NBS monthly report - 2024 July

MET Norway - NBS team

Oct 03, 2024

CONTENTS

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 implemented as a part of the operational infrastructure at MET Norway. As so it follows the normal procedures for planning, implementation and testing, and operations. 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 performance as operator of the NBS. Monthly reports will be created monthly to regularly communicate 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 specified 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 Copernicus Data Space Ecosystem (CDSE - dataspace.copernicus.eu). CDSE 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 CDSE and available for users at the different FEs, it is necessary to understand the architecture of MET Norway's DHR.

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

CDSE Copernicus Data Space Ecosystem

S1 Sentinel-1

S2 Sentinel-2

S2L1C Sentinel-2 Level-1 C

S2L2A Sentinel-2 Level-2 A

S3 Sentinel-3

S5p Sentinel-5p

QUICK SUMMARY

The table below shows a short overview of the NBS performance operation during the last 30 days. The number of products are compared against CDSE. All columns represents the number of products in each portal except 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	8694	40447	40625	36265	15860	19	31255	15.123
colhub-archive.met.no	8695	40163	40340	35771	15793	9	6544	3.264
datas-pace.copernicus.eu	11793	40776	40750	54947	0			

Finally, the total amount of disk space dedicated to the NBS project, including either products in SAFE and NetCDF formats, represents 5845 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 6206 Tb; while in 12 months it is forecast to become 6870 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.

Note that scihub is no longer in operation but is included for historical comparisons.

3.1 Products on portals

The following section contains an update on the Sentinel-1 products included in the different FEs and BEs.
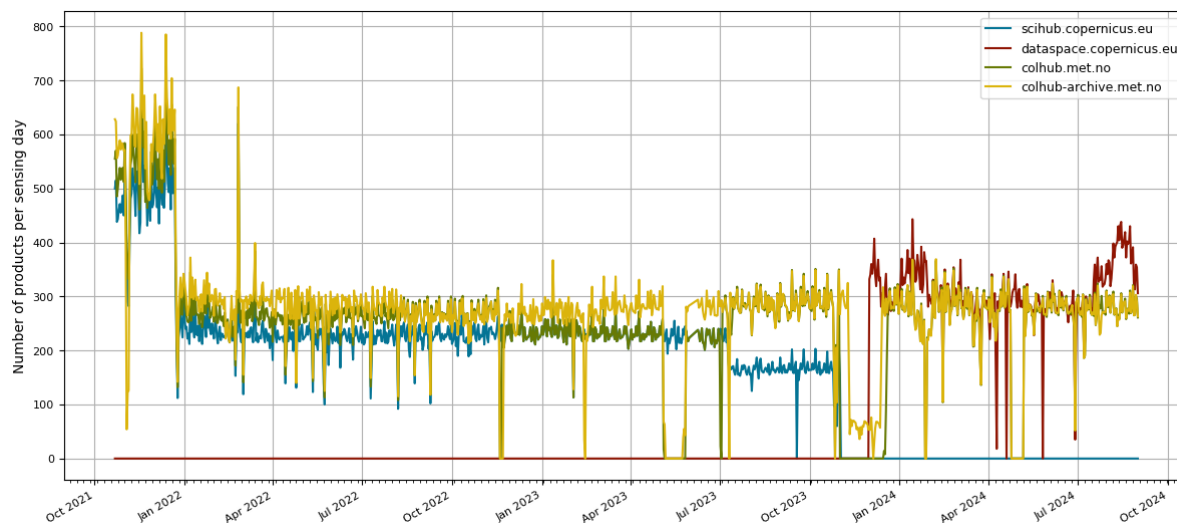
The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-1.

While the figure below shows a zoom on the last month.
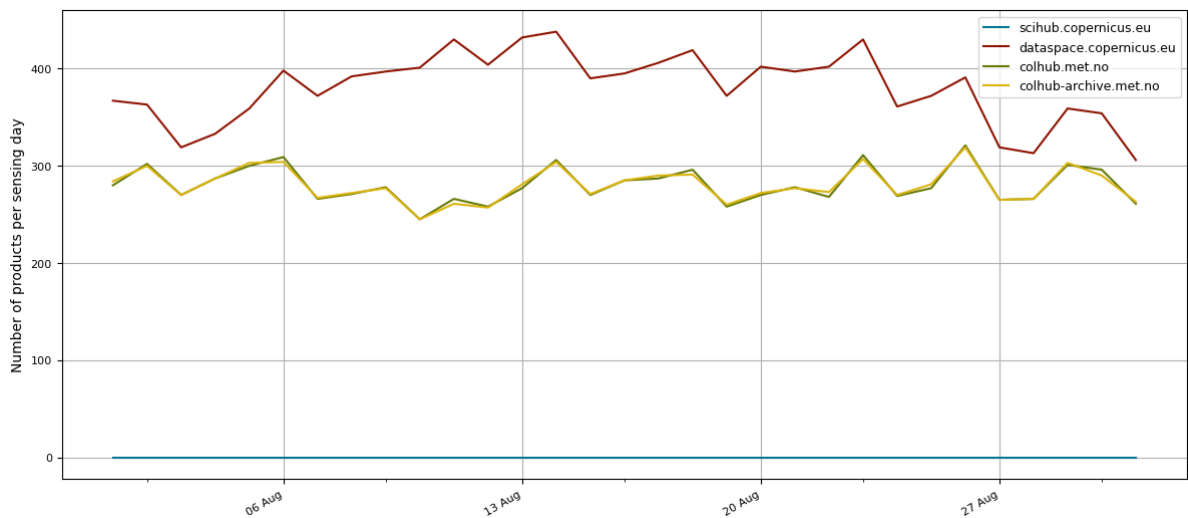
A table is also included for more detailed information.

sensing_date	colhub.met.no	dataspace.copernicus.eu	colhub-archive.met.no
2024-08-01	280.0	367.0	284.0
2024-08-02	302.0	363.0	300.0
2024-08-03	270.0	319.0	270.0
2024-08-04	287.0	333.0	287.0
2024-08-05	300.0	359.0	303.0
2024-08-06	309.0	398.0	304.0
2024-08-07	266.0	372.0	267.0
2024-08-08	271.0	392.0	272.0
2024-08-09	278.0	397.0	277.0
2024-08-10	245.0	401.0	245.0
2024-08-11	266.0	430.0	261.0
2024-08-12	258.0	404.0	257.0
2024-08-13	277.0	432.0	281.0
2024-08-14	306.0	438.0	304.0
2024-08-15	270.0	390.0	271.0
2024-08-16	285.0	395.0	285.0
2024-08-17	287.0	406.0	290.0
2024-08-18	296.0	419.0	291.0
2024-08-19	258.0	372.0	260.0
2024-08-20	270.0	402.0	272.0
2024-08-21	278.0	397.0	277.0
2024-08-22	268.0	402.0	273.0
2024-08-23	311.0	430.0	307.0
2024-08-24	269.0	361.0	270.0
2024-08-25	277.0	372.0	281.0
2024-08-26	321.0	391.0	319.0
2024-08-27	265.0	319.0	265.0
2024-08-28	266.0	313.0	266.0
2024-08-29	301.0	359.0	303.0
2024-08-30	296.0	354.0	290.0
2024-08-31	261.0	306.0	263.0

3.2 Missing products

The overall total number of Sentinel-1 products is 6518529. The number of overall Sentinel-1 missing products consists of 3401204 images. This represents that a 500% of the total was included in MET Norway DHR, while a -400% was not included.

The total number of Sentinel-1 products in August is 1445000. The number of Sentinel-1 missing products during August consists of 1304238 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.
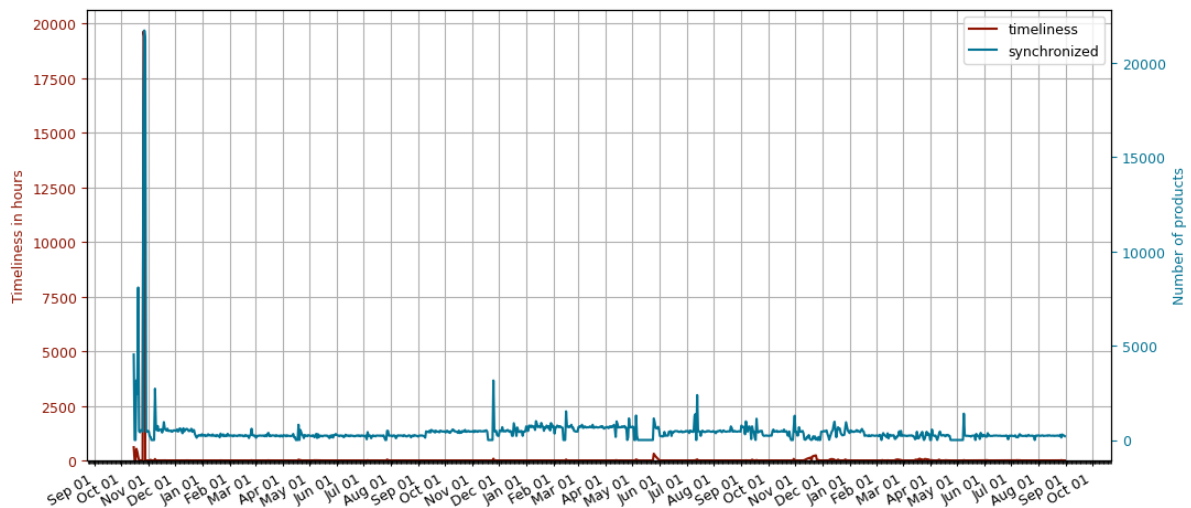
The figure above shows an overall status of the Sentinel-1 synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last month for the synchronization between ESA datahub and MET Norway BE.
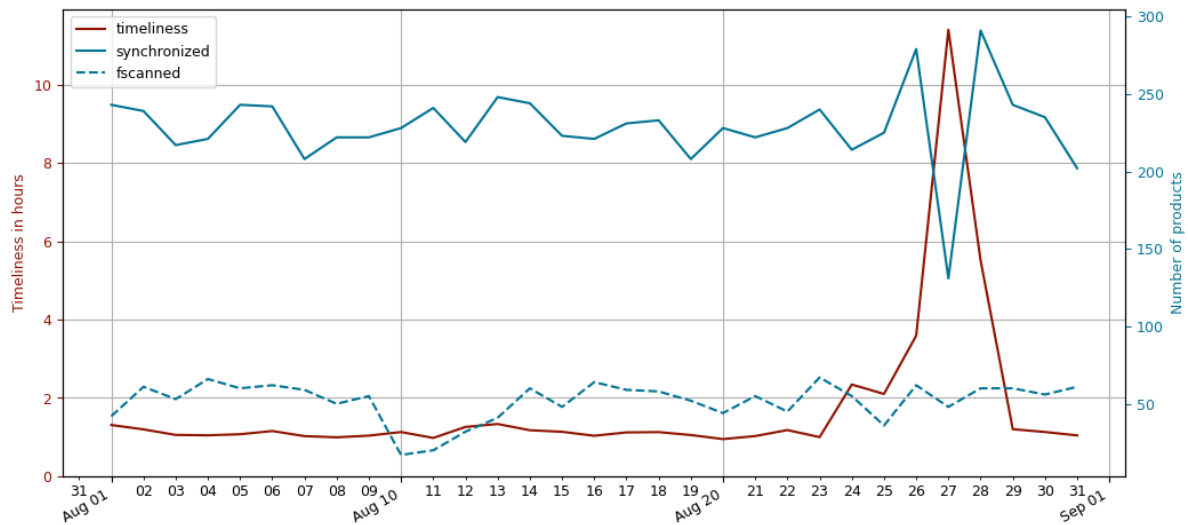
A more detailed information is given in the table below where the last month is assessed for products synchronized from ESA.

```
                  size    number   timeliness
day
2024-08-01   599.962540     243     1.306587
2024-08-02   626.460852     239     1.194507
2024-08-03   470.924241     217     1.052842
2024-08-04   547.186384     221     1.043226
2024-08-05   553.139332     243     1.070350
2024-08-06   596.027821     242     1.152466
2024-08-07   519.369748     208     1.022555
2024-08-08   485.861792     222     0.991942
2024-08-09   548.726064     222     1.034636
2024-08-10   521.557093     228     1.126413
2024-08-11   584.048413     241     0.975805
2024-08-12   521.397379     219     1.256743
2024-08-13   642.417247     248     1.331754
2024-08-14   644.705678     244     1.173010
2024-08-15   473.991065     223     1.132782
2024-08-16   546.961296     221     1.031561
2024-08-17   545.626095     231     1.117197
2024-08-18   591.799471     233     1.124831
2024-08-19   519.331064     208     1.050276
2024-08-20   488.768887     228     0.946733
2024-08-21   547.485432     222     1.023512
2024-08-22   520.633616     228     1.176559
2024-08-23   576.378752     240     0.996883
2024-08-24   550.139148     214     2.339792
2024-08-25   551.689568     225     2.099658
2024-08-26   747.327985     279     3.587906
2024-08-27   268.358374     131    11.400380
2024-08-28   732.490700     291     5.510151
2024-08-29   552.835212     243     1.199134
2024-08-30   599.429859     235     1.127604
2024-08-31   517.002242     202     1.040611
```

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

```
              size   number   timeliness
day
2024-08-01  54.160355      42     0.776811
2024-08-02  77.514326      61     0.764434
2024-08-03  50.796370      53     0.606532
2024-08-04  73.837880      66     0.635253
2024-08-05  75.219300      60     0.784368
2024-08-06  67.188488      62     0.659493
2024-08-07  75.472403      59     0.700900
2024-08-08  46.457868      50     0.588363
2024-08-09  72.966428      55     2.968935
2024-08-10  42.806085      17     0.724379
2024-08-11  55.057153      20     0.606151
2024-08-12  65.467974      32     0.922468
2024-08-13  50.059847      41     0.833970
2024-08-14  75.513669      60     0.759884
2024-08-15  44.272647      48     0.605280
2024-08-16  70.099329      64     0.670537
2024-08-17  69.860278      59     0.780886
2024-08-18  60.738873      58     0.632225
2024-08-19  60.733092      52     0.731195
2024-08-20  47.245615      44     0.699167
2024-08-21  68.583217      55     0.924890
2024-08-22  45.671445      45     0.678638
2024-08-23  67.527510      67     0.641856
2024-08-24  73.042061      55     0.681335
2024-08-25  35.925059      36     0.767770
2024-08-26  74.345947      62     0.848102
2024-08-27  46.350413      48     0.644120
2024-08-28  64.631141      60     0.606173
2024-08-29  75.134794      60     0.779482
2024-08-30  64.662155      56     0.537168
2024-08-31  68.564936      61     0.814679
```

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.

Note that scihub is no longer in operation but is included for historical comparisons.

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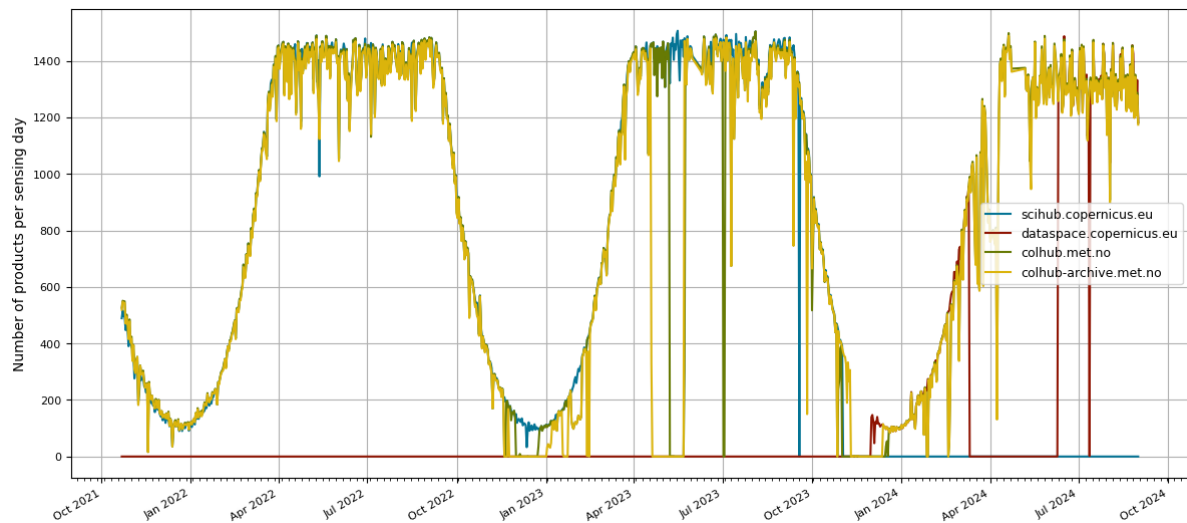
The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-2 Level-1C.

While the figure below shows a zoom on the last month.

A table is also included for more detailed information.

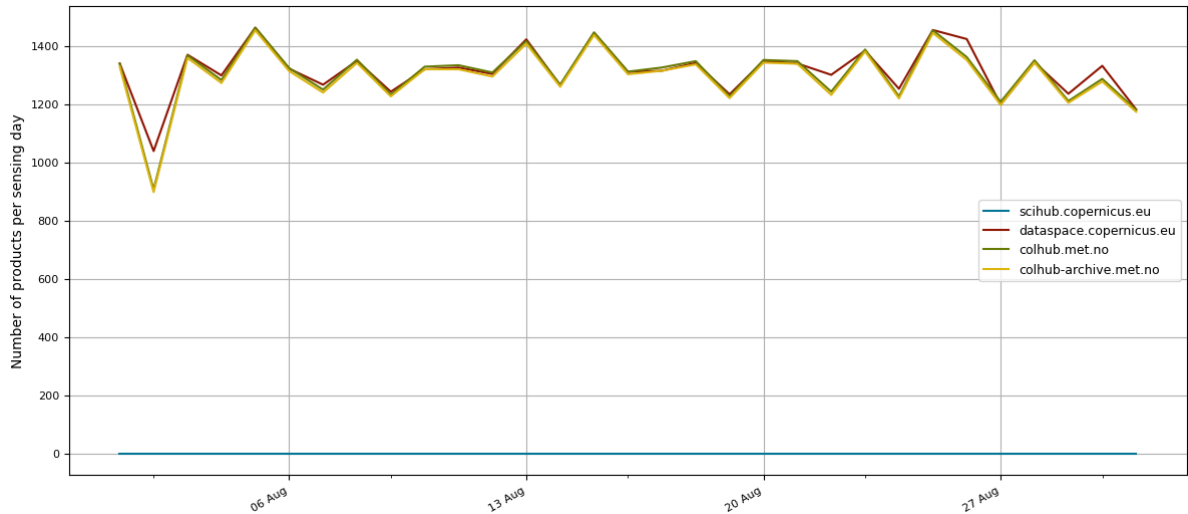|	colhub.met.no	dataspace.copernicus.eu	colhub-archive.met.no
sensing_date			
2024-08-01	1339.0	1340.0	1329.0
2024-08-02	907.0	1039.0	898.0
2024-08-03	1368.0	1370.0	1359.0
2024-08-04	1283.0	1299.0	1273.0
2024-08-05	1463.0	1463.0	1454.0
2024-08-06	1324.0	1322.0	1314.0
2024-08-07	1250.0	1267.0	1240.0
2024-08-08	1353.0	1349.0	1342.0
2024-08-09	1233.0	1243.0	1227.0
2024-08-10	1329.0	1320.0	1320.0
2024-08-11	1334.0	1326.0	1320.0
2024-08-12	1309.0	1304.0	1295.0
2024-08-13	1417.0	1423.0	1408.0
2024-08-14	1267.0	1265.0	1260.0
2024-08-15	1447.0	1445.0	1438.0
2024-08-16	1312.0	1311.0	1303.0
2024-08-17	1326.0	1315.0	1315.0
2024-08-18	1348.0	1342.0	1337.0
2024-08-19	1227.0	1234.0	1221.0
2024-08-20	1352.0	1349.0	1343.0
2024-08-21	1348.0	1340.0	1339.0
2024-08-22	1243.0	1301.0	1232.0
2024-08-23	1388.0	1384.0	1381.0
2024-08-24	1227.0	1253.0	1220.0
2024-08-25	1454.0	1455.0	1445.0
2024-08-26	1362.0	1424.0	1352.0
2024-08-27	1208.0	1199.0	1198.0
2024-08-28	1351.0	1344.0	1343.0
2024-08-29	1211.0	1236.0	1205.0
2024-08-30	1287.0	1332.0	1278.0
2024-08-31	1180.0	1182.0	1174.0

4.2 Missing products

The overall total number of Sentinel-2 Level-1C products is 6518529. The number of overall Sentinel-2 Level-1C missing products consists of 3401204 images. This represents that a 500% of the total was included in MET Norway DHR, while a -400% was not included.

The total number of Sentinel-2 Level-1C products in August is 1445000. The number of Sentinel-2 Level-1C missing products during August consists of 1304238 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.
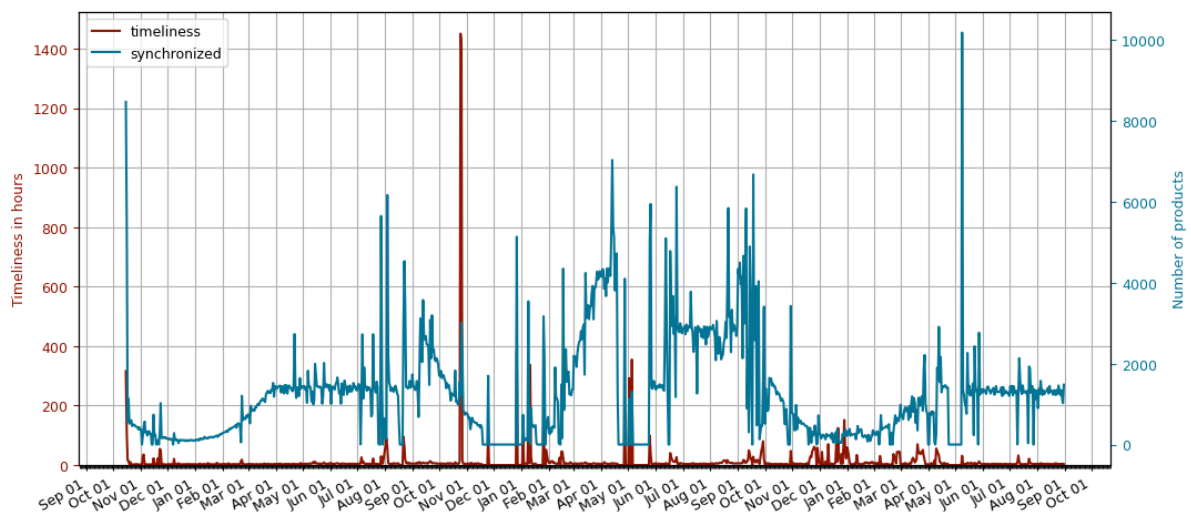
The figure above shows an overall status of the Sentinel-2 Level-1C synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last month for the synchronization between ESA datahub and MET Norway BE.
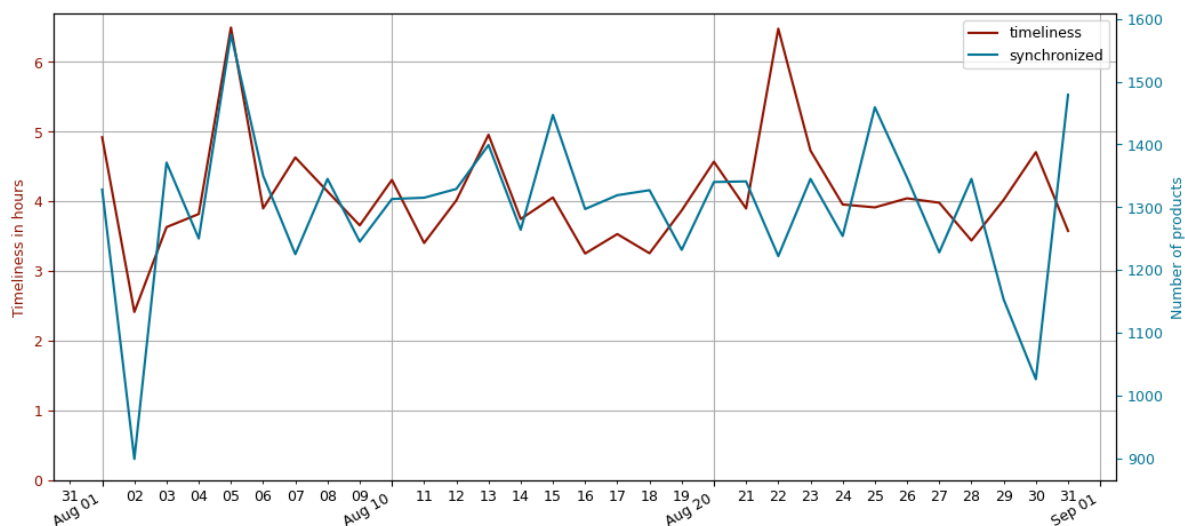
A more detailed information is given in the table below where the last month is assessed for products synchronized from ESA.

```
                  size   number  timeliness
day
2024-08-01  566.518880    1328    4.917333
2024-08-02  394.582656     899    2.411881
2024-08-03  598.627261    1371    3.628951
2024-08-04  554.716938    1250    3.816718
2024-08-05  725.407676    1575    6.491926
2024-08-06  598.039775    1350    3.897006
2024-08-07  525.170891    1225    4.628209
2024-08-08  546.061973    1345    4.139949
2024-08-09  528.376842    1245    3.653539
2024-08-10  564.269424    1313    4.305992
2024-08-11  555.296435    1315    3.401353
2024-08-12  581.984783    1329    4.011899
2024-08-13  620.058930    1399    4.953284
2024-08-14  545.848699    1264    3.745068
2024-08-15  629.043253    1447    4.053941
2024-08-16  550.582174    1297    3.250070
2024-08-17  538.256441    1319    3.529138
2024-08-18  562.972571    1327    3.253908
2024-08-19  550.386631    1232    3.867627
2024-08-20  578.007726    1340    4.567247
2024-08-21  576.546740    1341    3.895732
2024-08-22  529.368418    1222    6.474768
2024-08-23  598.085093    1345    4.726281
2024-08-24  563.228493    1254    3.953632
2024-08-25  655.555514    1459    3.911808
2024-08-26  596.275347    1347    4.041596
2024-08-27  537.026268    1228    3.978553
2024-08-28  590.871907    1345    3.436297
2024-08-29  523.236433    1153    4.019606
2024-08-30  456.137822    1026    4.703679
2024-08-31  635.903331    1479    3.574846
```

FIVE

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.

Note that scihub is no longer in operation but is included for historical comparisons.

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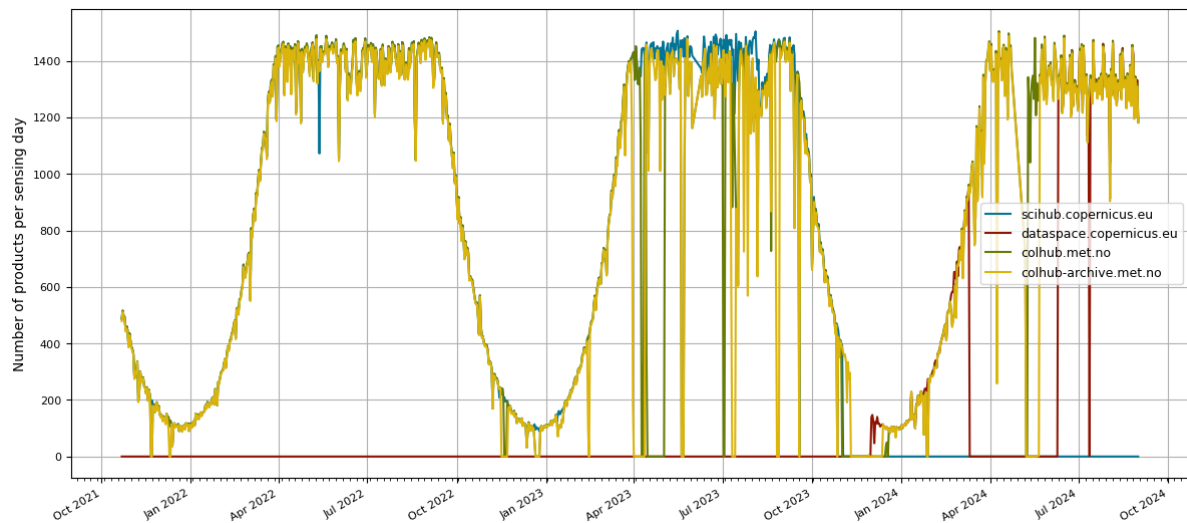
The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-2 Level-2A.

While the figure below shows a zoom on the last month.
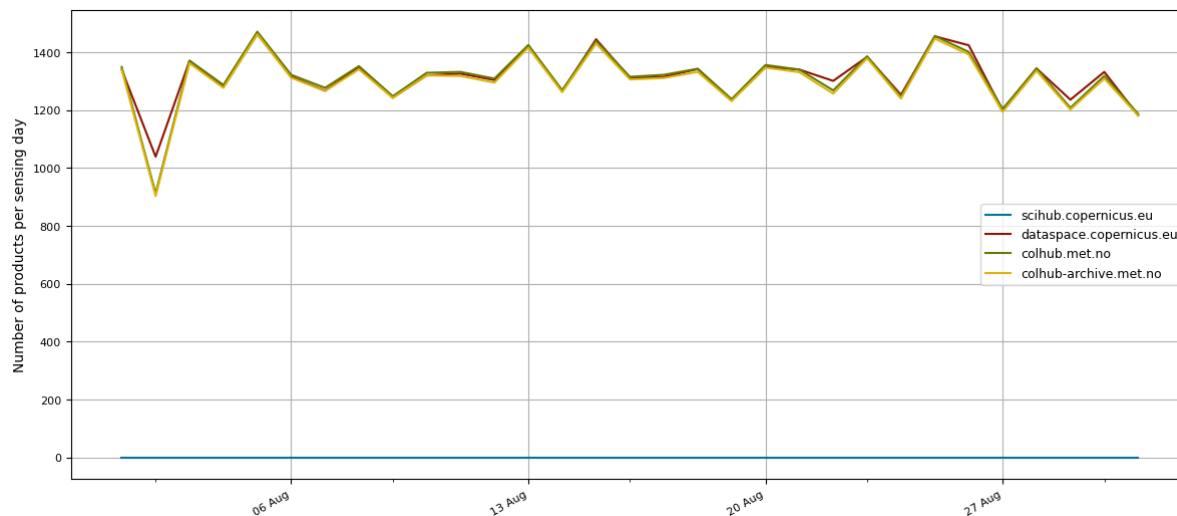
A table is also included for more detailed information.

sensing_date	colhub.met.no	dataspace.copernicus.eu	colhub-archive.met.no
2024-08-01	1349.0	1340.0	1339.0
2024-08-02	912.0	1039.0	903.0
2024-08-03	1371.0	1370.0	1362.0
2024-08-04	1287.0	1280.0	1277.0
2024-08-05	1471.0	1463.0	1462.0
2024-08-06	1322.0	1315.0	1312.0
2024-08-07	1277.0	1267.0	1266.0
2024-08-08	1352.0	1349.0	1341.0
2024-08-09	1248.0	1243.0	1242.0
2024-08-10	1329.0	1320.0	1320.0
2024-08-11	1332.0	1326.0	1318.0
2024-08-12	1309.0	1304.0	1295.0
2024-08-13	1425.0	1423.0	1416.0
2024-08-14	1269.0	1265.0	1262.0
2024-08-15	1439.0	1445.0	1430.0
2024-08-16	1315.0	1311.0	1306.0
2024-08-17	1322.0	1315.0	1311.0
2024-08-18	1343.0	1342.0	1332.0
2024-08-19	1238.0	1234.0	1231.0
2024-08-20	1356.0	1349.0	1347.0
2024-08-21	1340.0	1340.0	1331.0
2024-08-22	1268.0	1301.0	1257.0
2024-08-23	1386.0	1384.0	1379.0
2024-08-24	1247.0	1253.0	1240.0
2024-08-25	1456.0	1455.0	1447.0
2024-08-26	1401.0	1424.0	1392.0
2024-08-27	1204.0	1199.0	1194.0
2024-08-28	1344.0	1344.0	1336.0
2024-08-29	1208.0	1236.0	1202.0
2024-08-30	1318.0	1332.0	1309.0
2024-08-31	1187.0	1182.0	1181.0

5.2 Missing products

The overall total number of Sentinel-2 Level-2A products is 6518529. The number of overall Sentinel-2 Level-2A missing products consists of 3401204 images. This represents that a 500% of the total was included in MET Norway DHR, while a -400% was not included.

The total number of Sentinel-2 level-2A products in August is 1445000. The number of Sentinel-2 level-2A missing products during August consists of 1304238 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.
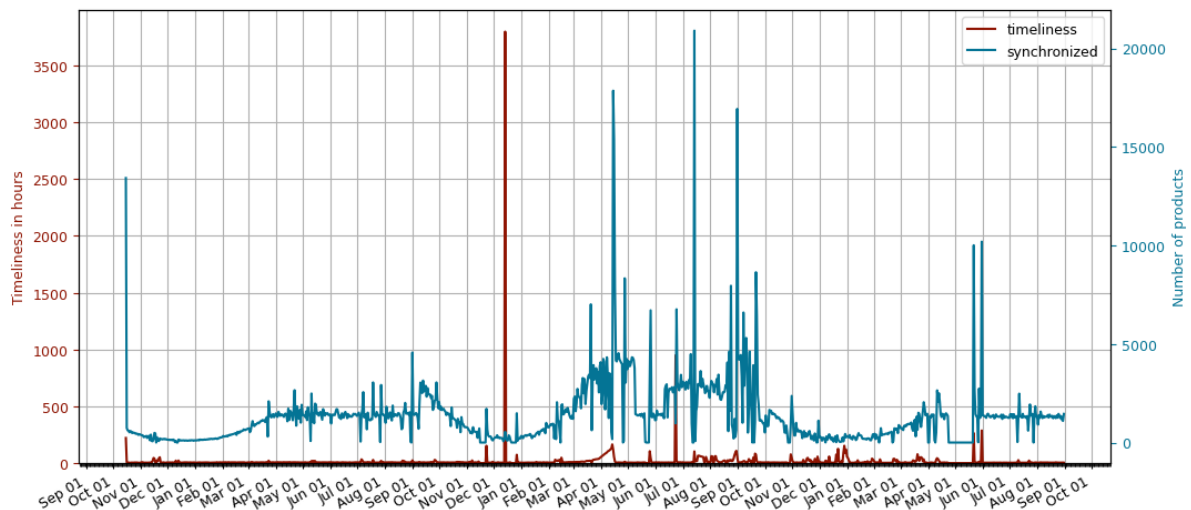
The figure above shows an overall status of the Sentinel-2 Level-2A synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last month for the synchronization between ESA datahub and MET Norway BE.
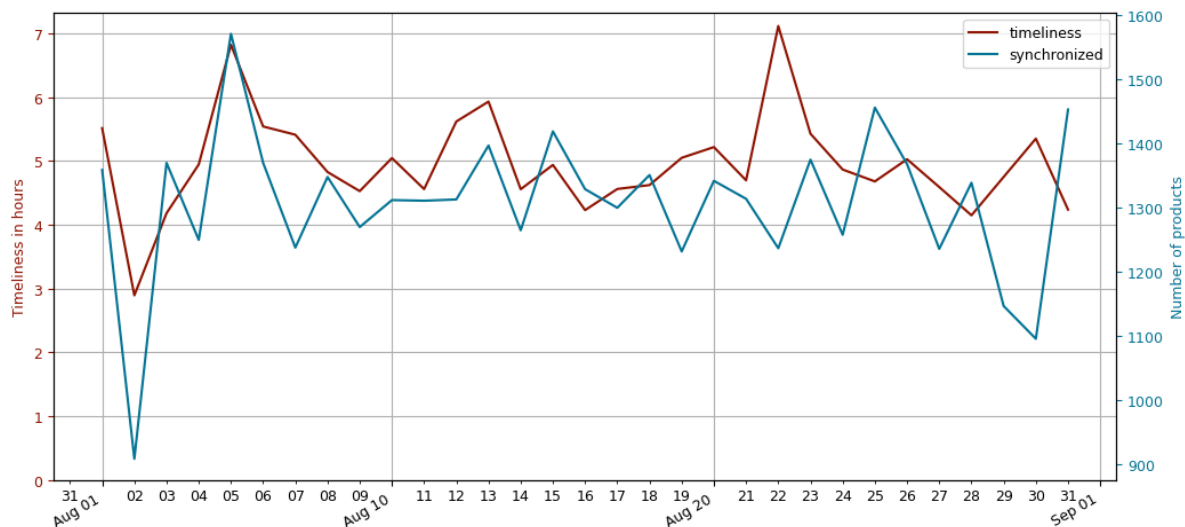
A more detailed information is given in the table below where the last month is assessed for products synchronized from ESA.

```
                   size    number   timeliness
day
2024-08-01   743.153362    1359     5.515359
2024-08-02   518.622186     909     2.895697
2024-08-03   771.705834    1370     4.183631
2024-08-04   720.821357    1250     4.946949
2024-08-05   931.123821    1571     6.823204
2024-08-06   784.393439    1370     5.542413
2024-08-07   684.321522    1238     5.413245
2024-08-08   707.152680    1348     4.828562
2024-08-09   701.364174    1270     4.528965
2024-08-10   721.936186    1312     5.047026
2024-08-11   716.221753    1311     4.560999
2024-08-12   730.665214    1313     5.620380
2024-08-13   778.847761    1397     5.932376
2024-08-14   678.916315    1265     4.558785
2024-08-15   781.445238    1419     4.939862
2024-08-16   710.812966    1329     4.231449
2024-08-17   663.752914    1300     4.562498
2024-08-18   739.145822    1351     4.623741
2024-08-19   704.450728    1232     5.050797
2024-08-20   743.752986    1342     5.219262
2024-08-21   725.315784    1314     4.698496
2024-08-22   680.491461    1237     7.116887
2024-08-23   780.100174    1375     5.428847
2024-08-24   725.358992    1258     4.867309
2024-08-25   830.724056    1456     4.681273
2024-08-26   770.152876    1368     5.028622
2024-08-27   695.816286    1236     4.592469
2024-08-28   753.122467    1339     4.150057
2024-08-29   667.735380    1147     4.751586
2024-08-30   623.204752    1096     5.351502
2024-08-31   787.248133    1453     4.238997
```

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.

Note that scihub is no longer in operation but is included for historical comparisons.

6.1 Products on portals

The following section contains an update on the Sentinel-3 products included in the different FEs and BEs.
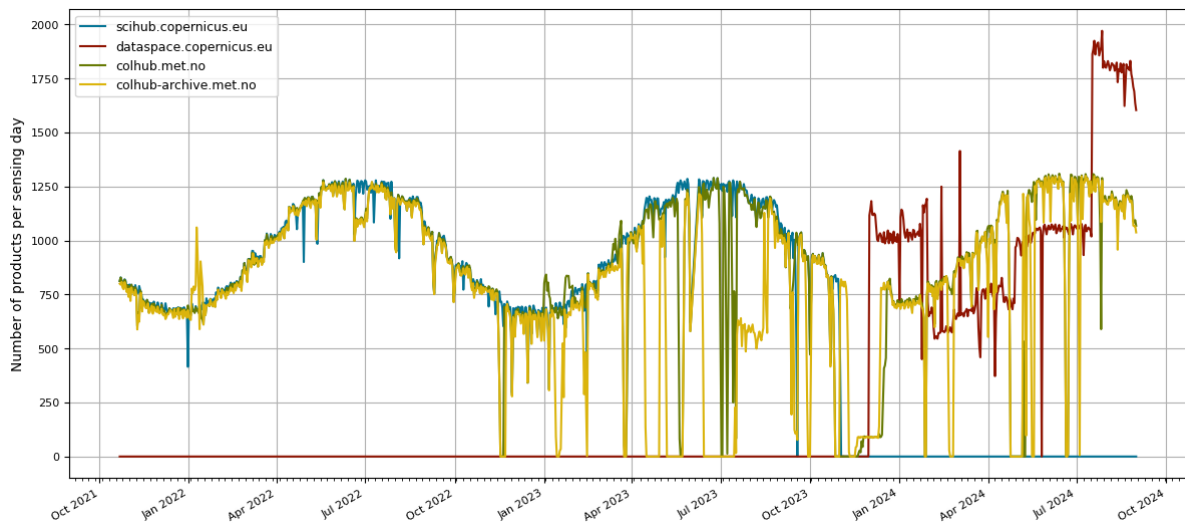
The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-3.

While the figure below shows a zoom on the last month.
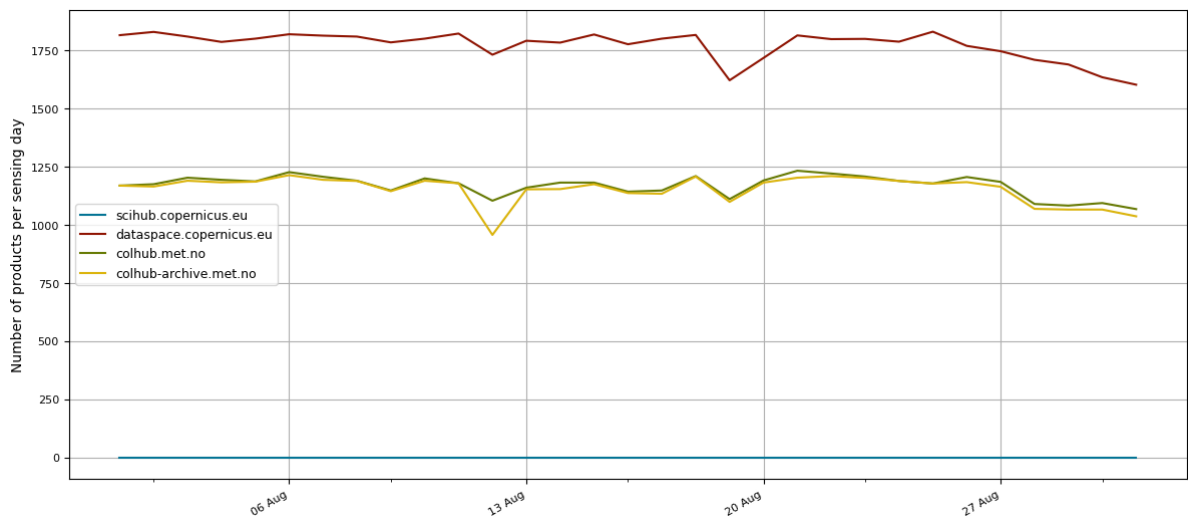
A table is also included for more detailed information.

sensing_date	colhub.met.no	dataspace.copernicus.eu	colhub-archive.met.no
2024-08-01	1169.0	1816.0	1169.0
2024-08-02	1175.0	1830.0	1165.0
2024-08-03	1203.0	1810.0	1190.0
2024-08-04	1194.0	1787.0	1183.0
2024-08-05	1187.0	1801.0	1186.0
2024-08-06	1227.0	1820.0	1214.0
2024-08-07	1207.0	1814.0	1194.0
2024-08-08	1190.0	1810.0	1189.0
2024-08-09	1148.0	1785.0	1145.0
2024-08-10	1200.0	1801.0	1190.0
2024-08-11	1179.0	1823.0	1179.0
2024-08-12	1104.0	1732.0	957.0
2024-08-13	1160.0	1792.0	1153.0
2024-08-14	1182.0	1784.0	1154.0
2024-08-15	1182.0	1819.0	1175.0
2024-08-16	1143.0	1777.0	1137.0
2024-08-17	1148.0	1801.0	1134.0
2024-08-18	1210.0	1817.0	1208.0
2024-08-19	1111.0	1622.0	1099.0
2024-08-20	1191.0	1718.0	1182.0
2024-08-21	1233.0	1815.0	1203.0
2024-08-22	1221.0	1799.0	1210.0
2024-08-23	1208.0	1800.0	1202.0
2024-08-24	1189.0	1788.0	1189.0
2024-08-25	1178.0	1831.0	1178.0
2024-08-26	1206.0	1770.0	1184.0
2024-08-27	1185.0	1747.0	1164.0
2024-08-28	1090.0	1710.0	1069.0
2024-08-29	1083.0	1690.0	1066.0
2024-08-30	1094.0	1635.0	1066.0
2024-08-31	1068.0	1603.0	1037.0

6.2 Missing products

The overall total number of Sentinel-3 products is 6518529. The number of overall Sentinel-3 missing products consists of 3401204 images. This represents that a 500% of the total was included in MET Norway DHR, while a -400% was not included.

The total number of Sentinel-3 products in August is 1445000. The number of Sentinel-3 missing products during August consists of 1304238 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.
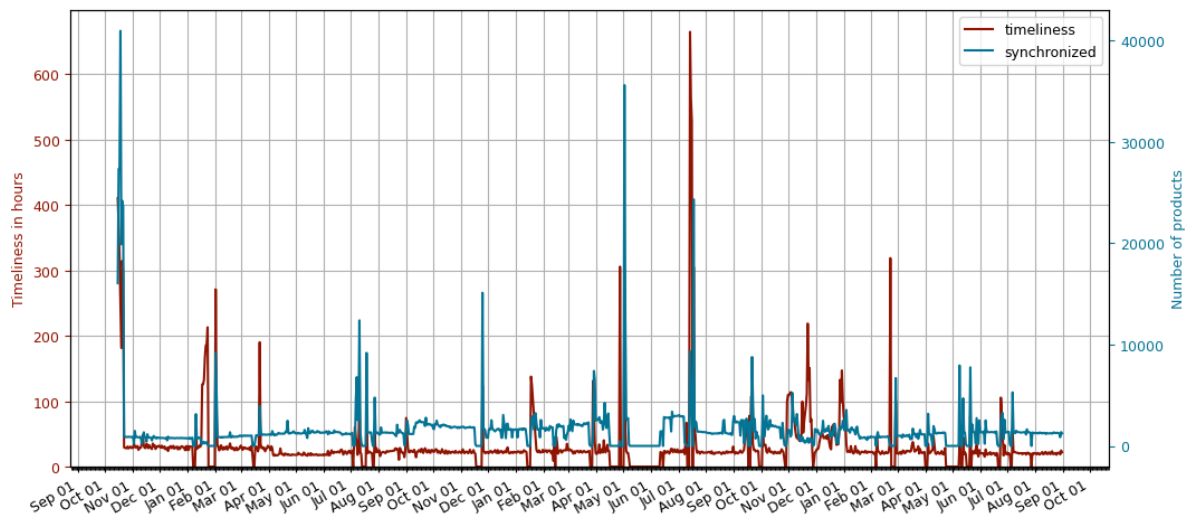
The figure above shows an overall status of the Sentinel-3 synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last month for the synchronization between ESA datahub and MET Norway BE.
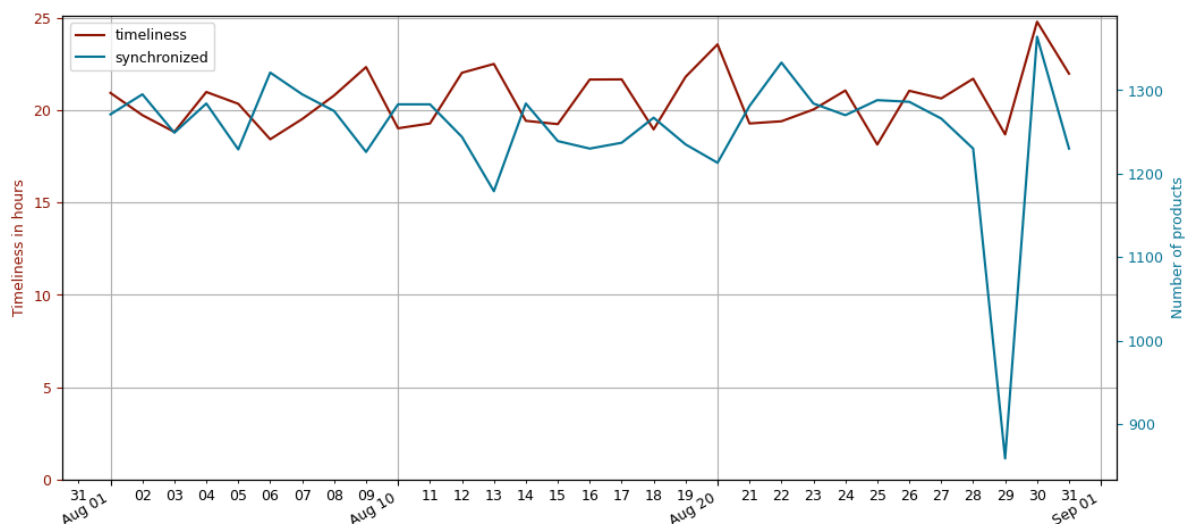
A more detailed information is given in the table below where the last month is assessed for products synchronized from ESA.

```
                    size   number   timeliness
day
2024-08-01   436.698469    1271     20.935201
2024-08-02   443.803463    1295     19.730150
2024-08-03   429.409601    1249     18.823325
2024-08-04   439.649411    1284     20.986606
2024-08-05   428.178757    1229     20.346749
2024-08-06   449.474124    1321     18.425711
2024-08-07   438.178245    1295     19.520414
2024-08-08   431.039739    1275     20.797888
2024-08-09   419.931291    1226     22.335083
2024-08-10   430.391249    1283     19.021073
2024-08-11   430.931745    1283     19.281586
2024-08-12   419.738254    1244     22.026700
2024-08-13   380.821831    1179     22.505034
2024-08-14   429.041247    1284     19.425292
2024-08-15   424.552382    1239     19.245776
2024-08-16   410.000629    1230     21.660576
2024-08-17   417.904029    1237     21.668228
2024-08-18   419.525046    1267     18.961926
2024-08-19   405.090198    1235     21.807665
2024-08-20   408.503374    1213     23.562126
2024-08-21   419.035875    1281     19.281061
2024-08-22   429.284789    1333     19.400717
2024-08-23   420.666980    1284     20.036971
2024-08-24   412.288208    1270     21.066362
2024-08-25   424.159233    1288     18.142210
2024-08-26   416.568525    1286     21.051791
2024-08-27   412.931543    1266     20.636014
2024-08-28   404.787875    1230     21.703804
2024-08-29   289.394768     859     18.688492
2024-08-30   454.411406    1364     24.790699
2024-08-31   404.118644    1230     21.977219
```

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.

Note that scihub is no longer in operation but is included for historical comparisons.

7.1 Products on portals

The following section contains an update on the Sentinel-5p products included in the different FEs and BEs.
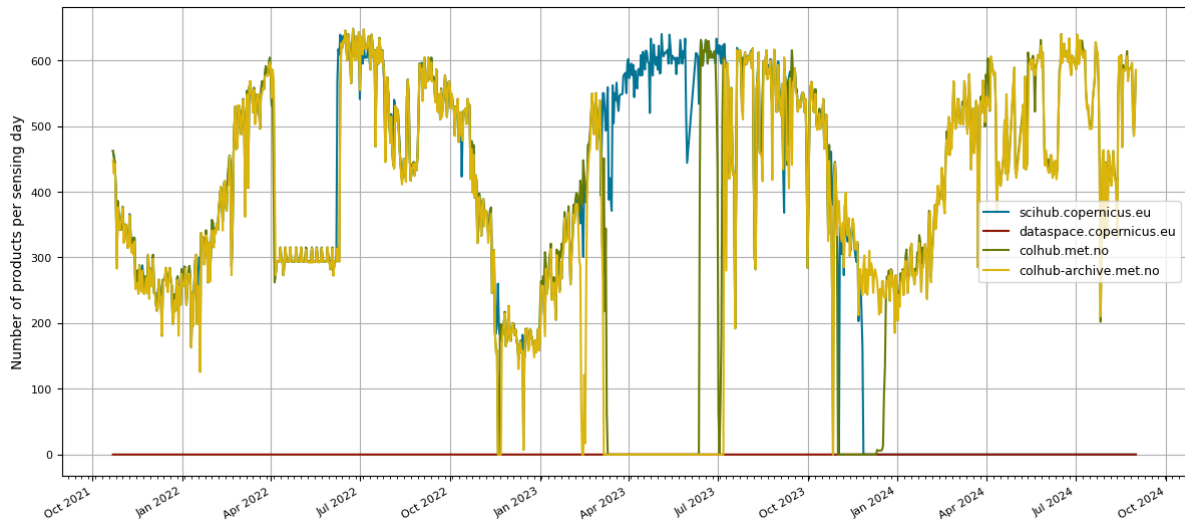
The figure above represents the overall number of products present in the different BackEnds and FrontEnds per day for Sentinel-5p.

While the figure below shows a zoom on the last month.
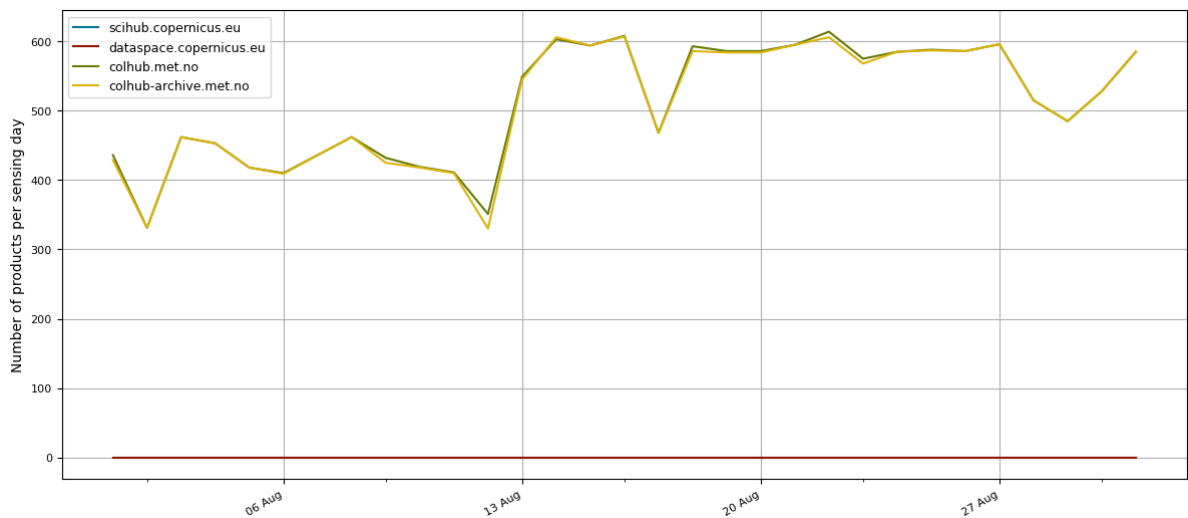
A table is also included for more detailed information.

sensing_date	colhub.met.no	dataspace.copernicus.eu	colhub-archive.met.no
2024-08-01	436.0	0.0	429.0
2024-08-02	331.0	0.0	331.0
2024-08-03	462.0	0.0	462.0
2024-08-04	453.0	0.0	453.0
2024-08-05	418.0	0.0	418.0
2024-08-06	410.0	0.0	409.0
2024-08-07	436.0	0.0	436.0
2024-08-08	462.0	0.0	462.0
2024-08-09	432.0	0.0	425.0
2024-08-10	419.0	0.0	418.0
2024-08-11	411.0	0.0	410.0
2024-08-12	351.0	0.0	330.0
2024-08-13	549.0	0.0	545.0
2024-08-14	603.0	0.0	606.0
2024-08-15	594.0	0.0	594.0
2024-08-16	608.0	0.0	607.0
2024-08-17	468.0	0.0	468.0
2024-08-18	593.0	0.0	586.0
2024-08-19	586.0	0.0	584.0
2024-08-20	586.0	0.0	584.0
2024-08-21	595.0	0.0	595.0
2024-08-22	614.0	0.0	606.0
2024-08-23	575.0	0.0	568.0
2024-08-24	585.0	0.0	585.0
2024-08-25	588.0	0.0	587.0
2024-08-26	586.0	0.0	586.0
2024-08-27	596.0	0.0	596.0
2024-08-28	515.0	0.0	515.0
2024-08-29	485.0	0.0	485.0
2024-08-30	528.0	0.0	528.0
2024-08-31	585.0	0.0	585.0

7.2 Missing products

The overall total number of Sentinel-5p products is 6518529. The number of overall Sentinel-5p missing products consists of 3401204 images. This represents that a 500% of the total was included in MET Norway DHR, while a -400% was not included.

The total number of Sentinel-5p products in August is 1445000. The number of Sentinel-5p missing products during August consists of 1304238 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.
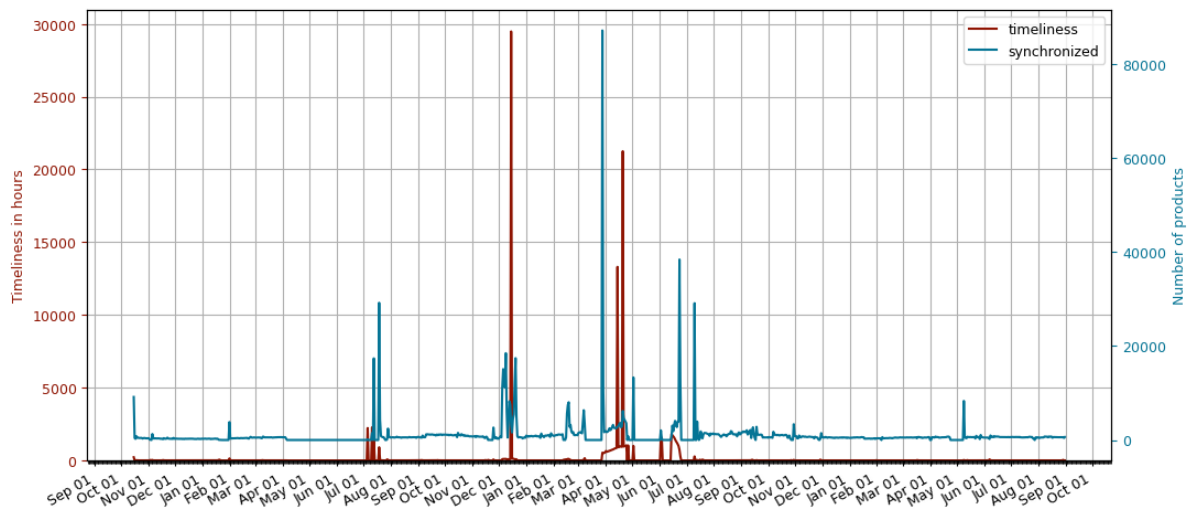
The figure above shows an overall status of the Sentinel-5p synchronization between ESA datahub and MET Norway BE. The number of products synchronized and deleted are represented by the dark and light blue lines respectively. The red line represents the timeliness.

Following previous sections, the graph below shows a zoom in the last month for the synchronization between ESA datahub and MET Norway BE.
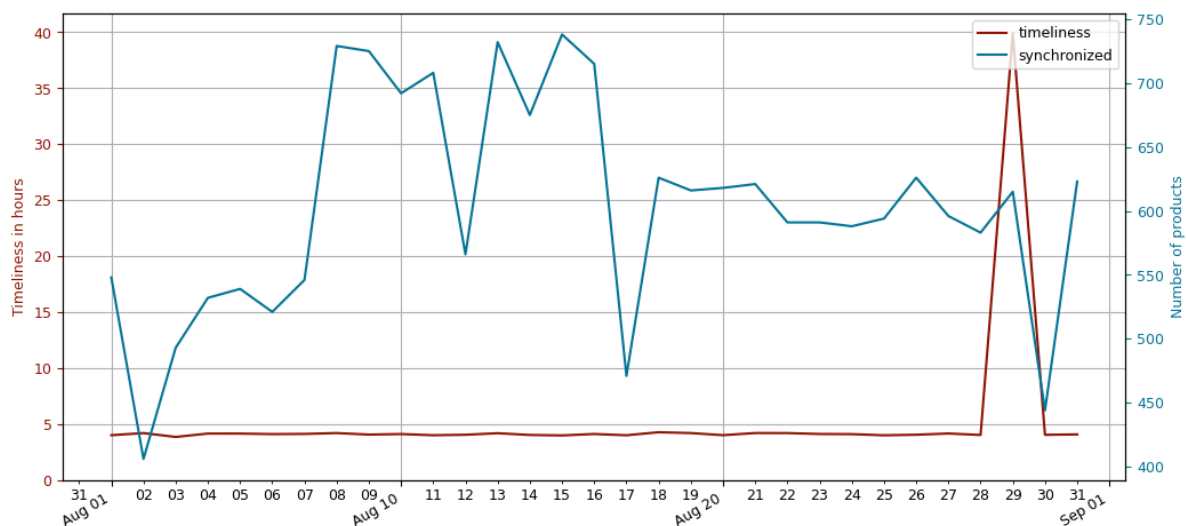
A more detailed information is given in the table below where the last month are assessed for products synchronized from ESA.

```
                size    number   timeliness
day
2024-08-01   407.368098    548     4.014447
2024-08-02   251.380297    406     4.202083
2024-08-03   349.628887    493     3.858835
2024-08-04   353.894077    532     4.159518
2024-08-05   391.273346    539     4.158044
2024-08-06   360.358922    521     4.112125
2024-08-07   382.261302    546     4.128800
2024-08-08   457.832247    729     4.205884
2024-08-09   419.218554    725     4.068688
2024-08-10   411.866350    692     4.117178
2024-08-11   419.816815    708     4.011696
2024-08-12   296.884837    566     4.053727
2024-08-13   443.130873    732     4.191614
2024-08-14   412.544576    675     4.035100
2024-08-15   411.721027    738     3.994448
2024-08-16   434.164531    715     4.122241
2024-08-17   274.262835    471     4.008488
2024-08-18   448.319320    626     4.281014
2024-08-19   448.964794    616     4.205267
2024-08-20   382.457147    618     4.016927
2024-08-21   384.956187    621     4.208194
2024-08-22   405.837712    591     4.203107
2024-08-23   382.321127    591     4.122843
2024-08-24   384.218854    588     4.108632
2024-08-25   379.686361    594     4.006080
2024-08-26   382.444965    626     4.055897
2024-08-27   378.403221    596     4.166489
2024-08-28   377.786701    583     4.034120
2024-08-29   590.448960    615    39.895112
2024-08-30   284.688456    444     4.049751
2024-08-31   379.311787    623     4.084647
```

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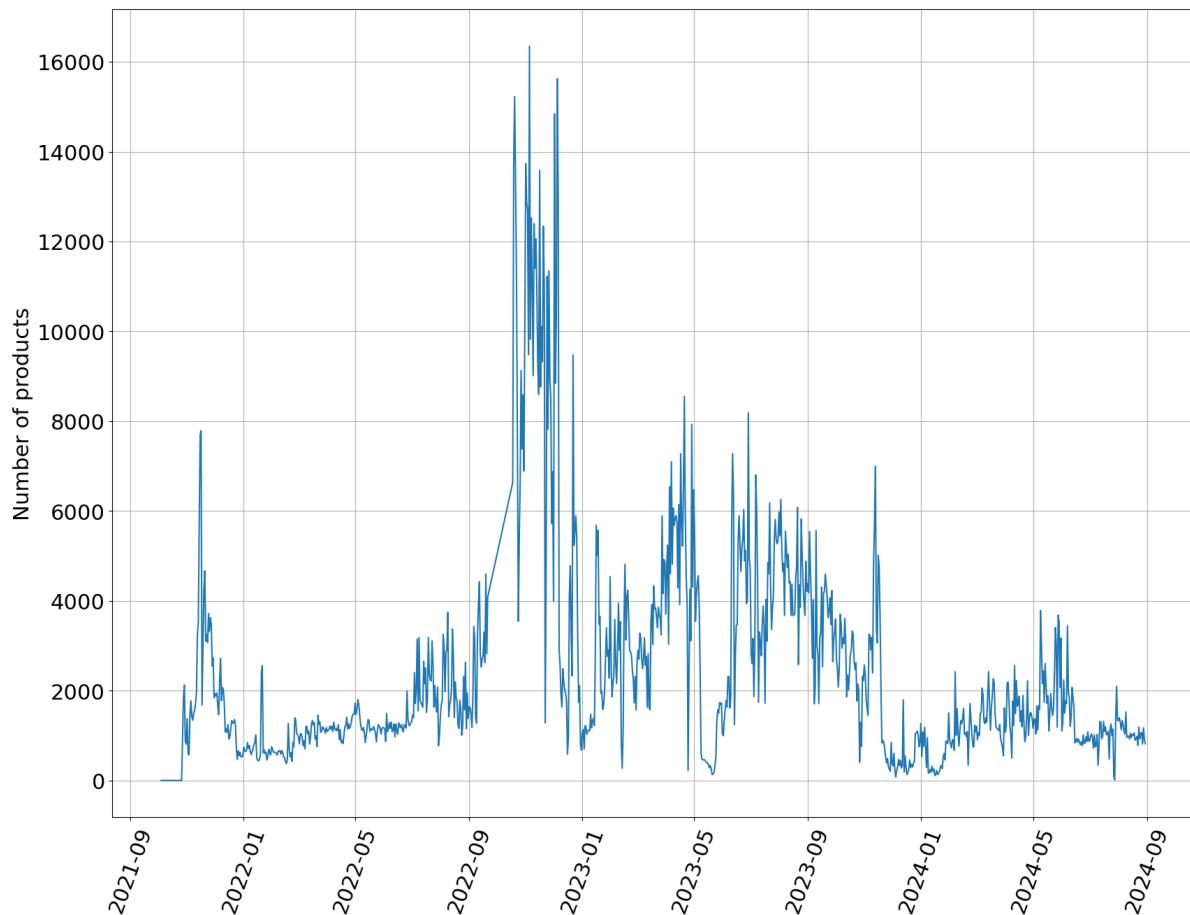
The same data is also represented below, with a difference. This time the data is not accounted by number, but by volume. Although both graphs show similar trends, they are not exactly equal due to the variability in the ratio volume per product.

For instance, the seasonality of optical products could have an impact in the total volume of products.
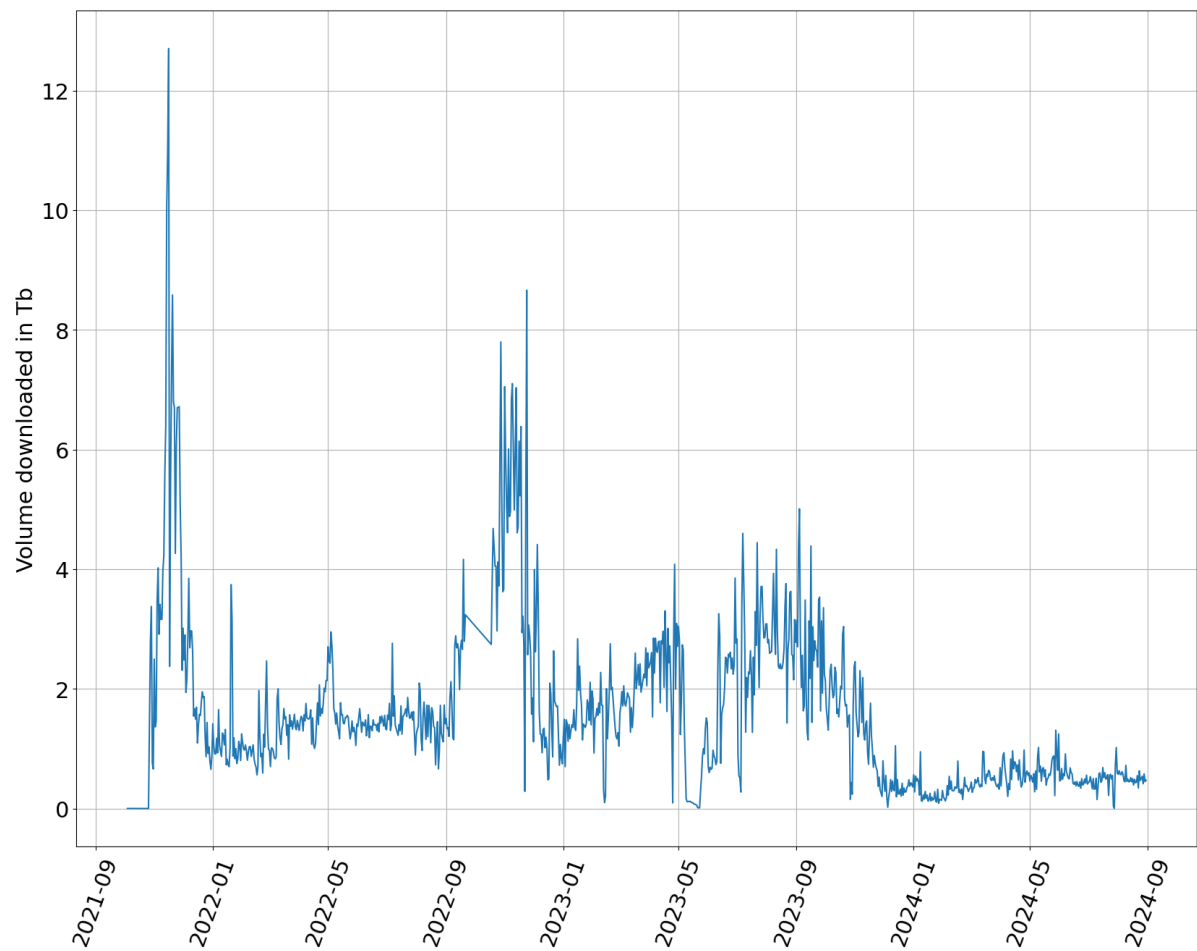
The table below is also interesting. It shows the amount of products downloaded for each the different Sentinel products. As expected, S1 and S2 are the most used Sentinels. S3 is slightly used, while S5p is not used.

```
satellite   product_type
S1          GRDH                  247437
            GRDM                  116220
            OCN                   103579
            RAW                   196353
            SLC                    62838
S2          MSIL1C                571859
            MSIL1C_DTERRENG         3100
            MSIL2A               1140577
S3          OLCI_L1                 9055
            OLCI_L2                  490
            SLSTR_L1               15576
            SLSTR_L2                  12
            SRAL_L1                   23
            SRAL_L2                   85
            SYN_L2                    41
S5          NRTI_L2                10306
            OFFL_L1B                   3
            OFFL_L2                   11
dtype: int64
```

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                 48.169138
               2                 41.604374
               3                 61.866205
               4                 74.137962
               5                 25.676479
               6                 54.858885
               7                 78.211367
               8                 88.075235
               9                 80.195622
               10                54.828457
               11                33.878596
               12                10.909848
2024           1                  8.061366
               2                  9.525797
               3                 15.088652
               4                 18.111391
               5                 19.999434
               6                 15.003660
               7                 14.552019
               8                 15.172892
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.
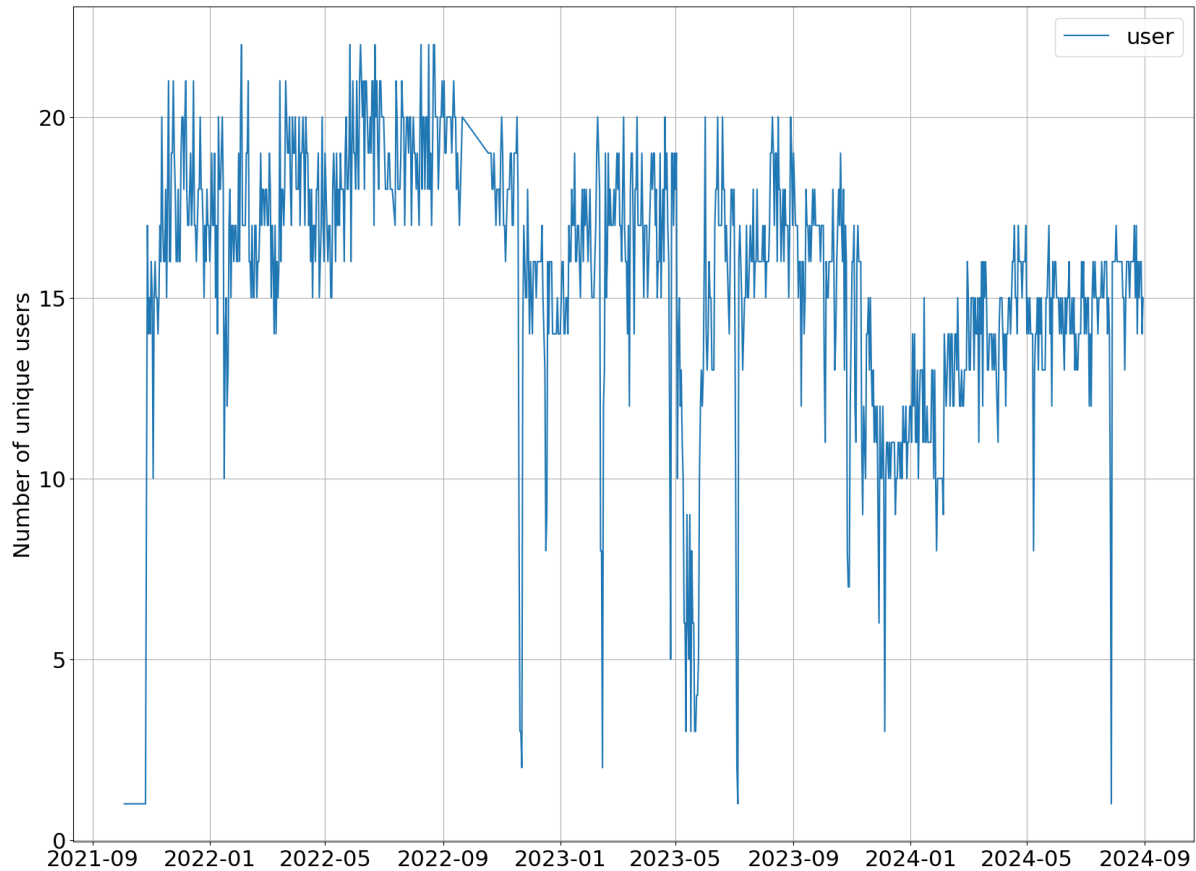
8.2 Portal: colhub-archive.met.no

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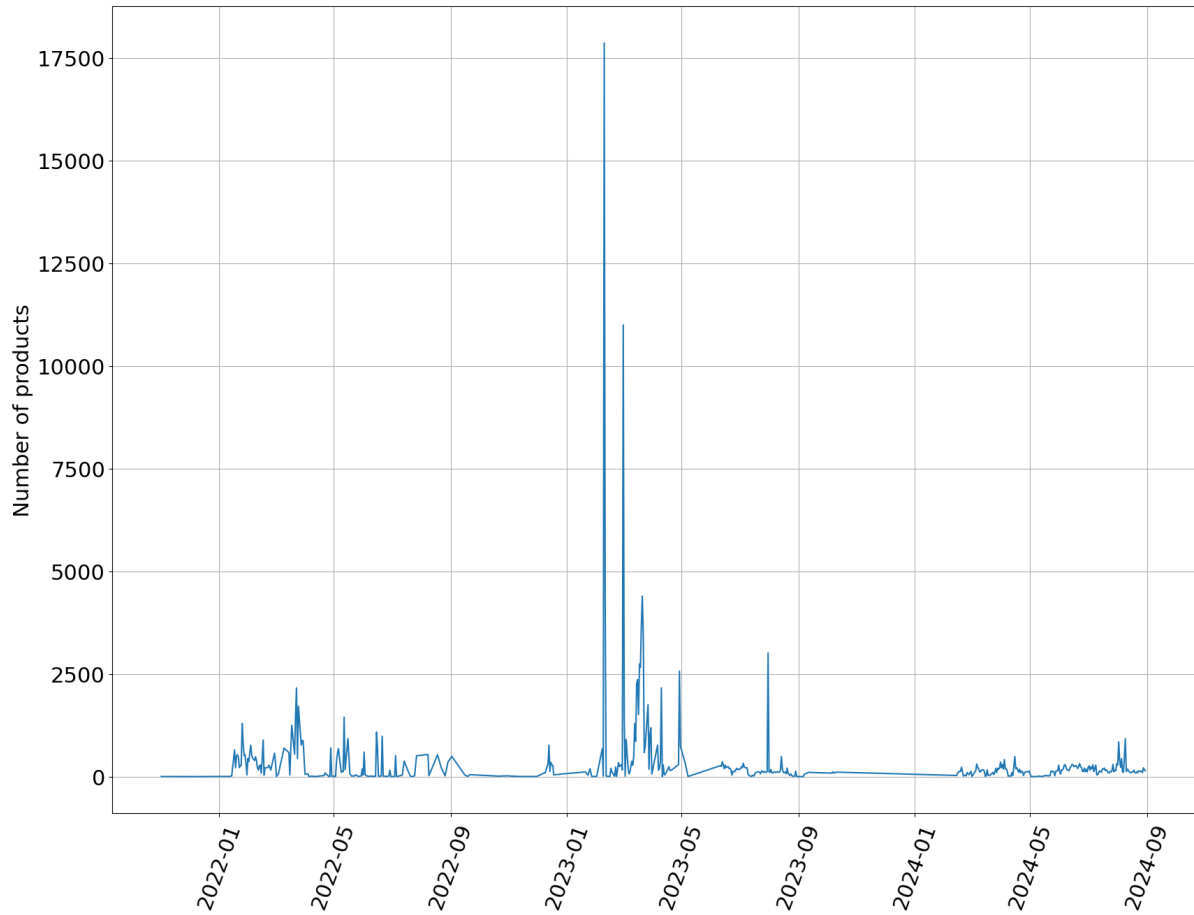
As explained and shown in the previous section, the total volume downloaded is also shown in the graphic below.

```
Index(['size', 'download_duration'], dtype='object')
```
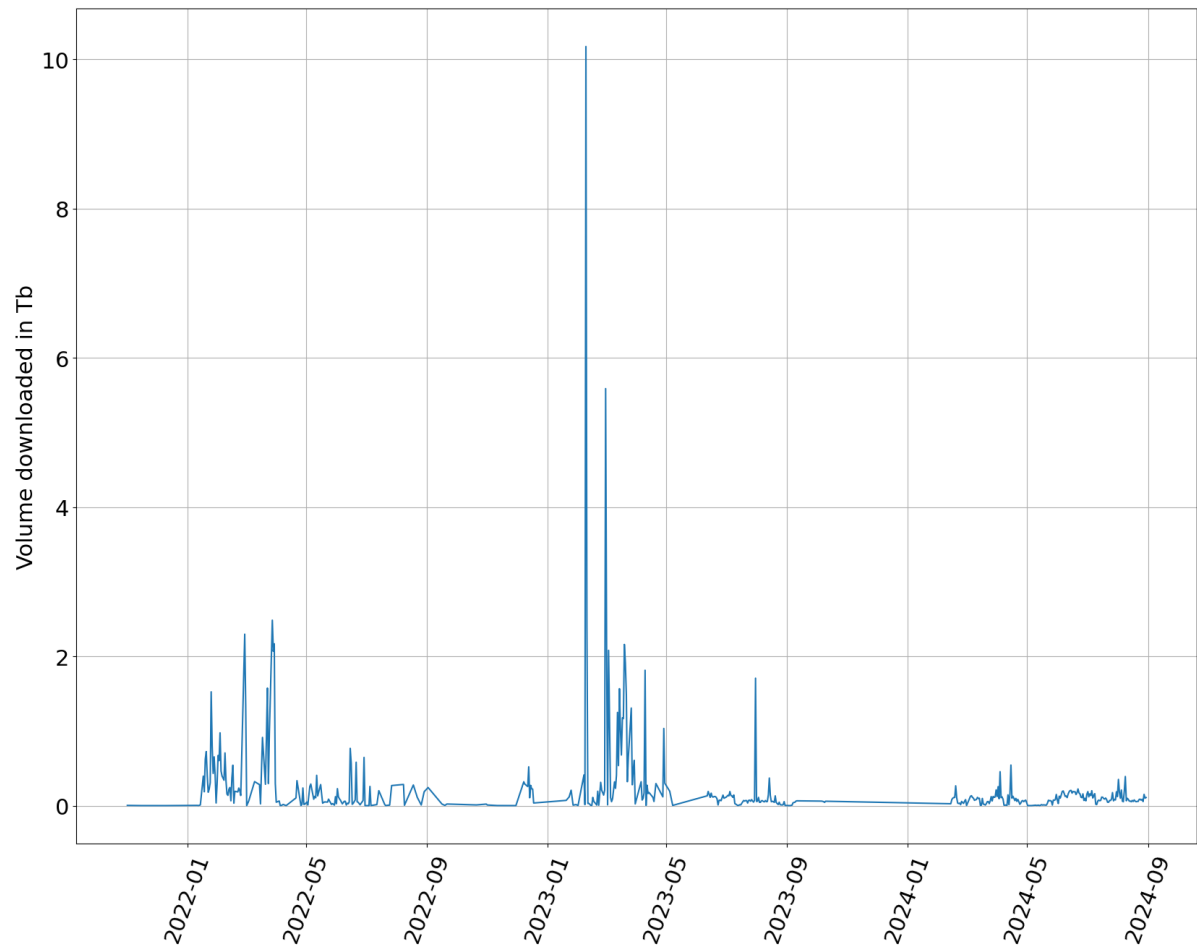
It is still interesting to see the number of products downloaded per product type. As shown in the previous section, S1 and S2 still are the most popular Sentinels.

```
satellite   product_type
S1          GRDH                 32308
            GRDM                 10209
            OCN                      1
            RAW                    875
            SLC                   3221
S2          MSIL1C               34642
            MSIL1C_DTERRENG      16832
            MSIL2A               63480
S3          OLCI_L1                  4
            OLCI_L2                  1
            SLSTR_L1              4022
            SRAL_L1                  6
            SRAL_L2                160
S5          OFFL_L2                  2
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
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
              September        0.220003
2024          April            3.181320
              August           3.264419
              February         1.177107
              July             3.158623
              June             4.358417
              March            2.230899
              May              0.761791
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.
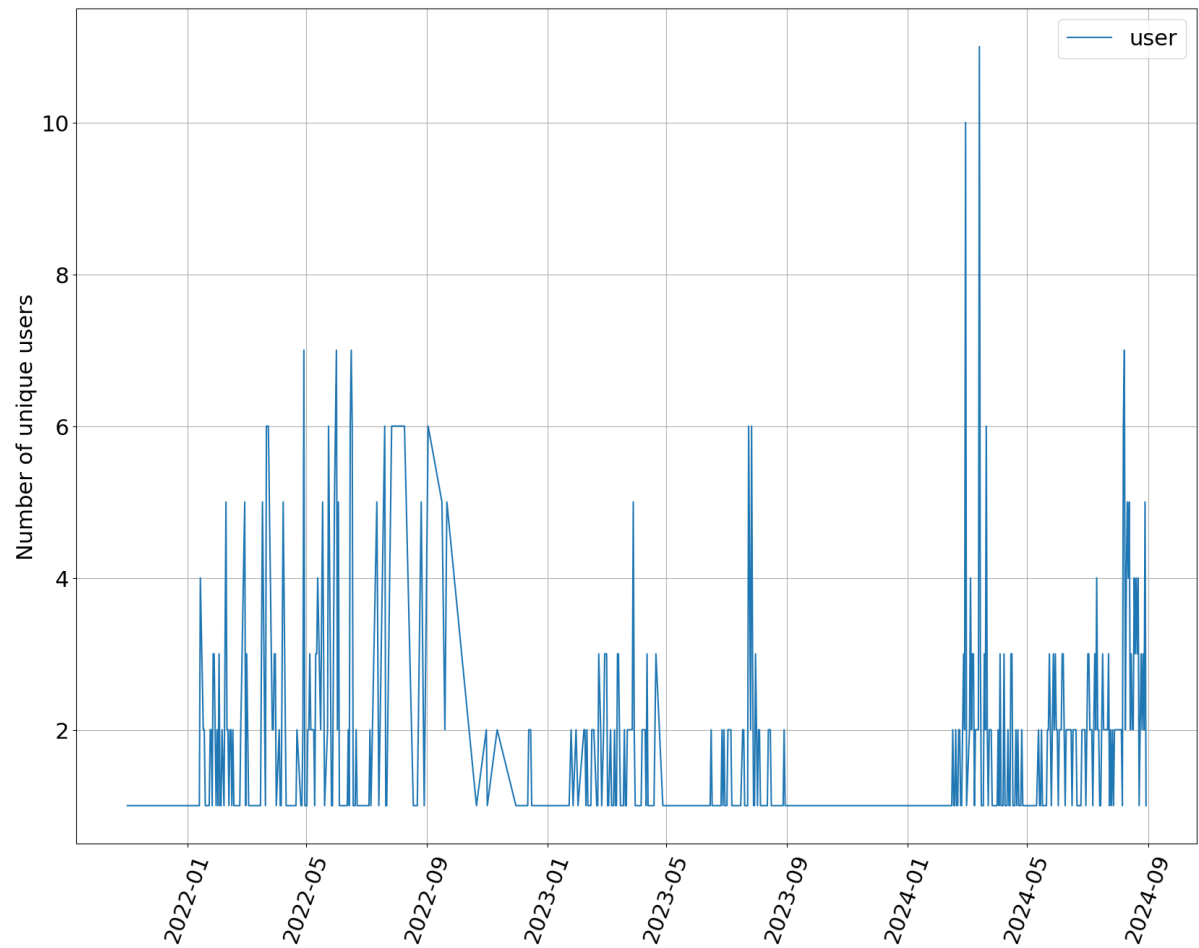
DATA VOLUMES FOR NBS

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-CF. 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 4939 TB
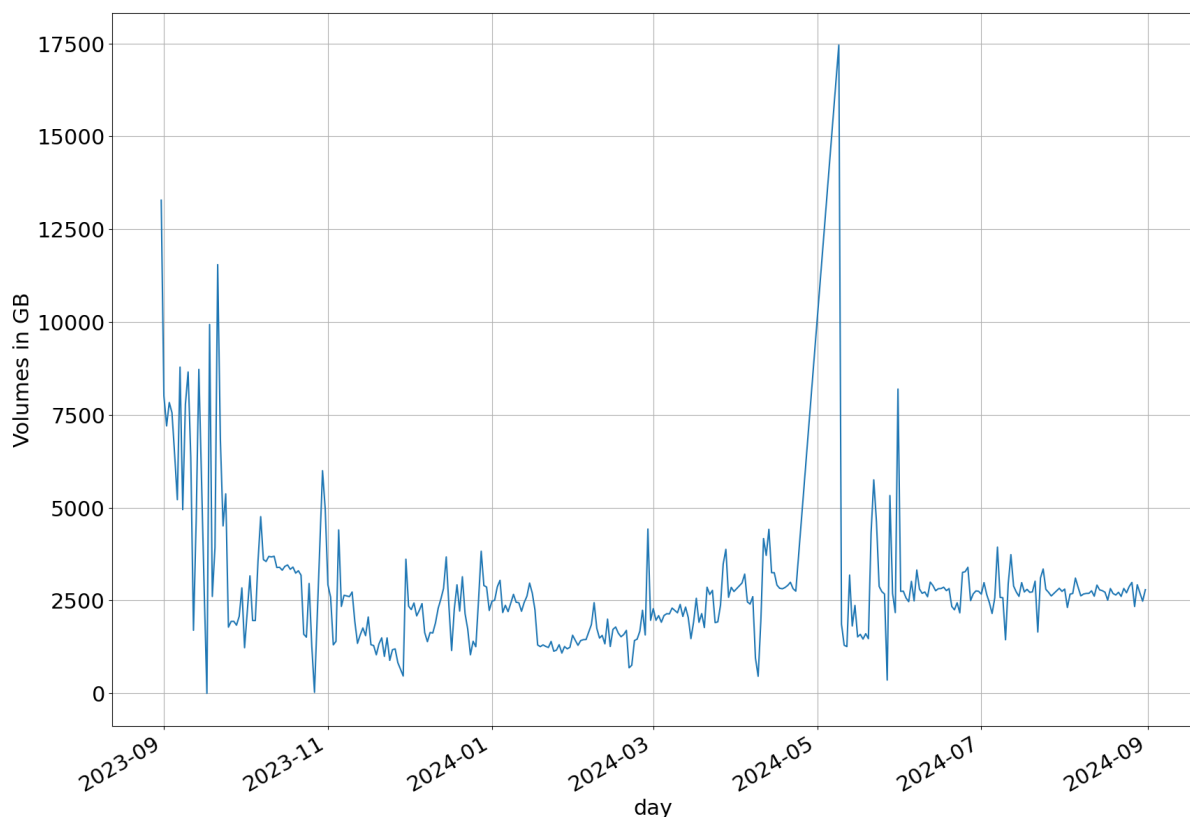
In the graphic above the volume of data per day in GB is shown for the last year. Here we can observed seasonality due to optical sensor products. The table below shows the same information for the last month.
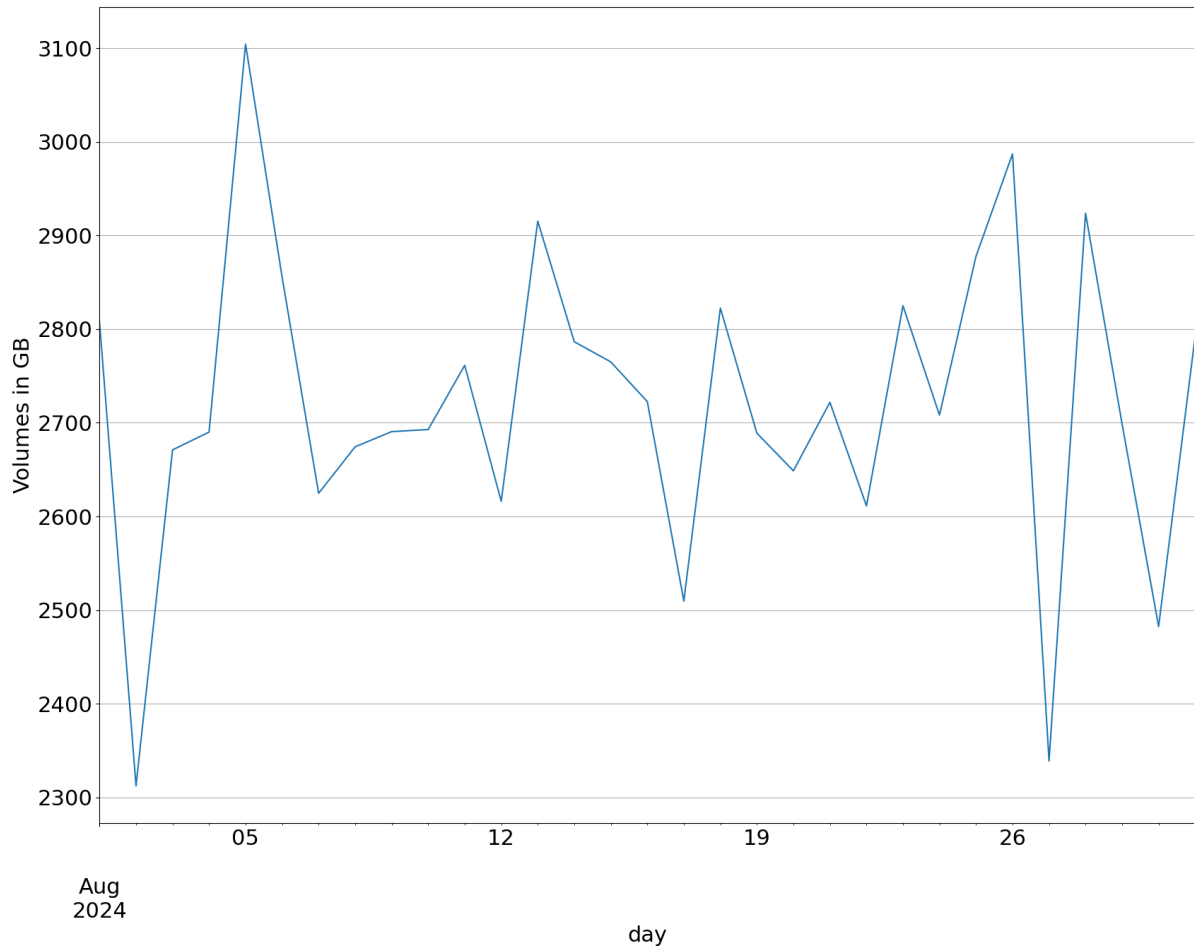
9.2 Volume for netcdf products

The products converted to NetCDF-CF 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-CF.

The total amount of Sentinel-1 and Sentinel-2 products for the AOI transformed to NetCDF represents 915 TB
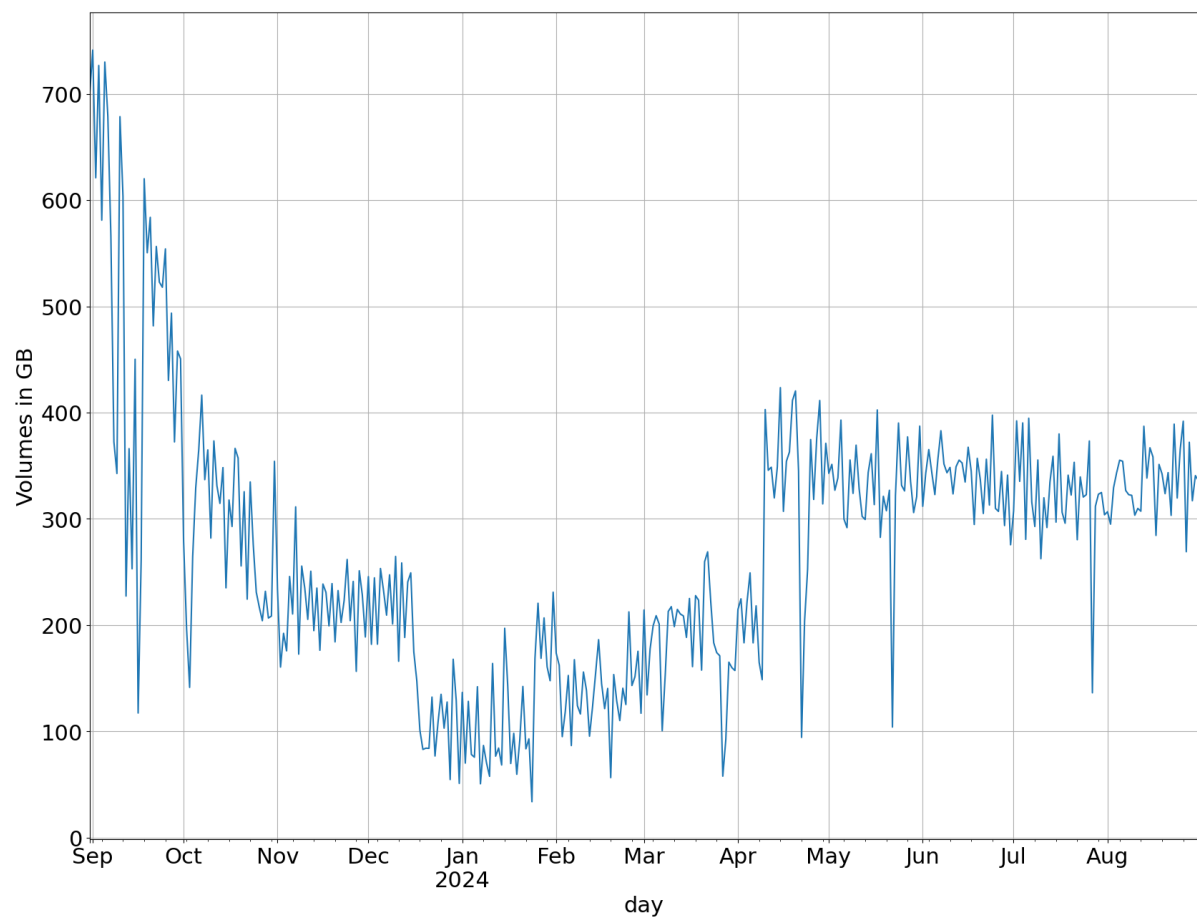
In the graphic above the volume of NetCDF-CF data per day in GB is shown for the last year. Here we can observed seasonality due to optical sensor products. The table below shows the same information for the last 30 days.
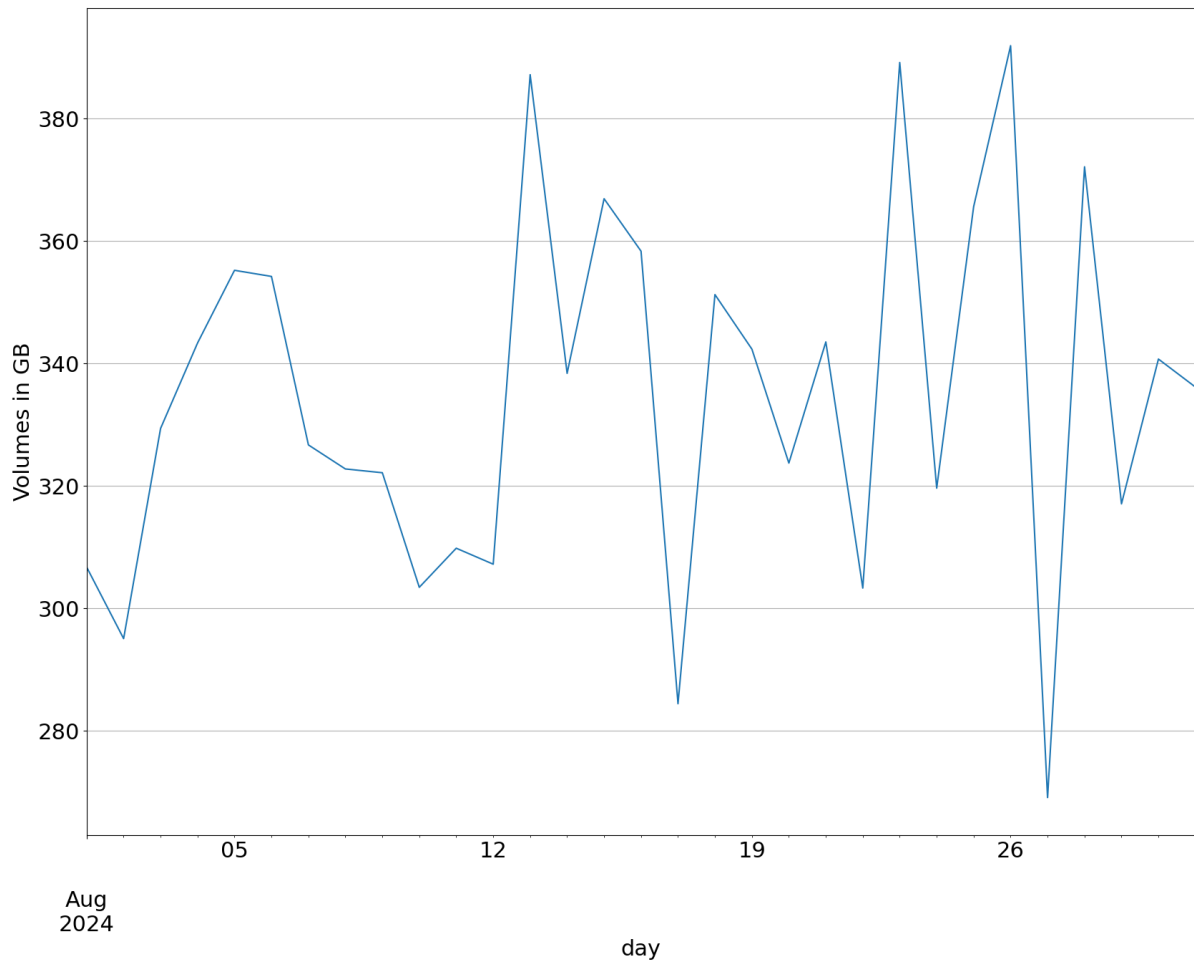
9.3 Totals

Finally, the total amount of disk space dedicated to the NBS project, including either products in SAFE and NetCDF formats, represents 5854 TB
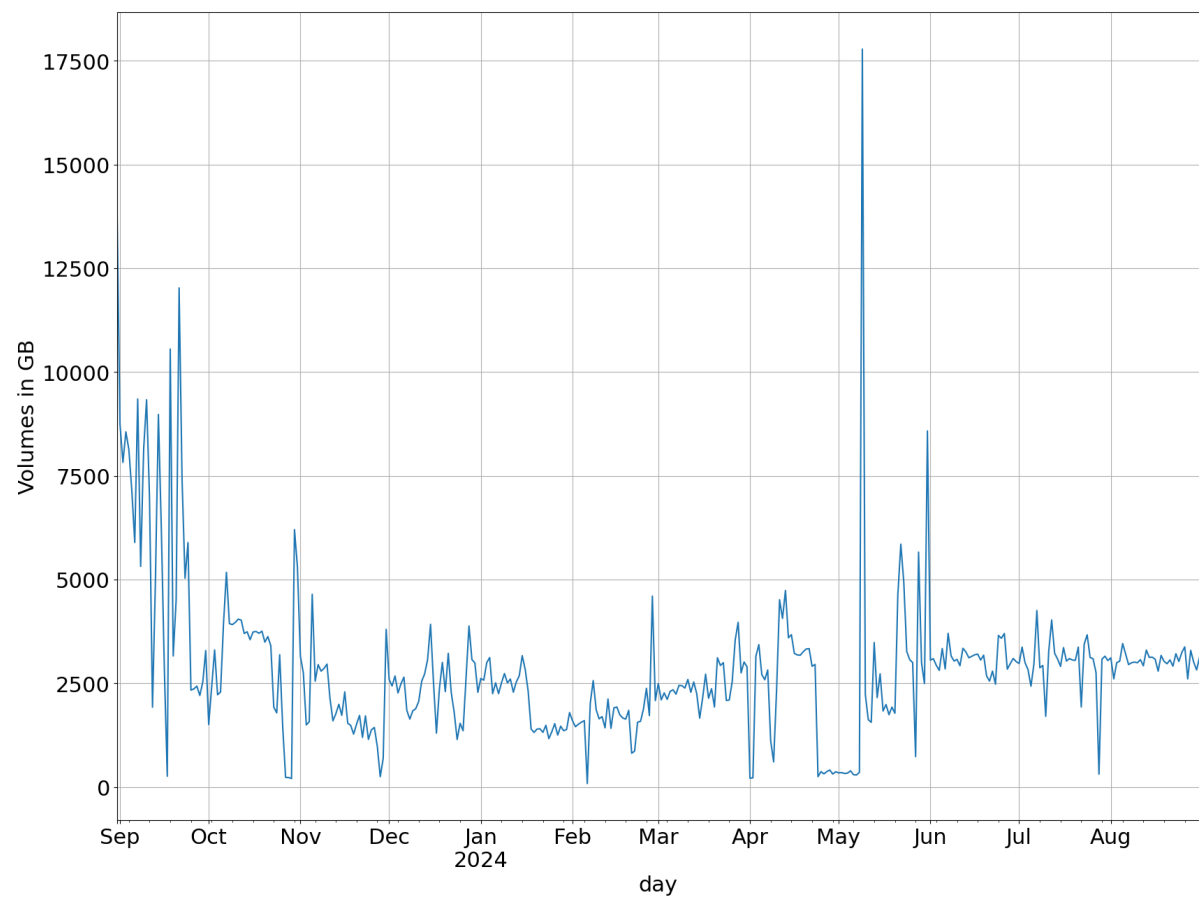
In the graphic above the total volume of data per day in GB is shown for the last year. Here we can observed seasonality due to optical sensor products again. The table below shows the same information for the last month.

```
              product_type         action      volume   number   timeliness
day
2024-08-01            GRDH        fscanner   51.435837     17.0     0.839337
2024-08-01            GRDH    synchronized   85.984097     53.0     1.165634
2024-08-01            GRDM        fscanner    2.724518     25.0     0.714286
2024-08-01            GRDM    synchronized    6.299364     17.0     2.570650
2024-08-01             OCN    synchronized    0.953195     48.0     1.306587
2024-08-01             RAW    synchronized   95.149514     69.0     1.011205
2024-08-01             SLC    synchronized  411.576370     56.0     1.481361
2024-08-02            GRDH        fscanner   73.400182     23.0     0.766872
2024-08-02            GRDH    synchronized   92.382378     56.0     1.198196
2024-08-02            GRDM        fscanner    4.114144     38.0     0.761996
2024-08-02            GRDM    synchronized    3.664227     10.0     1.150559
2024-08-02             OCN    synchronized    0.840472     49.0     1.194507
2024-08-02             RAW    synchronized   94.101193     66.0     0.965211
2024-08-02             SLC    synchronized  435.472583     58.0     1.541868
2024-08-03            GRDH        fscanner   44.390028     18.0     0.598650
2024-08-03            GRDH    synchronized   65.110803     39.0     1.266248
2024-08-03            GRDM        fscanner    6.406342     35.0     0.614413
2024-08-03            GRDM    synchronized    8.623712     22.0     0.748636
2024-08-03             OCN    synchronized    1.192408     54.0     1.052842
2024-08-03             RAW    synchronized   81.573512     61.0     0.866799
2024-08-03             SLC    synchronized  314.423806     41.0     1.607884
```

9.3. Totals

```
2024-08-04          GRDH    fscanner    67.448089    25.0    0.653911
2024-08-04          GRDH  synchronized  78.083448    47.0    1.043226
2024-08-04          GRDM    fscanner     6.389791    41.0    0.616596
2024-08-04          GRDM  synchronized   5.586601    15.0    0.606241
2024-08-04          OCN   synchronized   0.926050    47.0    1.116199
2024-08-04          RAW   synchronized  86.347850    62.0    0.820934
2024-08-04          SLC   synchronized  376.242435   50.0    1.416969
2024-08-05          GRDH    fscanner    68.536542    22.0    0.791596
2024-08-05          GRDH  synchronized  78.418887    47.0    1.070350
2024-08-05          GRDM    fscanner     6.682758    38.0    0.777140
2024-08-05          GRDM  synchronized   7.190345    20.0    0.582051
2024-08-05          OCN   synchronized   1.185899    60.0    1.138019
2024-08-05          RAW   synchronized  90.155433    67.0    0.911528
2024-08-05          SLC   synchronized  376.188769   49.0    1.584896
2024-08-06          GRDH    fscanner    61.614048    22.0    0.684003
2024-08-06          GRDH  synchronized  85.317647    51.0    1.152466
2024-08-06          GRDM    fscanner     5.574440    40.0    0.634982
2024-08-06          GRDM  synchronized   6.371147    18.0    1.077660
2024-08-06          OCN   synchronized   1.004128    50.0    1.181915
2024-08-06          RAW   synchronized  95.577678    69.0    1.007631
2024-08-06          SLC   synchronized  407.757221   54.0    1.467549
2024-08-07          GRDH    fscanner    69.084670    21.0    0.745112
2024-08-07          GRDH  synchronized  73.495101    45.0    1.055918
2024-08-07          GRDM    fscanner     6.387732    38.0    0.656689
2024-08-07          GRDM  synchronized   5.093559    13.0    0.596527
2024-08-07          OCN   synchronized   0.846009    44.0    1.022555
2024-08-07          RAW   synchronized  80.513564    58.0    0.839339
2024-08-07          SLC   synchronized  359.421515   48.0    1.357381
2024-08-08          GRDH    fscanner    40.086313    15.0    0.563253
2024-08-08          GRDH  synchronized  65.421438    39.0    0.991942
2024-08-08          GRDM    fscanner     6.371555    35.0    0.613473
2024-08-08          GRDM  synchronized   8.963984    24.0    0.682470
2024-08-08          OCN   synchronized   1.169627    53.0    1.058940
2024-08-08          RAW   synchronized  82.867806    63.0    0.820699
2024-08-08          SLC   synchronized  327.438936   43.0    1.406756
2024-08-09          GRDH    fscanner    69.372290    22.0    1.521467
2024-08-09          GRDH  synchronized  78.327736    48.0    1.034636
2024-08-09          GRDM    fscanner     3.594138    33.0    4.416403
2024-08-09          GRDM  synchronized   5.303171    14.0    0.883176
2024-08-09          OCN   synchronized   0.889794    47.0    1.090054
2024-08-09          RAW   synchronized  86.489845    62.0    0.826810
2024-08-09          SLC   synchronized  377.715517   51.0    1.411749
2024-08-10          GRDH    fscanner    42.806085    17.0    0.724379
2024-08-10          GRDH  synchronized  73.830067    45.0    1.088901
2024-08-10          GRDM  synchronized   7.290045    18.0    1.126413
2024-08-10          OCN   synchronized   1.126221    55.0    1.203948
2024-08-10          RAW   synchronized  86.740511    63.0    0.877196
2024-08-10          SLC   synchronized  352.570249   47.0    1.439226
2024-08-11          GRDH    fscanner    55.057153    20.0    0.606151
2024-08-11          GRDH  synchronized  82.864160    50.0    0.965015
2024-08-11          GRDM  synchronized   6.851423    18.0    0.975805
2024-08-11          OCN   synchronized   1.057588    51.0    1.064845
2024-08-11          RAW   synchronized  95.182892    69.0    0.821520
2024-08-11          SLC   synchronized  398.092350   53.0    1.412811
2024-08-12          GRDH    fscanner    64.164162    20.0    0.927449
2024-08-12          GRDH  synchronized  82.891855    50.0    1.058720
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2024-08-12       GRDM       fscanner     1.303812    12.0    0.917487
2024-08-12       GRDM   synchronized     5.109750    13.0    2.242035
2024-08-12        OCN   synchronized     0.940172    49.0    1.256743
2024-08-12        RAW   synchronized    85.595141    61.0    0.932624
2024-08-12        SLC   synchronized   346.860460    46.0    1.439072
2024-08-13       GRDH       fscanner    47.334295    16.0    0.952989
2024-08-13       GRDH   synchronized    86.205303    53.0    1.224480
2024-08-13       GRDM       fscanner     2.725552    25.0    0.714951
2024-08-13       GRDM   synchronized     5.760769    15.0    2.348641
2024-08-13        OCN   synchronized     0.945118    47.0    1.331754
2024-08-13        RAW   synchronized   101.339087    73.0    1.013795
2024-08-13        SLC   synchronized   448.166970    60.0    1.532885
2024-08-14       GRDH       fscanner    71.387626    22.0    0.743155
2024-08-14       GRDH   synchronized    92.740116    56.0    1.082833
2024-08-14       GRDM       fscanner     4.126043    38.0    0.776613
2024-08-14       GRDM   synchronized     4.283473    11.0    2.250242
2024-08-14        OCN   synchronized     0.899339    50.0    1.173010
2024-08-14        RAW   synchronized    95.716727    67.0    0.934536
2024-08-14        SLC   synchronized   451.066025    60.0    1.464055
2024-08-15       GRDH       fscanner    37.660968    14.0    0.606110
2024-08-15       GRDH   synchronized    65.108823    39.0    1.132782
2024-08-15       GRDM       fscanner     6.611679    34.0    0.604451
2024-08-15       GRDM   synchronized     9.449389    24.0    0.713893
2024-08-15        OCN   synchronized     1.267949    56.0    1.206747
2024-08-15        RAW   synchronized    83.740816    63.0    0.855955
2024-08-15        SLC   synchronized   314.424088    41.0    1.603737
2024-08-16       GRDH       fscanner    64.143821    24.0    0.637490
2024-08-16       GRDH   synchronized    78.080856    47.0    1.031561
2024-08-16       GRDM       fscanner     5.955508    40.0    0.703584
2024-08-16       GRDM   synchronized     5.586445    15.0    0.572832
2024-08-16        OCN   synchronized     0.926244    47.0    1.173416
2024-08-16        RAW   synchronized    86.127175    62.0    0.842941
2024-08-16        SLC   synchronized   376.240576    50.0    1.529078
2024-08-17       GRDH       fscanner    63.192148    21.0    0.798062
2024-08-17       GRDH   synchronized    78.234232    47.0    1.117197
2024-08-17       GRDM       fscanner     6.668130    38.0    0.763709
2024-08-17       GRDM   synchronized     5.563809    16.0    0.567082
2024-08-17        OCN   synchronized     1.040835    56.0    1.136057
2024-08-17        RAW   synchronized    85.463786    63.0    0.897146
2024-08-17        SLC   synchronized   375.323434    49.0    1.647794
2024-08-18       GRDH       fscanner    55.559570    19.0    0.676289
2024-08-18       GRDH   synchronized    85.474211    51.0    1.220703
2024-08-18       GRDM       fscanner     5.179303    39.0    0.588161
2024-08-18       GRDM   synchronized     5.151643    15.0    0.666503
2024-08-18        OCN   synchronized     0.896873    47.0    1.124831
2024-08-18        RAW   synchronized    91.896374    66.0    0.885763
2024-08-18        SLC   synchronized   408.380369    54.0    1.444885
2024-08-19       GRDH       fscanner    54.672781    17.0    0.787371
2024-08-19       GRDH   synchronized    73.493375    45.0    1.050276
2024-08-19       GRDM       fscanner     6.060311    35.0    0.675018
2024-08-19       GRDM   synchronized     5.093159    13.0    0.596618
2024-08-19        OCN   synchronized     0.846666    44.0    1.073560
2024-08-19        RAW   synchronized    80.478582    58.0    0.833604
2024-08-19        SLC   synchronized   359.419283    48.0    1.332720
2024-08-20       GRDH       fscanner    41.411497    14.0    0.802056
2024-08-20       GRDH   synchronized    65.412023    39.0    1.111403
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2024-08-20      GRDM     fscanner     5.834118   30.0     0.596277
2024-08-20      GRDM  synchronized     9.789069   26.0     0.712372
2024-08-20       OCN  synchronized     1.243079   55.0     0.946733
2024-08-20       RAW  synchronized    84.945112   65.0     0.794417
2024-08-20       SLC  synchronized   327.379605   43.0     1.400910
2024-08-21      GRDH     fscanner    64.885029   21.0     1.029133
2024-08-21      GRDH  synchronized    78.151912   48.0     1.023512
2024-08-21      GRDM     fscanner     3.698188   34.0     0.820647
2024-08-21      GRDM  synchronized     5.303108   14.0     0.887847
2024-08-21       OCN  synchronized     0.888318   47.0     1.075400
2024-08-21       RAW  synchronized    86.227575   62.0     0.814873
2024-08-21       SLC  synchronized   376.914519   51.0     1.344426
2024-08-22      GRDH     fscanner    41.568099   16.0     0.694331
2024-08-22      GRDH  synchronized    73.690541   45.0     1.114604
2024-08-22      GRDM     fscanner     4.103345   29.0     0.662946
2024-08-22      GRDM  synchronized     7.290735   18.0     1.176559
2024-08-22       OCN  synchronized     1.127255   55.0     1.209604
2024-08-22       RAW  synchronized    86.453787   63.0     0.922965
2024-08-22       SLC  synchronized   352.071298   47.0     1.402618
2024-08-23      GRDH     fscanner    60.654135   21.0     0.612744
2024-08-23      GRDH  synchronized    82.866616   50.0     0.996883
2024-08-23      GRDM     fscanner     6.873375   46.0     0.670967
2024-08-23      GRDM  synchronized     6.851705   18.0     0.952902
2024-08-23       OCN  synchronized     1.059677   51.0     1.220206
2024-08-23       RAW  synchronized    95.297194   69.0     0.865802
2024-08-23       SLC  synchronized   390.303561   52.0     1.461507
2024-08-24      GRDH     fscanner    69.452094   22.0     0.688923
2024-08-24      GRDH  synchronized    82.899242   50.0     1.739290
2024-08-24      GRDM     fscanner     3.589967   33.0     0.673746
2024-08-24      GRDM  synchronized     3.483874    9.0     2.521976
2024-08-24       OCN  synchronized     0.794677   45.0     2.588141
2024-08-24       RAW  synchronized    86.102796   60.0     1.387378
2024-08-24       SLC  synchronized   376.858559   50.0     2.339792
2024-08-25      GRDH     fscanner    33.198935   11.0     0.821000
2024-08-25      GRDH  synchronized    78.052145   48.0     2.099658
2024-08-25      GRDM     fscanner     2.726124   25.0     0.714539
2024-08-25      GRDM  synchronized     6.433329   17.0     1.840085
2024-08-25       OCN  synchronized     0.940750   44.0     2.352498
2024-08-25       RAW  synchronized    89.278679   65.0     1.620960
2024-08-25       SLC  synchronized   376.984665   51.0     2.608182
2024-08-26      GRDH     fscanner    69.879151   21.0     0.909303
2024-08-26      GRDH  synchronized   107.359871   66.0     3.347328
2024-08-26      GRDM     fscanner     4.466795   41.0     0.786900
2024-08-26      GRDM  synchronized     3.471809    9.0     4.192813
2024-08-26       OCN  synchronized     0.943067   58.0     3.820212
2024-08-26       RAW  synchronized   107.995819   75.0     3.573719
2024-08-26       SLC  synchronized   527.557419   71.0     3.587906
2024-08-27      GRDH     fscanner    40.275164   16.0     0.683481
2024-08-27      GRDH  synchronized    35.259479   21.0    11.747737
2024-08-27      GRDM     fscanner     6.075248   32.0     0.604758
2024-08-27      GRDM  synchronized     6.533352   17.0    10.116836
2024-08-27       OCN  synchronized     0.774922   32.0    11.400380
2024-08-27       RAW  synchronized    48.771128   38.0    11.091117
2024-08-27       SLC  synchronized   177.019493   23.0    12.046200
2024-08-28      GRDH     fscanner    58.689284   20.0     0.620207
2024-08-28      GRDH  synchronized   107.795025   65.0     5.510151
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2024-08-28      GRDM    fscanner     5.941857    40.0   0.592138
2024-08-28      GRDM    synchronized 5.721928    15.0   4.605179
2024-08-28      OCN     synchronized 1.169609    64.0   5.580770
2024-08-28      RAW     synchronized 113.806678  80.0   4.979296
2024-08-28      SLC     synchronized 503.997461  67.0   5.795309
2024-08-29      GRDH    fscanner     68.554779   23.0   0.798354
2024-08-29      GRDH    synchronized 78.230101   47.0   1.199134
2024-08-29      GRDM    fscanner     6.580016    37.0   0.760609
2024-08-29      GRDM    synchronized 7.190642    20.0   0.623690
2024-08-29      OCN     synchronized 1.185545    60.0   1.264134
2024-08-29      RAW     synchronized 89.459947   67.0   0.923987
2024-08-29      SLC     synchronized 376.768977  49.0   1.589184
2024-08-30      GRDH    fscanner     59.696627   21.0   0.543000
2024-08-30      GRDH    synchronized 85.475410   51.0   1.127604
2024-08-30      GRDM    fscanner     4.965529    35.0   0.531336
2024-08-30      GRDM    synchronized 5.151327    15.0   0.666456
2024-08-30      OCN     synchronized 0.909902    48.0   1.141727
2024-08-30      RAW     synchronized 91.794477   66.0   1.005223
2024-08-30      SLC     synchronized 416.098742  55.0   1.420853
2024-08-31      GRDH    fscanner     61.656280   20.0   0.831304
2024-08-31      GRDH    synchronized 73.497014   45.0   1.093584
2024-08-31      GRDM    fscanner     6.908656    41.0   0.798053
2024-08-31      GRDM    synchronized 4.278176    11.0   0.595302
2024-08-31      OCN     synchronized 0.774994    42.0   1.040611
2024-08-31      RAW     synchronized 79.030652   56.0   0.813215
2024-08-31      SLC     synchronized 359.421405  48.0   1.406024
2024-08-01      MSIL1C  synchronized 566.518880  1328.0 4.917333
2024-08-02      MSIL1C  synchronized 394.582656  899.0  2.411881
2024-08-03      MSIL1C  synchronized 598.627261  1371.0 3.628951
2024-08-04      MSIL1C  synchronized 554.716938  1250.0 3.816718
2024-08-05      MSIL1C  synchronized 725.407676  1575.0 6.491926
2024-08-06      MSIL1C  synchronized 598.039775  1350.0 3.897006
2024-08-07      MSIL1C  synchronized 525.170891  1225.0 4.628209
2024-08-08      MSIL1C  synchronized 546.061973  1345.0 4.139949
2024-08-09      MSIL1C  synchronized 528.376842  1245.0 3.653539
2024-08-10      MSIL1C  synchronized 564.269424  1313.0 4.305992
2024-08-11      MSIL1C  synchronized 555.296435  1315.0 3.401353
2024-08-12      MSIL1C  synchronized 581.984783  1329.0 4.011899
2024-08-13      MSIL1C  synchronized 620.058930  1399.0 4.953284
2024-08-14      MSIL1C  synchronized 545.848699  1264.0 3.745068
2024-08-15      MSIL1C  synchronized 629.043253  1447.0 4.053941
2024-08-16      MSIL1C  synchronized 550.582174  1297.0 3.250070
2024-08-17      MSIL1C  synchronized 538.256441  1319.0 3.529138
2024-08-18      MSIL1C  synchronized 562.972571  1327.0 3.253908
2024-08-19      MSIL1C  synchronized 550.386631  1232.0 3.867627
2024-08-20      MSIL1C  synchronized 578.007726  1340.0 4.567247
2024-08-21      MSIL1C  synchronized 576.546740  1341.0 3.895732
2024-08-22      MSIL1C  synchronized 529.368418  1222.0 6.474768
2024-08-23      MSIL1C  synchronized 598.085093  1345.0 4.726281
2024-08-24      MSIL1C  synchronized 563.228493  1254.0 3.953632
2024-08-25      MSIL1C  synchronized 655.555514  1459.0 3.911808
2024-08-26      MSIL1C  synchronized 596.275347  1347.0 4.041596
2024-08-27      MSIL1C  synchronized 537.026268  1228.0 3.978553
2024-08-28      MSIL1C  synchronized 590.871907  1345.0 3.436297
2024-08-29      MSIL1C  synchronized 523.236433  1153.0 4.019606
2024-08-30      MSIL1C  synchronized 456.137822  1026.0 4.703679
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2024-08-31     MSIL1C   synchronized   635.903331   1479.0    3.574846
2024-08-01     MSIL2A   synchronized   743.153362   1359.0    5.515359
2024-08-02     MSIL2A   synchronized   518.622186    909.0    2.895697
2024-08-03     MSIL2A   synchronized   771.705834   1370.0    4.183631
2024-08-04     MSIL2A   synchronized   720.821357   1250.0    4.946949
2024-08-05     MSIL2A   synchronized   931.123821   1571.0    6.823204
2024-08-06     MSIL2A   synchronized   784.393439   1370.0    5.542413
2024-08-07     MSIL2A   synchronized   684.321522   1238.0    5.413245
2024-08-08     MSIL2A   synchronized   707.152680   1348.0    4.828562
2024-08-09     MSIL2A   synchronized   701.364174   1270.0    4.528965
2024-08-10     MSIL2A   synchronized   721.936186   1312.0    5.047026
2024-08-11     MSIL2A   synchronized   716.221753   1311.0    4.560999
2024-08-12     MSIL2A   synchronized   730.665214   1313.0    5.620380
2024-08-13     MSIL2A   synchronized   778.847761   1397.0    5.932376
2024-08-14     MSIL2A   synchronized   678.916315   1265.0    4.558785
2024-08-15     MSIL2A   synchronized   781.445238   1419.0    4.939862
2024-08-16     MSIL2A   synchronized   710.812966   1329.0    4.231449
2024-08-17     MSIL2A   synchronized   663.752914   1300.0    4.562498
2024-08-18     MSIL2A   synchronized   739.145822   1351.0    4.623741
2024-08-19     MSIL2A   synchronized   704.450728   1232.0    5.050797
2024-08-20     MSIL2A   synchronized   743.752986   1342.0    5.219262
2024-08-21     MSIL2A   synchronized   725.315784   1314.0    4.698496
2024-08-22     MSIL2A   synchronized   680.491461   1237.0    7.116887
2024-08-23     MSIL2A   synchronized   780.100174   1375.0    5.428847
2024-08-24     MSIL2A   synchronized   725.358992   1258.0    4.867309
2024-08-25     MSIL2A   synchronized   830.724056   1456.0    4.681273
2024-08-26     MSIL2A   synchronized   770.152876   1368.0    5.028622
2024-08-27     MSIL2A   synchronized   695.816286   1236.0    4.592469
2024-08-28     MSIL2A   synchronized   753.122467   1339.0    4.150057
2024-08-29     MSIL2A   synchronized   667.735380   1147.0    4.751586
2024-08-30     MSIL2A   synchronized   623.204752   1096.0    5.351502
2024-08-31     MSIL2A   synchronized   787.248133   1453.0    4.238997
2024-08-01     OLCI_L1  synchronized   144.282627    178.0    6.529815
2024-08-01     OLCI_L2  synchronized    20.992567    175.0    3.916157
2024-08-01    SLSTR_L1  synchronized    70.131451    170.0   16.202201
2024-08-01    SLSTR_L2  synchronized    15.883846    251.0   20.935201
2024-08-01     SRAL_L1  synchronized   137.058142     85.0   38.538850
2024-08-01     SRAL_L2  synchronized     5.228043    197.0   39.683454
2024-08-01      SYN_L2  synchronized    43.121791    215.0   21.264572
2024-08-02     OLCI_L1  synchronized   147.163162    182.0    5.987985
2024-08-02     OLCI_L2  synchronized    21.455577    176.0    3.348960
2024-08-02    SLSTR_L1  synchronized    70.556900    171.0   14.940994
2024-08-02    SLSTR_L2  synchronized    16.522551    260.0   19.730150
2024-08-02     SRAL_L1  synchronized   134.289734     85.0   38.459222
2024-08-02     SRAL_L2  synchronized     5.208510    196.0   40.555655
2024-08-02      SYN_L2  synchronized    48.607029    225.0   22.132059
2024-08-03     OLCI_L1  synchronized   142.617589    176.0    3.569528
2024-08-03     OLCI_L2  synchronized    19.944228    168.0    2.936550
2024-08-03    SLSTR_L1  synchronized    65.996515    160.0    3.170332
2024-08-03    SLSTR_L2  synchronized    15.260130    242.0   18.823325
2024-08-03     SRAL_L1  synchronized   133.351472     81.0   38.520035
2024-08-03     SRAL_L2  synchronized     5.482338    207.0   39.361518
2024-08-03      SYN_L2  synchronized    46.757330    215.0   21.325200
2024-08-04     OLCI_L1  synchronized   146.365047    179.0    9.731504
2024-08-04     OLCI_L2  synchronized    21.475861    184.0   10.944766
2024-08-04    SLSTR_L1  synchronized    66.912170    162.0    3.722020
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2024-08-04    SLSTR_L2    synchronized     15.862899    251.0    22.410746
2024-08-04    SRAL_L1     synchronized    139.511907     87.0    38.515046
2024-08-04    SRAL_L2     synchronized      5.494068    206.0    39.679673
2024-08-04     SYN_L2     synchronized     44.027459    215.0    20.986606
2024-08-05    OLCI_L1     synchronized    140.734904    172.0    10.004163
2024-08-05    OLCI_L2     synchronized     19.920427    171.0    10.604999
2024-08-05    SLSTR_L1    synchronized     64.419521    156.0     4.491553
2024-08-05    SLSTR_L2    synchronized     14.718808    233.0    23.113732
2024-08-05    SRAL_L1     synchronized    139.135822     86.0    38.550799
2024-08-05    SRAL_L2     synchronized      5.184874    196.0    39.635818
2024-08-05     SYN_L2     synchronized     44.064401    215.0    20.346749
2024-08-06    OLCI_L1     synchronized    149.016149    184.0     7.642175
2024-08-06    OLCI_L2     synchronized     20.457379    175.0     5.490571
2024-08-06    SLSTR_L1    synchronized     74.023589    179.0     5.974773
2024-08-06    SLSTR_L2    synchronized     17.882835    282.0    18.425711
2024-08-06    SRAL_L1     synchronized    136.792482     85.0    38.470833
2024-08-06    SRAL_L2     synchronized      5.274907    196.0    40.170946
2024-08-06     SYN_L2     synchronized     46.026784    220.0    21.874537
2024-08-07    OLCI_L1     synchronized    136.683967    170.0     4.845598
2024-08-07    OLCI_L2     synchronized     20.328182    174.0     3.400714
2024-08-07    SLSTR_L1    synchronized     76.537961    185.0    15.419733
2024-08-07    SLSTR_L2    synchronized     16.651213    264.0    19.520414
2024-08-07    SRAL_L1     synchronized    138.735166     86.0    38.907230
2024-08-07    SRAL_L2     synchronized      5.448182    208.0    39.502063
2024-08-07     SYN_L2     synchronized     43.793575    208.0    21.705461
2024-08-08    OLCI_L1     synchronized    141.294820    176.0    10.536388
2024-08-08    OLCI_L2     synchronized     21.778669    188.0    11.543756
2024-08-08    SLSTR_L1    synchronized     66.600350    161.0     5.031111
2024-08-08    SLSTR_L2    synchronized     16.339908    257.0    22.156545
2024-08-08    SRAL_L1     synchronized    136.816820     84.0    38.889525
2024-08-08    SRAL_L2     synchronized      5.359639    201.0    40.107885
2024-08-08     SYN_L2     synchronized     42.849534    208.0    20.797888
2024-08-09    OLCI_L1     synchronized    141.434855    180.0     8.140161
2024-08-09    OLCI_L2     synchronized     19.811985    171.0    10.560004
2024-08-09    SLSTR_L1    synchronized     64.101001    155.0    16.142490
2024-08-09    SLSTR_L2    synchronized     15.029336    237.0    22.759618
2024-08-09    SRAL_L1     synchronized    131.750550     81.0    38.513607
2024-08-09    SRAL_L2     synchronized      4.991823    190.0    39.393184
2024-08-09     SYN_L2     synchronized     42.811740    212.0    22.335083
2024-08-10    OLCI_L1     synchronized    141.343130    182.0     7.056454
2024-08-10    OLCI_L2     synchronized     19.734055    170.0     3.265107
2024-08-10    SLSTR_L1    synchronized     68.127117    165.0     4.697912
2024-08-10    SLSTR_L2    synchronized     17.159387    270.0    19.021073
2024-08-10    SRAL_L1     synchronized    137.664846     88.0    38.758919
2024-08-10    SRAL_L2     synchronized      5.329537    198.0    40.520830
2024-08-10     SYN_L2     synchronized     41.033177    210.0    21.496055
2024-08-11    OLCI_L1     synchronized    136.221075    176.0     6.341919
2024-08-11    OLCI_L2     synchronized     19.568197    167.0    10.398074
2024-08-11    SLSTR_L1    synchronized     72.763513    177.0     3.517624
2024-08-11    SLSTR_L2    synchronized     16.475088    260.0    19.281586
2024-08-11    SRAL_L1     synchronized    138.603130     85.0    39.219328
2024-08-11    SRAL_L2     synchronized      5.516782    209.0    39.093755
2024-08-11     SYN_L2     synchronized     41.783960    209.0    22.232498
2024-08-12    OLCI_L1     synchronized    130.069431    169.0     9.906728
2024-08-12    OLCI_L2     synchronized     20.252708    174.0    11.644954
2024-08-12    SLSTR_L1    synchronized     65.576774    160.0    11.696325
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2024-08-12    SLSTR_L2   synchronized    15.266073    241.0    23.619046
2024-08-12     SRAL_L1   synchronized   140.976156     85.0    38.672465
2024-08-12     SRAL_L2   synchronized     5.422627    205.0    40.316801
2024-08-12      SYN_L2   synchronized    42.174485    210.0    22.026700
2024-08-13     OLCI_L1   synchronized   108.293058    142.0     6.563127
2024-08-13     OLCI_L2   synchronized    17.604457    153.0     3.375738
2024-08-13    SLSTR_L1   synchronized    64.154825    156.0     6.409826
2024-08-13    SLSTR_L2   synchronized    15.675857    247.0    22.539608
2024-08-13     SRAL_L1   synchronized   126.233598     78.0    38.501292
2024-08-13     SRAL_L2   synchronized     5.113663    191.0    39.935129
2024-08-13      SYN_L2   synchronized    43.746371    212.0    22.505034
2024-08-14     OLCI_L1   synchronized   136.760876    179.0     6.462057
2024-08-14     OLCI_L2   synchronized    21.390036    188.0    11.242427
2024-08-14    SLSTR_L1   synchronized    68.462304    166.0     4.602175
2024-08-14    SLSTR_L2   synchronized    16.847103    266.0    19.425292
2024-08-14     SRAL_L1   synchronized   141.118217     85.0    39.784003
2024-08-14     SRAL_L2   synchronized     5.194950    198.0    39.984443
2024-08-14      SYN_L2   synchronized    39.267762    202.0    20.348352
2024-08-15     OLCI_L1   synchronized   140.915612    182.0     9.424586
2024-08-15     OLCI_L2   synchronized    18.655125    163.0     6.455407
2024-08-15    SLSTR_L1   synchronized    68.608851    166.0    15.411731
2024-08-15    SLSTR_L2   synchronized    15.161213    239.0    19.245776
2024-08-15     SRAL_L1   synchronized   136.325564     84.0    38.536359
2024-08-15     SRAL_L2   synchronized     5.457170    203.0    40.067043
2024-08-15      SYN_L2   synchronized    39.428848    202.0    21.707951
2024-08-16     OLCI_L1   synchronized   131.191001    171.0     9.799344
2024-08-16     OLCI_L2   synchronized    19.835848    178.0    10.652382
2024-08-16    SLSTR_L1   synchronized    64.860431    157.0     3.156431
2024-08-16    SLSTR_L2   synchronized    15.170572    239.0    22.565123
2024-08-16     SRAL_L1   synchronized   134.864249     82.0    38.585340
2024-08-16     SRAL_L2   synchronized     5.262135    195.0    39.897086
2024-08-16      SYN_L2   synchronized    38.816393    208.0    21.660576
2024-08-17     OLCI_L1   synchronized   136.134761    181.0     3.741914
2024-08-17     OLCI_L2   synchronized    18.087411    162.0     2.920852
2024-08-17    SLSTR_L1   synchronized    65.236642    158.0     3.786318
2024-08-17    SLSTR_L2   synchronized    14.904986    235.0    21.668228
2024-08-17     SRAL_L1   synchronized   137.842041     88.0    38.464130
2024-08-17     SRAL_L2   synchronized     5.320470    199.0    40.012919
2024-08-17      SYN_L2   synchronized    40.377719    214.0    22.173506
2024-08-18     OLCI_L1   synchronized   134.260126    178.0     5.195855
2024-08-18     OLCI_L2   synchronized    20.536267    188.0    10.241574
2024-08-18    SLSTR_L1   synchronized    65.317791    158.0     3.096364
2024-08-18    SLSTR_L2   synchronized    15.723007    248.0    18.961926
2024-08-18     SRAL_L1   synchronized   138.390114     83.0    39.524730
2024-08-18     SRAL_L2   synchronized     5.334243    202.0    39.948859
2024-08-18      SYN_L2   synchronized    39.963497    210.0    21.741531
2024-08-19     OLCI_L1   synchronized   130.603890    173.0     9.178231
2024-08-19     OLCI_L2   synchronized    18.963384    172.0     8.378989
2024-08-19    SLSTR_L1   synchronized    63.431300    164.0    15.693143
2024-08-19    SLSTR_L2   synchronized    15.449093    241.0    21.807665
2024-08-19     SRAL_L1   synchronized   133.964887     83.0    38.512198
2024-08-19     SRAL_L2   synchronized     5.452199    205.0    40.045355
2024-08-19      SYN_L2   synchronized    37.225446    197.0    22.340339
2024-08-20     OLCI_L1   synchronized   132.940415    177.0     9.895025
2024-08-20     OLCI_L2   synchronized    19.459042    176.0    10.352828
2024-08-20    SLSTR_L1   synchronized    61.495786    171.0    15.311959
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2024-08-20    SLSTR_L2   synchronized   14.396972   227.0   23.562126
2024-08-20    SRAL_L1    synchronized  143.410814    86.0   38.806145
2024-08-20    SRAL_L2    synchronized    5.419650   203.0   39.589602
2024-08-20     SYN_L2    synchronized   31.380696   173.0   27.894249
2024-08-21    OLCI_L1    synchronized  134.057431   180.0    6.537399
2024-08-21    OLCI_L2    synchronized   19.084644   176.0    5.246064
2024-08-21    SLSTR_L1   synchronized   66.652885   171.0    3.971277
2024-08-21    SLSTR_L2   synchronized   16.315284   255.0   19.281061
2024-08-21    SRAL_L1    synchronized  139.949834    89.0   38.484622
2024-08-21    SRAL_L2    synchronized    5.262529   200.0   39.553262
2024-08-21     SYN_L2    synchronized   37.713267   210.0   23.846079
2024-08-22    OLCI_L1    synchronized  132.361493   178.0    5.441833
2024-08-22    OLCI_L2    synchronized   19.661989   185.0    9.886691
2024-08-22    SLSTR_L1   synchronized   75.883973   184.0   10.285143
2024-08-22    SLSTR_L2   synchronized   17.609980   277.0   19.400717
2024-08-22    SRAL_L1    synchronized  138.722144    84.0   39.004788
2024-08-22    SRAL_L2    synchronized    5.465698   208.0   40.164572
2024-08-22     SYN_L2    synchronized   39.579512   217.0   22.049892
2024-08-23    OLCI_L1    synchronized  131.322504   176.0    9.565588
2024-08-23    OLCI_L2    synchronized   18.303054   171.0    3.465851
2024-08-23    SLSTR_L1   synchronized   70.982076   172.0    3.579821
2024-08-23    SLSTR_L2   synchronized   16.243102   256.0   20.036971
2024-08-23    SRAL_L1    synchronized  139.786251    87.0   38.507544
2024-08-23    SRAL_L2    synchronized    5.566442   208.0   40.102483
2024-08-23     SYN_L2    synchronized   38.463551   214.0   21.634575
2024-08-24    OLCI_L1    synchronized  124.715010   170.0    5.402510
2024-08-24    OLCI_L2    synchronized   19.174728   180.0   10.524501
2024-08-24    SLSTR_L1   synchronized   69.790986   169.0   16.140979
2024-08-24    SLSTR_L2   synchronized   15.998960   252.0   21.789882
2024-08-24    SRAL_L1    synchronized  139.709638    87.0   38.477196
2024-08-24    SRAL_L2    synchronized    5.212507   199.0   39.435729
2024-08-24     SYN_L2    synchronized   37.686378   213.0   21.066362
2024-08-25    OLCI_L1    synchronized  140.369753   189.0    8.601849
2024-08-25    OLCI_L2    synchronized   19.239108   177.0    3.511550
2024-08-25    SLSTR_L1   synchronized   70.765082   171.0   15.410616
2024-08-25    SLSTR_L2   synchronized   16.746428   263.0   18.142210
2024-08-25    SRAL_L1    synchronized  132.288036    84.0   38.447161
2024-08-25    SRAL_L2    synchronized    5.217192   196.0   40.353232
2024-08-25     SYN_L2    synchronized   39.533634   208.0   20.421109
2024-08-26    OLCI_L1    synchronized  128.357886   175.0    6.632756
2024-08-26    OLCI_L2    synchronized   19.233223   179.0    6.736194
2024-08-26    SLSTR_L1   synchronized   70.972454   172.0    6.486844
2024-08-26    SLSTR_L2   synchronized   16.581641   261.0   23.580244
2024-08-26    SRAL_L1    synchronized  136.014370    82.0   39.152020
2024-08-26    SRAL_L2    synchronized    5.431588   208.0   40.008338
2024-08-26     SYN_L2    synchronized   39.977362   209.0   21.051791
2024-08-27    OLCI_L1    synchronized  123.536270   170.0    9.669087
2024-08-27    OLCI_L2    synchronized   17.981400   166.0   11.568788
2024-08-27    SLSTR_L1   synchronized   71.540386   174.0   17.008112
2024-08-27    SLSTR_L2   synchronized   16.039159   253.0   21.565501
2024-08-27    SRAL_L1    synchronized  139.766893    87.0   38.502603
2024-08-27    SRAL_L2    synchronized    5.613641   208.0   40.002614
2024-08-27     SYN_L2    synchronized   38.453794   208.0   20.636014
2024-08-28    OLCI_L1    synchronized  124.602227   170.0    8.655744
2024-08-28    OLCI_L2    synchronized   18.583376   171.0   10.704625
2024-08-28    SLSTR_L1   synchronized   66.584429   162.0    4.261455
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2024-08-28    SLSTR_L2   synchronized    15.502144   245.0    23.168199
2024-08-28     SRAL_L1   synchronized   137.443421    86.0    38.755623
2024-08-28     SRAL_L2   synchronized     5.285987   200.0    39.897208
2024-08-28      SYN_L2   synchronized    36.786291   196.0    21.703804
2024-08-29     OLCI_L1   synchronized    75.194339    95.0     4.857229
2024-08-29     OLCI_L2   synchronized    11.762975   102.0     3.765070
2024-08-29    SLSTR_L1   synchronized    49.279403   120.0     4.481179
2024-08-29    SLSTR_L2   synchronized    12.252699   193.0    18.688492
2024-08-29     SRAL_L1   synchronized   107.995047    61.0    39.815085
2024-08-29     SRAL_L2   synchronized     3.961463   142.0    40.526778
2024-08-29      SYN_L2   synchronized    28.948842   146.0    23.771322
2024-08-30     OLCI_L1   synchronized   146.632216   177.0    14.244464
2024-08-30     OLCI_L2   synchronized    20.353317   167.0    16.493384
2024-08-30    SLSTR_L1   synchronized    84.779959   206.0    22.809240
2024-08-30    SLSTR_L2   synchronized    19.222937   303.0    24.790699
2024-08-30     SRAL_L1   synchronized   137.604306    86.0    40.289938
2024-08-30     SRAL_L2   synchronized     5.687714   220.0    40.462530
2024-08-30      SYN_L2   synchronized    40.130957   205.0    28.463134
2024-08-31     OLCI_L1   synchronized   107.804753   135.0     9.381253
2024-08-31     OLCI_L2   synchronized    16.699228   145.0    10.080443
2024-08-31    SLSTR_L1   synchronized    75.441324   185.0    15.812339
2024-08-31    SLSTR_L2   synchronized    18.079072   286.0    21.977219
2024-08-31     SRAL_L1   synchronized   148.598071    94.0    39.252370
2024-08-31     SRAL_L2   synchronized     5.688370   213.0    40.111635
2024-08-31      SYN_L2   synchronized    31.807826   172.0    22.465563
2024-08-01     NRTI_L2   synchronized    11.912236   317.0     1.896768
2024-08-01    OFFL_L1B   synchronized   356.932151   136.0     4.014447
2024-08-01     OFFL_L2   synchronized    38.523711    95.0   107.073028
2024-08-02     NRTI_L2   synchronized     8.983081   261.0     1.980047
2024-08-02    OFFL_L1B   synchronized   214.641461    79.0     4.202083
2024-08-02     OFFL_L2   synchronized    27.755754    66.0   120.203245
2024-08-03     NRTI_L2   synchronized    11.789767   309.0     2.012383
2024-08-03    OFFL_L1B   synchronized   309.455772   113.0     3.858835
2024-08-03     OFFL_L2   synchronized    28.383349    71.0   130.450252
2024-08-04     NRTI_L2   synchronized    13.210596   337.0     2.079086
2024-08-04    OFFL_L1B   synchronized   306.096427   112.0     4.159518
2024-08-04     OFFL_L2   synchronized    34.587054    83.0   144.300201
2024-08-05     NRTI_L2   synchronized    12.470979   342.0     1.962313
2024-08-05    OFFL_L1B   synchronized   350.076278   128.0     4.158044
2024-08-05     OFFL_L2   synchronized    28.726090    69.0   158.076066
2024-08-06     NRTI_L2   synchronized    10.393880   289.0     1.912366
2024-08-06    OFFL_L1B   synchronized   305.883229   114.0     4.112125
2024-08-06     OFFL_L2   synchronized    44.081814   118.0   165.373448
2024-08-07     NRTI_L2   synchronized    11.844645   315.0     1.895719
2024-08-07    OFFL_L1B   synchronized   325.307462   118.0     4.128800
2024-08-07     OFFL_L2   synchronized    45.109195   113.0   168.996033
2024-08-08     NRTI_L2   synchronized    12.458661   332.0     1.912356
2024-08-08    OFFL_L1B   synchronized   349.894930   128.0     4.205884
2024-08-08     OFFL_L2   synchronized    95.478657   269.0   162.197902
2024-08-09     NRTI_L2   synchronized    12.112002   331.0     1.895747
2024-08-09    OFFL_L1B   synchronized   305.878723   112.0     4.068688
2024-08-09     OFFL_L2   synchronized   101.227829   282.0   149.550292
2024-08-10     NRTI_L2   synchronized    10.813727   315.0     1.912266
2024-08-10    OFFL_L1B   synchronized   305.895322   112.0     4.117178
2024-08-10     OFFL_L2   synchronized    95.157301   265.0   135.944267
2024-08-11     NRTI_L2   synchronized    11.898110   324.0     1.879086
```

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2024-08-11    OFFL_L1B   synchronized   311.879407   115.0     4.011696
2024-08-11    OFFL_L2    synchronized    96.039298   269.0   125.156611
2024-08-12    NRTI_L2    synchronized     8.507328   216.0     1.882412
2024-08-12    OFFL_L1B   synchronized   193.459477    72.0     4.053727
2024-08-12    OFFL_L2    synchronized    94.918033   278.0   111.658217
2024-08-13    NRTI_L2    synchronized    12.002633   325.0     1.882459
2024-08-13    OFFL_L1B   synchronized   327.235421   125.0     4.191614
2024-08-13    OFFL_L2    synchronized   103.892819   282.0    99.450323
2024-08-14    NRTI_L2    synchronized    11.521076   295.0     1.898994
2024-08-14    OFFL_L1B   synchronized   303.355696   112.0     4.035100
2024-08-14    OFFL_L2    synchronized    97.667803   268.0    85.773785
2024-08-15    NRTI_L2    synchronized    12.178792   350.0     1.932284
2024-08-15    OFFL_L1B   synchronized   305.793082   112.0     3.994448
2024-08-15    OFFL_L2    synchronized    93.749152   276.0    67.118891
2024-08-16    NRTI_L2    synchronized    10.750139   307.0     1.899056
2024-08-16    OFFL_L1B   synchronized   319.079382   117.0     4.122241
2024-08-16    OFFL_L2    synchronized   104.335009   291.0    53.471814
2024-08-17    NRTI_L2    synchronized     5.915463   180.0     1.915669
2024-08-17    OFFL_L1B   synchronized   184.995185    67.0     4.008488
2024-08-17    OFFL_L2    synchronized    83.352186   224.0    41.679728
2024-08-18    NRTI_L2    synchronized    11.429839   306.0     1.902930
2024-08-18    OFFL_L1B   synchronized   369.518878   136.0     4.281014
2024-08-18    OFFL_L2    synchronized    67.370604   184.0    39.294539
2024-08-19    NRTI_L2    synchronized    10.625466   295.0     1.869563
2024-08-19    OFFL_L1B   synchronized   371.747080   136.0     4.205267
2024-08-19    OFFL_L2    synchronized    66.592248   185.0    41.114449
2024-08-20    NRTI_L2    synchronized    11.330040   322.0     1.936212
2024-08-20    OFFL_L1B   synchronized   305.800623   112.0     4.016927
2024-08-20    OFFL_L2    synchronized    65.326485   184.0    39.337436
2024-08-21    NRTI_L2    synchronized    11.939711   324.0     1.886166
2024-08-21    OFFL_L1B   synchronized   305.702217   112.0     4.208194
2024-08-21    OFFL_L2    synchronized    67.314259   185.0    39.285211
2024-08-22    NRTI_L2    synchronized    11.055791   288.0     1.952856
2024-08-22    OFFL_L1B   synchronized   327.714707   120.0     4.203107
2024-08-22    OFFL_L2    synchronized    67.067215   183.0    39.529598
2024-08-23    NRTI_L2    synchronized    10.236697   297.0     1.886431
2024-08-23    OFFL_L1B   synchronized   305.776608   112.0     4.122843
2024-08-23    OFFL_L2    synchronized    66.307821   182.0    39.414933
2024-08-24    NRTI_L2    synchronized    10.162945   288.0     1.919656
2024-08-24    OFFL_L1B   synchronized   305.719665   112.0     4.108632
2024-08-24    OFFL_L2    synchronized    68.336245   188.0    39.221272
2024-08-25    NRTI_L2    synchronized    11.021718   304.0     1.894587
2024-08-25    OFFL_L1B   synchronized   303.221706   112.0     4.006080
2024-08-25    OFFL_L2    synchronized    65.442937   178.0    39.591478
2024-08-26    NRTI_L2    synchronized    11.011523   324.0     1.886260
2024-08-26    OFFL_L1B   synchronized   303.193073   112.0     4.055897
2024-08-26    OFFL_L2    synchronized    68.240369   190.0    39.084591
2024-08-27    NRTI_L2    synchronized    10.444293   308.0     1.852928
2024-08-27    OFFL_L1B   synchronized   303.073127   110.0     4.166489
2024-08-27    OFFL_L2    synchronized    64.885801   178.0    39.371257
2024-08-28    NRTI_L2    synchronized     9.756625   297.0     1.886166
2024-08-28    OFFL_L1B   synchronized   305.767438   112.0     4.034120
2024-08-28    OFFL_L2    synchronized    62.262638   174.0    39.156936
2024-08-29    NRTI_L2    synchronized     9.523975   271.0     1.886225
2024-08-29    OFFL_L1B   synchronized   523.091091   189.0    55.356972
2024-08-29    OFFL_L2    synchronized    57.833895   155.0    39.895112
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2024-08-30    NRTI_L2   synchronized     8.465312   212.0    1.886345
2024-08-30    OFFL_L1B  synchronized   221.082196    81.0    4.049751
2024-08-30    OFFL_L2   synchronized    55.140948   151.0   40.007327
2024-08-31    NRTI_L2   synchronized    10.649927   330.0    1.869547
2024-08-31    OFFL_L1B  synchronized   303.227693   112.0    4.084647
2024-08-31    OFFL_L2   synchronized    65.434167   181.0   39.353243
2024-08-01    s2_l2a             NaN     1.762199     3.0         NaN
2024-08-01    s2_l1c             NaN   257.165039   488.0         NaN
2024-08-01    s1_iw              NaN    39.322090    11.0         NaN
2024-08-01    s1_ew              NaN     8.495419     3.0         NaN
2024-08-02    s2_l2a             NaN     6.251534    10.0         NaN
2024-08-02    s1_iw              NaN    60.216984    16.0         NaN
2024-08-02    s1_ew              NaN     6.135216     2.0         NaN
2024-08-02    s2_l1c             NaN   222.464294   412.0         NaN
2024-08-03    s2_l2a             NaN    27.085415     0.0         NaN
2024-08-03    s2_l1c             NaN   261.347713   502.0         NaN
2024-08-03    s1_iw              NaN    17.136471     5.0         NaN
2024-08-03    s1_ew              NaN    23.834831     8.0         NaN
2024-08-04    s2_l2a             NaN    27.085434     0.0         NaN
2024-08-04    s2_l1c             NaN   251.005341   443.0         NaN
2024-08-04    s1_iw              NaN    45.349480    35.0         NaN
2024-08-04    s1_ew              NaN    19.912266    10.0         NaN
2024-08-05    s1_iw              NaN    15.458794    12.0         NaN
2024-08-05    s1_ew              NaN    18.095940    10.0         NaN
2024-08-05    s2_l1c             NaN   320.188446   530.0         NaN
2024-08-05    s2_l2a             NaN     1.487701     4.0         NaN
2024-08-06    s1_iw              NaN    57.992462    40.0         NaN
2024-08-06    s1_ew              NaN     8.650787     6.0         NaN
2024-08-06    s2_l1c             NaN   285.750443   495.0         NaN
2024-08-06    s2_l2a             NaN     1.838017     3.0         NaN
2024-08-07    s1_iw              NaN    53.323669    31.0         NaN
2024-08-07    s1_ew              NaN    12.720177     6.0         NaN
2024-08-07    s2_l1c             NaN   255.110481   451.0         NaN
2024-08-07    s2_l2a             NaN     5.553623     8.0         NaN
2024-08-08    s2_l2a             NaN    30.170792     0.0         NaN
2024-08-08    s2_l1c             NaN   247.357895   476.0         NaN
2024-08-08    s1_ew              NaN    20.108597     7.0         NaN
2024-08-08    s1_iw              NaN    25.146469     6.0         NaN
2024-08-09    s2_l2a             NaN     4.965546     8.0         NaN
2024-08-09    s2_l1c             NaN   241.372803   475.0         NaN
2024-08-09    s1_iw              NaN    63.247433    14.0         NaN
2024-08-09    s1_ew              NaN    12.579456     5.0         NaN
2024-08-10    s1_iw              NaN    18.801769     5.0         NaN
2024-08-10    s1_ew              NaN    16.935947     6.0         NaN
2024-08-10    s2_l1c             NaN   266.257210   464.0         NaN
2024-08-10    s2_l2a             NaN     1.455105     4.0         NaN
2024-08-11    s1_iw              NaN    52.290436    14.0         NaN
2024-08-11    s1_ew              NaN    11.723515     4.0         NaN
2024-08-11    s2_l1c             NaN   244.076385   475.0         NaN
2024-08-11    s2_l2a             NaN     1.746288     3.0         NaN
2024-08-12    s2_l2a             NaN     5.815598     8.0         NaN
2024-08-12    s2_l1c             NaN   255.386230   487.0         NaN
2024-08-12    s1_iw              NaN    37.007973    12.0         NaN
2024-08-12    s1_ew              NaN     9.019077     3.0         NaN
2024-08-13    s1_iw              NaN    49.651821    27.0         NaN
2024-08-13    s1_ew              NaN     6.593666     3.0         NaN
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2024-08-13    s2_l1c        NaN    306.057919    523.0      NaN
2024-08-13    s2_l2a        NaN     24.881153      0.0      NaN
2024-08-14    s2_l2a        NaN      5.733521      8.0      NaN
2024-08-14    s2_l1c        NaN    256.956825    449.0      NaN
2024-08-14    s1_ew         NaN      6.216736      2.0      NaN
2024-08-14    s1_iw         NaN     69.494511     41.0      NaN
2024-08-15    s1_iw         NaN     20.577988      5.0      NaN
2024-08-15    s1_ew         NaN     22.000595      7.0      NaN
2024-08-15    s2_l1c        NaN    323.209270    521.0      NaN
2024-08-15    s2_l2a        NaN      1.137089      4.0      NaN
2024-08-16    s2_l1c        NaN    287.495495    487.0      NaN
2024-08-16    s2_l2a        NaN      1.755417      3.0      NaN
2024-08-16    s1_iw         NaN     52.488895     14.0      NaN
2024-08-16    s1_ew         NaN     16.615608      6.0      NaN
2024-08-17    s1_iw         NaN     19.885231      5.0      NaN
2024-08-17    s1_ew         NaN     12.515472      4.0      NaN
2024-08-17    s2_l1c        NaN    245.999718    466.0      NaN
2024-08-17    s2_l2a        NaN      6.033535      8.0      NaN
2024-08-18    s2_l1c        NaN    268.276146    474.0      NaN
2024-08-18    s1_iw         NaN     53.700676     39.0      NaN
2024-08-18    s1_ew         NaN      4.940392      3.0      NaN
2024-08-18    s2_l2a        NaN     24.347610      0.0      NaN
2024-08-19    s2_l1c        NaN    274.453079    467.0      NaN
2024-08-19    s2_l2a        NaN      6.425407      8.0      NaN
2024-08-19    s1_ew         NaN     13.571499      6.0      NaN
2024-08-19    s1_iw         NaN     47.902382     26.0      NaN
2024-08-20    s1_iw         NaN     26.875473     13.0      NaN
2024-08-20    s1_ew         NaN     18.522129      9.0      NaN
2024-08-20    s2_l1c        NaN    277.025707    461.0      NaN
2024-08-20    s2_l2a        NaN      1.319637      4.0      NaN
2024-08-21    s1_iw         NaN     59.884296     36.0      NaN
2024-08-21    s1_ew         NaN     13.866795      5.0      NaN
2024-08-21    s2_l1c        NaN    268.343216    467.0      NaN
2024-08-21    s2_l2a        NaN      1.440113      3.0      NaN
2024-08-22    s2_l1c        NaN    261.567638    462.0      NaN
2024-08-22    s2_l2a        NaN      3.674564      6.0      NaN
2024-08-22    s1_iw         NaN     17.641094     13.0      NaN
2024-08-22    s1_ew         NaN     20.443890      9.0      NaN
2024-08-23    s1_iw         NaN     56.907127     39.0      NaN
2024-08-23    s1_ew         NaN     16.870911      8.0      NaN
2024-08-23    s2_l1c        NaN    291.032291    492.0      NaN
2024-08-23    s2_l2a        NaN     24.365654      0.0      NaN
2024-08-24    s2_l2a        NaN      5.708946      8.0      NaN
2024-08-24    s2_l1c        NaN    260.537395    450.0      NaN
2024-08-24    s1_ew         NaN      9.099247      3.0      NaN
2024-08-24    s1_iw         NaN     44.301670     24.0      NaN
2024-08-25    s2_l2a        NaN      1.398472      4.0      NaN
2024-08-25    s2_l1c        NaN    322.385365    524.0      NaN
2024-08-25    s1_iw         NaN     32.955750     22.0      NaN
2024-08-25    s1_ew         NaN      8.894558      3.0      NaN
2024-08-26    s1_iw         NaN     76.546761     42.0      NaN
2024-08-26    s1_ew         NaN      5.535530      2.0      NaN
2024-08-26    s2_l1c        NaN    308.064610    512.0      NaN
2024-08-26    s2_l2a        NaN      1.773037      3.0      NaN
2024-08-27    s1_iw         NaN     26.536503     17.0      NaN
2024-08-27    s1_ew         NaN     19.743706     10.0      NaN
```

```
2024-08-27      s2_l1c         NaN  217.693684   380.0        NaN
2024-08-27      s2_l2a         NaN    5.127777     8.0        NaN
2024-08-28      s2_l2a         NaN   30.455441     0.0        NaN
2024-08-28       s1_iw         NaN   56.661770    37.0        NaN
2024-08-28       s1_ew         NaN   13.573593     6.0        NaN
2024-08-28      s2_l1c         NaN  271.445000   481.0        NaN
2024-08-29      s2_l1c         NaN  275.248058   462.0        NaN
2024-08-29      s2_l2a         NaN    5.979805     8.0        NaN
2024-08-29       s1_iw         NaN   19.387413     5.0        NaN
2024-08-29       s1_ew         NaN   16.465149     6.0        NaN
2024-08-30      s2_l2a         NaN    1.511990     4.0        NaN
2024-08-30      s2_l1c         NaN  277.561192   471.0        NaN
2024-08-30       s1_iw         NaN   54.928329    14.0        NaN
2024-08-30       s1_ew         NaN    6.733089     3.0        NaN
2024-08-31       s1_iw         NaN   56.949093    18.0        NaN
2024-08-31       s1_ew         NaN    9.321857     3.0        NaN
2024-08-31      s2_l1c         NaN  269.031643   467.0        NaN
2024-08-31      s2_l2a         NaN    0.861385     2.0        NaN
```

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