	synchronized	1.770644	19.0	48.761043
2023-11-17	SLSTR_L1	synchronized	16.645939	44.0	52.005351
2023-11-17	SLSTR_L2	synchronized	2.611061	43.0	52.090592
2023-11-17	SRAL_L1	synchronized	33.161823	24.0	66.944270
2023-11-17	SRAL_L2	synchronized	1.472019	60.0	72.566386
2023-11-17	SYN_L2	synchronized	1.584187	12.0	117.050413
2023-11-18	OLCI_L1	synchronized	1.686146	3.0	36.863249
2023-11-18	OLCI_L2	synchronized	0.253554	3.0	36.896337
2023-11-18	SLSTR_L1	synchronized	23.715003	62.0	67.175796
2023-11-18	SLSTR_L2	synchronized	5.635416	93.0	68.808195
2023-11-18	SRAL_L1	synchronized	44.961063	30.0	80.925501
2023-11-18	SRAL_L2	synchronized	1.685530	70.0	78.596361
2023-11-18	SYN_L2	synchronized	2.401278	24.0	81.835874
2023-11-19	OLCI_L1	synchronized	10.271134	16.0	78.996441
2023-11-19	OLCI_L2	synchronized	1.628727	16.0	79.120500
2023-11-19	SLSTR_L1	synchronized	10.095546	27.0	77.061908
2023-11-19	SLSTR_L2	synchronized	2.653530	43.0	81.526800
2023-11-19	SRAL_L1	synchronized	31.915745	16.0	90.813817
2023-11-19	SRAL_L2	synchronized	0.903126	29.0	91.817684
2023-11-19	SYN_L2	synchronized	0.943692	6.0	88.351756
2023-11-20	OLCI_L1	synchronized	1.571321	2.0	61.659335
2023-11-20	OLCI_L2	synchronized	0.232468	2.0	61.848254
2023-11-20	SLSTR_L1	synchronized	21.741089	57.0	74.616564
2023-11-20	SLSTR_L2	synchronized	5.112850	85.0	93.279097
2023-11-20	SRAL_L1	synchronized	37.961232	27.0	100.020199
2023-11-20	SRAL_L2	synchronized	1.772141	73.0	102.224441
2023-11-20	SYN_L2	synchronized	1.637746	16.0	109.320650
2023-11-21	OLCI_L1	synchronized	12.032037	16.0	107.340720
2023-11-21	OLCI_L2	synchronized	1.121730	8.0	94.098770
2023-11-21	SLSTR_L1	synchronized	14.984789	40.0	111.005555
2023-11-21	SLSTR_L2	synchronized	3.183685	51.0	111.479966
2023-11-21	SRAL_L1	synchronized	49.372180	27.0	200.451847
2023-11-21	SRAL_L2	synchronized	2.017469	65.0	237.269098
2023-11-21	SYN_L2	synchronized	1.714616	14.0	120.321072
2023-11-22	OLCI_L1	synchronized	8.623516	14.0	218.881010
2023-11-22	OLCI_L2	synchronized	0.461796	4.0	98.340673
2023-11-22	SLSTR_L1	synchronized	30.734215	80.0	123.148702
2023-11-22	SLSTR_L2	synchronized	5.574229	92.0	123.090058
2023-11-22	SRAL_L1	synchronized	75.069712	51.0	218.945292
2023-11-22	SRAL_L2	synchronized	2.866520	118.0	219.132670

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2023-11-22	SYN_L2	synchronized	3.322020	31.0	223.255464
2023-11-23	OLCI_L1	synchronized	6.724637	9.0	131.433866
2023-11-23	OLCI_L2	synchronized	0.870068	6.0	131.732907
2023-11-23	SLSTR_L1	synchronized	13.551365	37.0	132.500550
2023-11-23	SLSTR_L2	synchronized	3.218829	51.0	132.333351
2023-11-23	SRAL_L1	synchronized	29.030108	15.0	146.341194
2023-11-23	SRAL_L2	synchronized	1.002708	34.0	150.289941
2023-11-23	SYN_L2	synchronized	1.044356	7.0	143.297773
2023-11-24	OLCI_L1	synchronized	5.745845	7.0	119.619163
2023-11-24	OLCI_L2	synchronized	1.293485	10.0	131.209041
2023-11-24	SLSTR_L1	synchronized	17.674292	46.0	150.959719
2023-11-24	SLSTR_L2	synchronized	2.862161	47.0	150.967523
2023-11-24	SRAL_L1	synchronized	39.269720	26.0	252.740204
2023-11-24	SRAL_L2	synchronized	1.266950	46.0	249.136203
2023-11-24	SYN_L2	synchronized	1.056403	5.0	128.268164
2023-11-25	OLCI_L1	synchronized	7.096770	9.0	59.560123
2023-11-25	OLCI_L2	synchronized	1.210268	12.0	59.754735
2023-11-25	SLSTR_L1	synchronized	28.184593	76.0	64.304983
2023-11-25	SLSTR_L2	synchronized	7.820960	128.0	68.448747
2023-11-25	SRAL_L1	synchronized	77.320320	44.0	74.950827
2023-11-25	SRAL_L2	synchronized	2.643453	92.0	77.958625
2023-11-25	SYN_L2	synchronized	1.913352	20.0	79.390515
2023-11-26	OLCI_L1	synchronized	1.590506	2.0	37.812151
2023-11-26	OLCI_L2	synchronized	0.266811	2.0	38.755611
2023-11-26	SLSTR_L1	synchronized	30.338305	80.0	70.600492
2023-11-26	SLSTR_L2	synchronized	7.272676	120.0	72.708552
2023-11-26	SRAL_L1	synchronized	61.822974	38.0	79.088382
2023-11-26	SRAL_L2	synchronized	2.430177	96.0	79.772998
2023-11-26	SYN_L2	synchronized	2.113154	18.0	82.296471
2023-11-30	OLCI_L1	synchronized	17.072009	24.0	13.222393
2023-11-30	OLCI_L2	synchronized	2.972745	25.0	15.004219
2023-11-30	SLSTR_L1	synchronized	68.087158	181.0	18.871681
2023-11-30	SLSTR_L2	synchronized	16.429705	273.0	21.817215
2023-11-30	SRAL_L1	synchronized	140.819444	86.0	40.726974
2023-11-30	SRAL_L2	synchronized	5.478008	213.0	41.877104
2023-11-30	SYN_L2	synchronized	3.665684	34.0	41.308574
2023-12-01	OLCI_L1	synchronized	12.190648	17.0	15.090334
2023-12-01	OLCI_L2	synchronized	1.925703	16.0	9.930662
2023-12-01	SLSTR_L1	synchronized	59.816291	159.0	18.286431
2023-12-01	SLSTR_L2	synchronized	14.234546	238.0	23.178656
2023-12-01	SRAL_L1	synchronized	130.638926	78.0	40.202940
2023-12-01	SRAL_L2	synchronized	4.869929	180.0	41.409020
2023-12-01	SYN_L2	synchronized	3.197649	35.0	41.322134
2023-12-02	OLCI_L1	synchronized	11.450019	16.0	8.993265
2023-12-02	OLCI_L2	synchronized	2.148546	18.0	10.025875
2023-12-02	SLSTR_L1	synchronized	58.128809	155.0	21.423061
2023-12-02	SLSTR_L2	synchronized	14.228150	237.0	26.471389
2023-12-02	SRAL_L1	synchronized	119.109824	71.0	43.252307
2023-12-02	SRAL_L2	synchronized	4.569011	169.0	44.499241
2023-12-02	SYN_L2	synchronized	3.799552	33.0	44.333629
2023-12-03	OLCI_L1	synchronized	15.034548	21.0	12.029090
2023-12-03	OLCI_L2	synchronized	2.447936	21.0	11.977932
2023-12-03	SLSTR_L1	synchronized	65.522074	175.0	22.211098
2023-12-03	SLSTR_L2	synchronized	15.942036	265.0	26.593547
2023-12-03	SRAL_L1	synchronized	128.821877	80.0	44.748562
2023-12-03	SRAL_L2	synchronized	5.100232	194.0	45.766138

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2023-12-03	SYN_L2	synchronized	3.929977	41.0	46.050172
2023-12-04	OLCI_L1	synchronized	12.903201	19.0	17.112494
2023-12-04	OLCI_L2	synchronized	1.941339	17.0	18.061251
2023-12-04	SLSTR_L1	synchronized	49.933563	134.0	11.507559
2023-12-04	SLSTR_L2	synchronized	13.374912	223.0	28.529948
2023-12-04	SRAL_L1	synchronized	112.606202	68.0	45.058783
2023-12-04	SRAL_L2	synchronized	4.444867	169.0	47.260032
2023-12-04	SYN_L2	synchronized	2.270172	21.0	45.944595
2023-12-05	OLCI_L1	synchronized	4.229595	6.0	29.647869
2023-12-05	OLCI_L2	synchronized	0.680110	6.0	31.522253
2023-12-05	SLSTR_L1	synchronized	47.790028	129.0	32.830473
2023-12-05	SLSTR_L2	synchronized	9.979572	167.0	37.350829
2023-12-05	SRAL_L1	synchronized	101.460152	66.0	55.997990
2023-12-05	SRAL_L2	synchronized	3.707952	148.0	56.969846
2023-12-05	SYN_L2	synchronized	2.512612	33.0	55.316849
2023-12-06	OLCI_L1	synchronized	10.208387	15.0	24.484010
2023-12-06	OLCI_L2	synchronized	1.616522	14.0	24.357857
2023-12-06	SLSTR_L1	synchronized	48.208492	127.0	27.736682
2023-12-06	SLSTR_L2	synchronized	11.162563	188.0	43.849679
2023-12-06	SRAL_L1	synchronized	103.399911	68.0	58.025015
2023-12-06	SRAL_L2	synchronized	4.232436	163.0	59.422387
2023-12-06	SYN_L2	synchronized	2.023663	25.0	55.364065
2023-11-08	NRTI_L2	synchronized	3.959050	181.0	1.903485
2023-11-08	OFFL_L1B	synchronized	205.891944	76.0	3.871582
2023-11-08	OFFL_L2	synchronized	41.081187	103.0	56.369903
2023-11-09	NRTI_L2	synchronized	4.187572	189.0	1.903376
2023-11-09	OFFL_L1B	synchronized	216.764547	80.0	4.115448
2023-11-09	OFFL_L2	synchronized	43.476564	120.0	44.715880
2023-11-10	NRTI_L2	synchronized	3.280644	153.0	1.836904
2023-11-10	OFFL_L1B	synchronized	194.918449	72.0	3.817613
2023-11-10	OFFL_L2	synchronized	54.698769	148.0	41.998371
2023-11-11	NRTI_L2	synchronized	2.554160	144.0	1.886835
2023-11-11	OFFL_L1B	synchronized	193.760745	72.0	3.966401
2023-11-11	OFFL_L2	synchronized	46.973573	122.0	39.686572
2023-11-12	NRTI_L2	synchronized	3.513919	171.0	1.903386
2023-11-12	OFFL_L1B	synchronized	194.908693	72.0	3.789386
2023-11-12	OFFL_L2	synchronized	44.942668	118.0	39.385744
2023-11-13	NRTI_L2	synchronized	3.519233	155.0	1.920049
2023-11-13	OFFL_L1B	synchronized	153.477258	56.0	3.840849
2023-11-13	OFFL_L2	synchronized	44.786517	118.0	39.476090
2023-11-14	NRTI_L2	synchronized	2.959088	144.0	1.903597
2023-11-14	OFFL_L1B	synchronized	175.377795	64.0	4.125766
2023-11-14	OFFL_L2	synchronized	42.267129	108.0	39.718559
2023-11-15	NRTI_L2	synchronized	2.731892	153.0	1.920133
2023-11-15	OFFL_L1B	synchronized	197.332000	72.0	4.152721
2023-11-15	OFFL_L2	synchronized	36.769558	97.0	39.437243
2023-11-16	NRTI_L2	synchronized	3.286826	170.0	1.870115
2023-11-16	OFFL_L1B	synchronized	197.228557	72.0	4.034454
2023-11-16	OFFL_L2	synchronized	40.649843	106.0	39.784853
2023-11-17	NRTI_L2	synchronized	3.679518	171.0	1.886911
2023-11-17	OFFL_L1B	synchronized	187.868989	68.0	3.974665
2023-11-17	OFFL_L2	synchronized	45.387741	119.0	39.534748
2023-11-18	NRTI_L2	synchronized	3.371967	153.0	1.886734
2023-11-18	OFFL_L1B	synchronized	175.337305	64.0	3.826152
2023-11-18	OFFL_L2	synchronized	45.113444	116.0	39.462746
2023-11-19	NRTI_L2	synchronized	2.623192	144.0	1.886823

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2023-11-19	OFFL_L1B	synchronized	175.386903	64.0	3.886712
2023-11-19	OFFL_L2	synchronized	41.904510	107.0	39.762071
2023-11-20	NRTI_L2	synchronized	3.117526	153.0	1.870131
2023-11-20	OFFL_L1B	synchronized	175.319329	64.0	4.005817
2023-11-20	OFFL_L2	synchronized	40.577953	106.0	39.414212
2023-11-21	NRTI_L2	synchronized	3.347039	160.0	1.886841
2023-11-21	OFFL_L1B	synchronized	168.854623	62.0	3.906878
2023-11-21	OFFL_L2	synchronized	28.750815	71.0	41.140499
2023-11-22	NRTI_L2	synchronized	1.111688	45.0	1.856933
2023-11-22	OFFL_L1B	synchronized	175.201218	64.0	9.795063
2023-11-22	OFFL_L2	synchronized	23.920322	65.0	57.376672
2023-11-23	NRTI_L2	synchronized	2.792706	135.0	1.906878
2023-11-23	OFFL_L1B	synchronized	153.318088	56.0	3.777982
2023-11-23	OFFL_L2	synchronized	61.328966	159.0	51.811379
2023-11-24	NRTI_L2	synchronized	2.671709	135.0	1.907671
2023-11-24	OFFL_L1B	synchronized	131.511397	48.0	3.953785
2023-11-24	OFFL_L2	synchronized	37.065489	97.0	39.921961
2023-11-25	NRTI_L2	synchronized	2.882522	126.0	1.824368
2023-11-25	OFFL_L1B	synchronized	133.880587	56.0	3.813815
2023-11-25	OFFL_L2	synchronized	28.557912	91.0	39.032158
2023-11-26	NRTI_L2	synchronized	2.816796	117.0	1.807709
2023-11-26	OFFL_L1B	synchronized	129.032238	48.0	3.758719
2023-11-26	OFFL_L2	synchronized	27.836918	77.0	39.193633
2023-11-30	NRTI_L2	synchronized	6.728494	315.0	12.805936
2023-11-30	OFFL_L1B	synchronized	412.327214	160.0	16.524593
2023-11-30	OFFL_L2	synchronized	94.730416	261.0	69.180834
2023-12-01	NRTI_L2	synchronized	2.285977	117.0	1.872678
2023-12-01	OFFL_L1B	synchronized	130.317242	48.0	3.830044
2023-12-01	OFFL_L2	synchronized	42.366730	127.0	47.152110
2023-12-02	NRTI_L2	synchronized	2.279849	117.0	1.872729
2023-12-02	OFFL_L1B	synchronized	152.093155	56.0	3.810835
2023-12-02	OFFL_L2	synchronized	31.953277	96.0	39.420872
2023-12-03	NRTI_L2	synchronized	2.651031	142.0	1.889320
2023-12-03	OFFL_L1B	synchronized	175.286997	64.0	3.855136
2023-12-03	OFFL_L2	synchronized	25.375644	73.0	39.304927
2023-12-04	NRTI_L2	synchronized	2.589010	126.0	1.830986
2023-12-04	OFFL_L1B	synchronized	130.256573	48.0	3.897804
2023-12-04	OFFL_L2	synchronized	29.912851	85.0	39.149304
2023-12-05	NRTI_L2	synchronized	2.892258	144.0	1.862158
2023-12-05	OFFL_L1B	synchronized	173.967785	64.0	3.907407
2023-12-05	OFFL_L2	synchronized	45.728130	116.0	44.537342
2023-12-06	NRTI_L2	synchronized	2.892666	135.0	1.945420
2023-12-06	OFFL_L1B	synchronized	153.398604	56.0	3.686374
2023-12-06	OFFL_L2	synchronized	33.822938	93.0	39.443460
2023-11-08	s1_iw	NaN	71.727711	27.0	NaN
2023-11-08	s1_ew	NaN	40.859303	22.0	NaN
2023-11-08	s2_l1c	NaN	46.791477	50.0	NaN
2023-11-08	s2_l2a	NaN	13.392838	8.0	NaN
2023-11-09	s1_iw	NaN	158.618214	65.0	NaN
2023-11-09	s1_ew	NaN	36.709232	21.0	NaN
2023-11-09	s2_l1c	NaN	56.459061	66.0	NaN
2023-11-09	s2_l2a	NaN	3.815060	4.0	NaN
2023-11-10	s2_l1c	NaN	54.974918	0.0	NaN
2023-11-10	s2_l2a	NaN	54.974918	0.0	NaN
2023-11-10	s1_iw	NaN	106.885338	36.0	NaN
2023-11-10	s1_ew	NaN	18.160828	9.0	NaN

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2023-11-11	s1_iw	NaN	81.798687	29.0	NaN
2023-11-11	s1_ew	NaN	12.963787	3.0	NaN
2023-11-11	s2_l1c	NaN	55.344734	0.0	NaN
2023-11-11	s2_l2a	NaN	55.344734	0.0	NaN
2023-11-12	s2_l2a	NaN	55.714664	0.0	NaN
2023-11-12	s2_l1c	NaN	55.714664	0.0	NaN
2023-11-12	s1_iw	NaN	119.679085	44.0	NaN
2023-11-12	s1_ew	NaN	19.649673	5.0	NaN
2023-11-13	s1_iw	NaN	40.192558	18.0	NaN
2023-11-13	s1_ew	NaN	42.489491	15.0	NaN
2023-11-13	s2_l1c	NaN	56.084721	0.0	NaN
2023-11-13	s2_l2a	NaN	56.084721	0.0	NaN
2023-11-14	s2_l1c	NaN	56.454937	0.0	NaN
2023-11-14	s1_iw	NaN	90.339096	39.0	NaN
2023-11-14	s1_ew	NaN	31.700424	12.0	NaN
2023-11-14	s2_l2a	NaN	56.454937	0.0	NaN
2023-11-15	s2_l2a	NaN	56.825500	0.0	NaN
2023-11-15	s2_l1c	NaN	56.825500	0.0	NaN
2023-11-15	s1_ew	NaN	29.816742	13.0	NaN
2023-11-15	s1_iw	NaN	32.912193	14.0	NaN
2023-11-16	s1_iw	NaN	102.998287	43.0	NaN
2023-11-16	s1_ew	NaN	21.325142	9.0	NaN
2023-11-16	s2_l1c	NaN	57.196110	0.0	NaN
2023-11-16	s2_l2a	NaN	57.196110	0.0	NaN
2023-11-17	s1_iw	NaN	90.978767	35.0	NaN
2023-11-17	s1_ew	NaN	24.816479	9.0	NaN
2023-11-17	s2_l1c	NaN	57.566879	0.0	NaN
2023-11-17	s2_l2a	NaN	57.566879	0.0	NaN
2023-11-18	s2_l2a	NaN	57.937840	0.0	NaN
2023-11-18	s2_l1c	NaN	57.937840	0.0	NaN
2023-11-18	s1_iw	NaN	51.365803	20.0	NaN
2023-11-18	s1_ew	NaN	32.096382	11.0	NaN
2023-11-19	s1_iw	NaN	101.190651	38.0	NaN
2023-11-19	s1_ew	NaN	21.328133	5.0	NaN
2023-11-19	s2_l1c	NaN	58.308804	0.0	NaN
2023-11-19	s2_l2a	NaN	58.308804	0.0	NaN
2023-11-20	s2_l2a	NaN	59.145699	0.0	NaN
2023-11-20	s2_l1c	NaN	59.145699	0.0	NaN
2023-11-20	s1_iw	NaN	36.001286	16.0	NaN
2023-11-20	s1_ew	NaN	29.985985	9.0	NaN
2023-11-21	s1_iw	NaN	90.088921	15.0	NaN
2023-11-21	s1_ew	NaN	23.436420	7.0	NaN
2023-11-21	s2_l1c	NaN	59.517048	0.0	NaN
2023-11-21	s2_l2a	NaN	59.517048	0.0	NaN
2023-11-22	s1_iw	NaN	68.850166	25.0	NaN
2023-11-22	s1_ew	NaN	13.943081	4.0	NaN
2023-11-22	s2_l1c	NaN	59.888535	0.0	NaN
2023-11-22	s2_l2a	NaN	59.888535	0.0	NaN
2023-11-23	s1_iw	NaN	89.453014	29.0	NaN
2023-11-23	s1_ew	NaN	13.151928	3.0	NaN
2023-11-23	s2_l1c	NaN	60.260136	0.0	NaN
2023-11-23	s2_l2a	NaN	60.260136	0.0	NaN
2023-11-24	s2_l2a	NaN	60.631989	0.0	NaN
2023-11-24	s2_l1c	NaN	60.631989	0.0	NaN
2023-11-24	s1_ew	NaN	19.700573	5.0	NaN
2023-11-24	s1_iw	NaN	120.863743	38.0	NaN

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2023-11-25	s1_iw	NaN	39.601536	18.0	NaN
2023-11-25	s1_ew	NaN	42.971470	15.0	NaN
2023-11-25	s2_l1c	NaN	60.841179	0.0	NaN
2023-11-25	s2_l2a	NaN	60.841179	0.0	NaN
2023-11-26	s1_iw	NaN	87.482067	38.0	NaN
2023-11-26	s1_ew	NaN	32.002701	12.0	NaN
2023-11-26	s2_l1c	NaN	60.841110	0.0	NaN
2023-11-26	s2_l2a	NaN	60.841110	0.0	NaN
2023-11-27	s1_iw	NaN	10.872917	6.0	NaN
2023-11-27	s1_ew	NaN	24.371887	9.0	NaN
2023-11-27	s2_l1c	NaN	60.649769	0.0	NaN
2023-11-27	s2_l2a	NaN	60.649769	0.0	NaN
2023-11-28	s2_l1c	NaN	72.618771	0.0	NaN
2023-11-28	s2_l2a	NaN	72.618771	0.0	NaN
2023-11-28	s1_iw	NaN	79.707420	40.0	NaN
2023-11-28	s1_ew	NaN	26.243217	11.0	NaN
2023-11-29	s1_iw	NaN	81.718384	34.0	NaN
2023-11-29	s1_ew	NaN	24.628780	9.0	NaN
2023-11-29	s2_l1c	NaN	61.094608	0.0	NaN
2023-11-29	s2_l2a	NaN	61.094608	0.0	NaN
2023-11-30	s2_l1c	NaN	61.467491	0.0	NaN
2023-11-30	s2_l2a	NaN	61.467491	0.0	NaN
2023-11-30	s1_iw	NaN	33.535721	18.0	NaN
2023-11-30	s1_ew	NaN	32.429714	12.0	NaN
2023-12-01	s1_iw	NaN	101.027428	38.0	NaN
2023-12-01	s1_ew	NaN	20.953297	6.0	NaN
2023-12-01	s2_l1c	NaN	61.840569	0.0	NaN
2023-12-01	s2_l2a	NaN	61.840569	0.0	NaN
2023-12-02	s2_l2a	NaN	62.214001	0.0	NaN
2023-12-02	s1_iw	NaN	27.709328	15.0	NaN
2023-12-02	s1_ew	NaN	29.859928	10.0	NaN
2023-12-02	s2_l1c	NaN	62.214001	0.0	NaN
2023-12-03	s2_l1c	NaN	62.587299	0.0	NaN
2023-12-03	s2_l2a	NaN	62.587299	0.0	NaN
2023-12-03	s1_iw	NaN	86.527813	41.0	NaN
2023-12-03	s1_ew	NaN	32.853512	12.0	NaN
2023-12-04	s2_l2a	NaN	62.960537	0.0	NaN
2023-12-04	s1_iw	NaN	13.739460	4.0	NaN
2023-12-04	s1_ew	NaN	42.451347	14.0	NaN
2023-12-04	s2_l1c	NaN	62.960537	0.0	NaN
2023-12-05	s2_l1c	NaN	62.960537	0.0	NaN
2023-12-05	s2_l2a	NaN	62.960537	0.0	NaN
2023-12-05	s1_ew	NaN	62.960537	0.0	NaN
2023-12-05	s1_iw	NaN	62.960537	0.0	NaN
2023-12-06	s1_iw	NaN	41.587582	18.0	NaN
2023-12-06	s2_l1c	NaN	62.960537	0.0	NaN
2023-12-06	s1_ew	NaN	62.960537	0.0	NaN
2023-12-06	s2_l2a	NaN	62.960537	0.0	NaN

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