

Data Management at AC and DC of BEV

Philipp Mitterschiffthaler

BEV - Bundesamt für Eich- und Vermessungswesen



<ftp://olggps.oeaw.ac.at>

- **Austrian Academy of Science (Graz)**
- **Since 2005**
- **EPN RDC (all EPN stations included)**
- **OLG is a contract between AAS and BEV and will end 12/17**

~~<ftp://olggps.ocaw.ac.at>~~

Redirecting uploaded
files stops at
30/06/2017

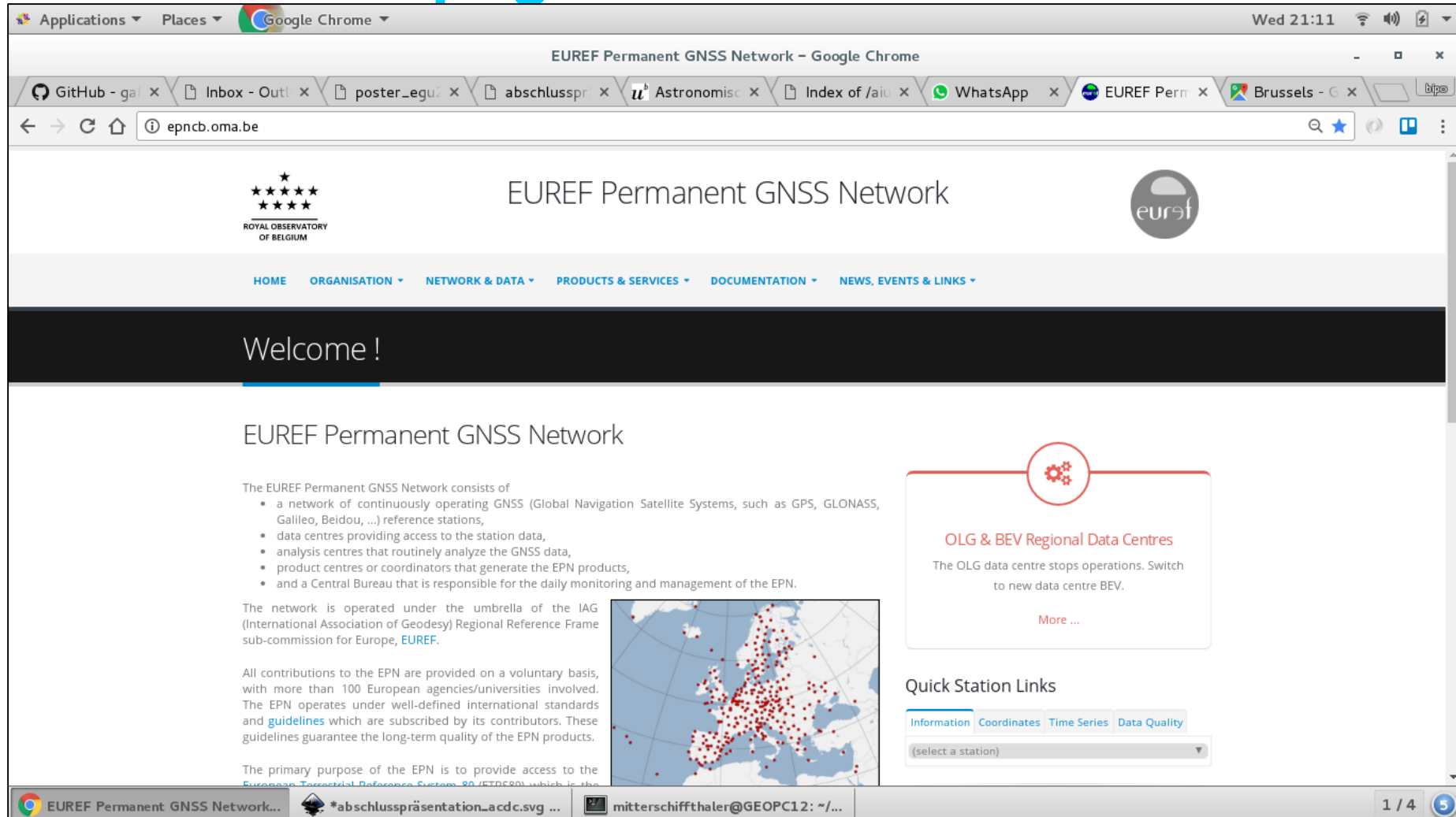


<ftp://gnss.bev.gv.at>

BEV Vienna

- **2 dedicated server farms**
- **Advanced storage system**
- **Started 2017 doy 100**
- **EPN RDC (all EPN stations included)**
- **No contract - will never end**

EPN homepage



The screenshot shows the EUREF Permanent GNSS Network homepage. The browser window has multiple tabs open, including GitHub, Inbox, poster_egu, abschlusspr, Astronomisc, Index of /aiu, WhatsApp, EUREF Perm, and Brussels. The address bar shows the URL epncb.oma.be. The page header features the logo of the Royal Observatory of Belgium and the EUREF logo. A navigation menu includes links for HOME, ORGANISATION, NETWORK & DATA, PRODUCTS & SERVICES, DOCUMENTATION, and NEWS, EVENTS & LINKS. A large black banner with the text "Welcome !" is prominently displayed. Below this, the main heading "EUREF Permanent GNSS Network" is followed by a description of the network's components and a list of services. A map of Europe shows the distribution of GNSS stations. A sidebar on the right contains a section titled "OLG & BEV Regional Data Centres" with a warning that the OLG data centre has stopped operations and a "Quick Station Links" section with tabs for Information, Coordinates, Time Series, and Data Quality, and a dropdown menu to select a station.

EUREF Permanent GNSS Network

HOME ORGANISATION NETWORK & DATA PRODUCTS & SERVICES DOCUMENTATION NEWS, EVENTS & LINKS

Welcome !

EUREF Permanent GNSS Network

The EUREF Permanent GNSS Network consists of

- a network of continuously operating GNSS (Global Navigation Satellite Systems, such as GPS, GLONASS, Galileo, Beidou, ...) reference stations,
- data centres providing access to the station data,
- analysis centres that routinely analyze the GNSS data,
- product centres or coordinators that generate the EPN products,
- and a Central Bureau that is responsible for the daily monitoring and management of the EPN.

The network is operated under the umbrella of the IAG (International Association of Geodesy) Regional Reference Frame sub-commission for Europe, [EUREF](#).

All contributions to the EPN are provided on a voluntary basis, with more than 100 European agencies/universities involved. The EPN operates under well-defined international standards and [guidelines](#) which are subscribed by its contributors. These guidelines guarantee the long-term quality of the EPN products.

The primary purpose of the EPN is to provide access to the [European Terrestrial Reference System 80 \(ETRS80\)](#) which is the

OLG & BEV Regional Data Centres

The OLG data centre stops operations. Switch to new data centre BEV.

[More ...](#)

Quick Station Links

[Information](#) [Coordinates](#) [Time Series](#) [Data Quality](#)

(select a station)

EPN homepage

RECEIVER : SEPT POLARX4TR

ANTENNA : JAVRINGANT_DM NONE

SET TO TRACK : GPS+GLO+GAL+BDS

INDIVIDUAL CALIBRATION : YES ([show calibrations](#))

Data routinely analysed by [BKG](#), [LPT](#), [NKG](#), [ROB](#), [SGO](#).

BRUX00BEL also belongs to the [IGS](#) network.

Data Provided

RINEX V2.11 - GPS+GLO

DAILY

Data centres	Online	Last data	Availability
EPNCB (historical)	✓	031/2017	N/A
BEV	✓	115/2017	100%
BKGI	✓	115/2017	100%

HOURLY

Data centres	Online	Last data	Availability	Latency
BEV	✓	116/2017 (5)	100%	100%
BKGI	✓	116/2017 (5)	100%	100%

REAL-TIME (RTCM 3.0, RTCM 3.1, RTCM 3.2)

BRUX0 available from :

✓ ASI ([broadcaster](#), [registration](#)) - RTCM 3.0 : 1004(1),1006(10),1008(10),1012(1)

RINEX V3.03 - GPS+GLO+GAL+BDS

DAILY

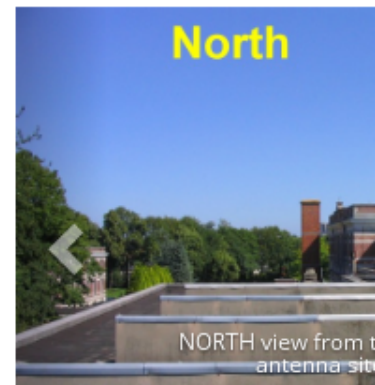
Data centres	Online	Last data	Availability
EPNCB (historical)	✓	031/2017	N/A
BEV	✓	115/2017	100%
BKGI	✓	115/2017	100%

HOURLY

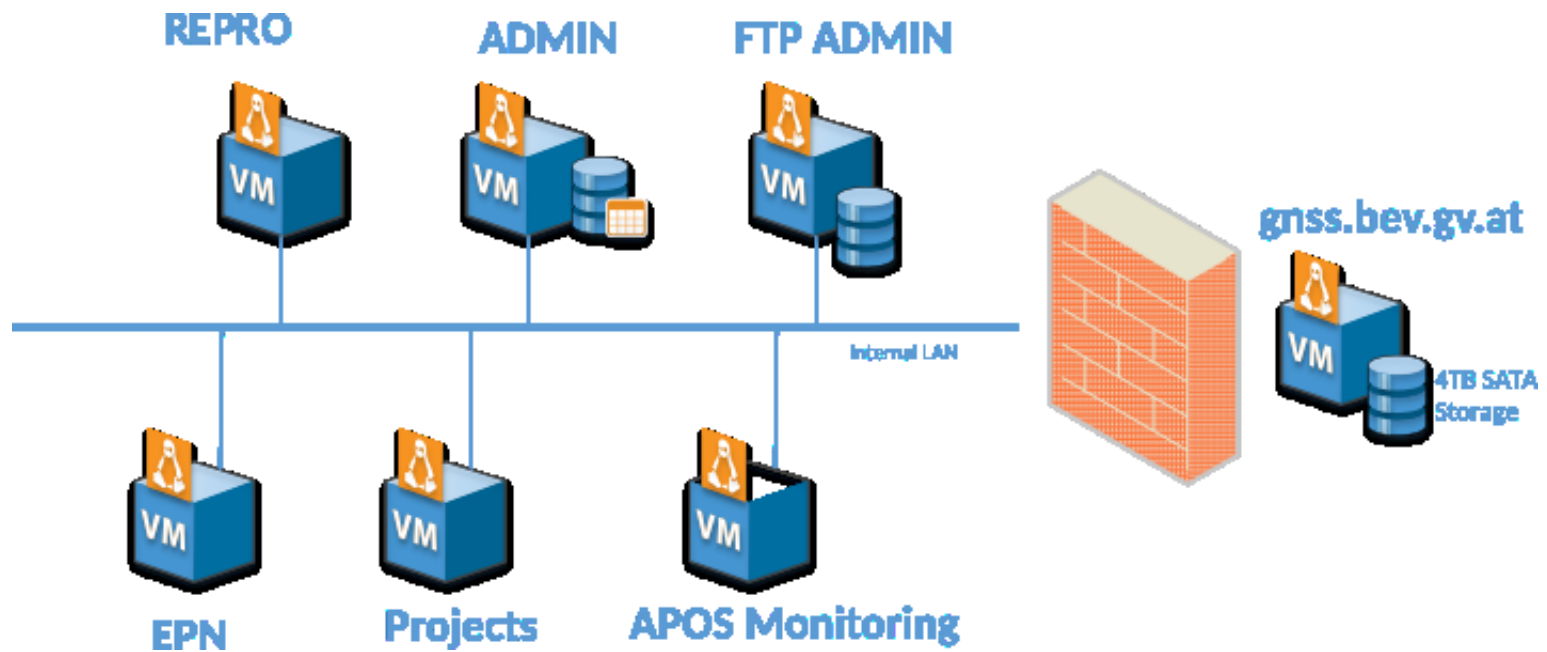
Data centres	Online	Last data	Availability	Latency
BEV	✓	116/2017 (5)	100%	100%
BKGI	✓	116/2017 (5)	100%	100%



Pictures



Overview



FTP Structure



The screenshot shows a web browser window with the address bar set to `ftp://gnss.bev.gv.at/pub/`. The page title is "Index of /pub/". Below the title, there is a table listing the contents of the directory. The table has three columns: "Name", "Size", and "Date Modified". The entries include a parent directory link, and several subdirectories: `indata/`, `indata2/`, `logs/`, `nrt/`, `nrt_v3/`, `obs/`, and `obs_v3/`. Each entry is preceded by a folder icon.

Name	Size	Date Modified
 [parent directory]		
 <code>indata/</code>		5/16/17, 10:21:00 PM
 <code>indata2/</code>		4/20/17, 2:03:00 AM
 <code>logs/</code>		5/9/17, 1:49:00 PM
 <code>nrt/</code>		5/16/17, 6:42:00 AM
 <code>nrt_v3/</code>		5/16/17, 6:42:00 AM
 <code>obs/</code>		2/15/17, 11:43:00 AM
 <code>obs_v3/</code>		2/15/17, 11:50:00 AM

FTP Structure



The screenshot shows a web browser window displaying the FTP directory listing for /pub/. The address bar shows the URL ftp://gnss.bev.gv.at/pub/. The title of the page is "Index of /pub/". The directory listing table has three columns: Name, Size, and Date Modified. The subdirectories listed are [parent directory], indata/, indata2/, logs/, nrt/, nrt_v3/, obs/, and obs_v3/. The subdirectories indata/ and indata2/ are highlighted with a green box.

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

FTP Structure



The screenshot shows a web browser window with the address bar set to `ftp://gnss.bev.gv.at/pub/`. The page title is "Index of /pub/". Below the title, there is a table listing the contents of the directory. The table has three columns: "Name", "Size", and "Date Modified". The "logs/" directory is highlighted with a green box.

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

FTP Structure

The screenshot displays an FTP client interface. The left pane shows the 'Index of /pub/' directory with a table of files and folders. The 'logs/' folder is highlighted with a green box. The right pane shows the contents of the file 'concatenation.json' located at 'ftp://gnss.bev.gv.at/pub/logs/concatenation.json'.

Index of /pub/

Name	Size	Date Modified
[parent directory]		
indata/		5/16/17, 10:21:00 PM
indata2/		4/20/17, 2:03:00 AM
logs/		5/9/17, 1:49:00 PM
nrt/		5/16/17, 6:42:00 AM
nrt_v3/		5/16/17, 6:42:00 AM
obs/		2/15/17, 11:43:00 AM
obs_v3/		2/15/17, 11:50:00 AM

ftp://gnss.bev.gv.at/pub/logs/concatenation.json

```
{
  "status": "concatenation",
  "compressiontype": "Z",
  "stat": "sass",
  "@timestamp": "2017-05-16T03:04:30.507Z",
  "filename": "sass1350.17d.Z",
  "doy": 135,
  "rinexversion": "rinex2",
  "duration": "daily",
  "@comp_epoch": "2017-05-15T00:00:00.000Z"
},
{
  "status": "concatenation",
  "compressiontype": "Z",
  "stat": "warn",
  "@timestamp": "2017-05-16T03:04:45.509Z",
  "filename": "warn1350.17d.Z",
```

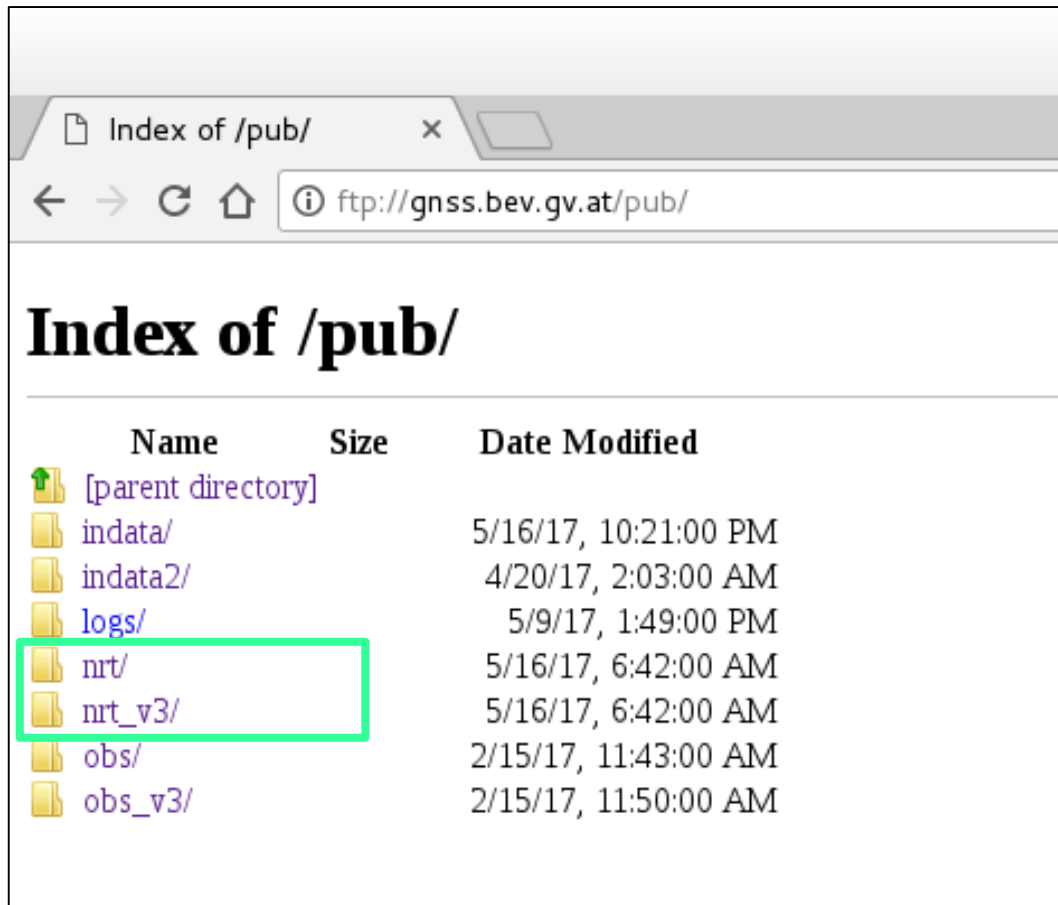
FTP Structure



The screenshot shows a web browser window with the address bar set to `ftp://gnss.bev.gv.at/pub/`. The page title is "Index of /pub/". Below the title, there is a table listing the contents of the directory. The table has three columns: "Name", "Size", and "Date Modified". The entries include a parent directory link, and several subdirectories: `indata/`, `indata2/`, `logs/`, `nrt/`, `nrt_v3/`, `obs/`, and `obs_v3/`. Each entry is preceded by a folder icon.

Name	Size	Date Modified
 [parent directory]		
 <code>indata/</code>		5/16/17, 10:21:00 PM
 <code>indata2/</code>		4/20/17, 2:03:00 AM
 <code>logs/</code>		5/9/17, 1:49:00 PM
 <code>nrt/</code>		5/16/17, 6:42:00 AM
 <code>nrt_v3/</code>		5/16/17, 6:42:00 AM
 <code>obs/</code>		2/15/17, 11:43:00 AM
 <code>obs_v3/</code>		2/15/17, 11:50:00 AM

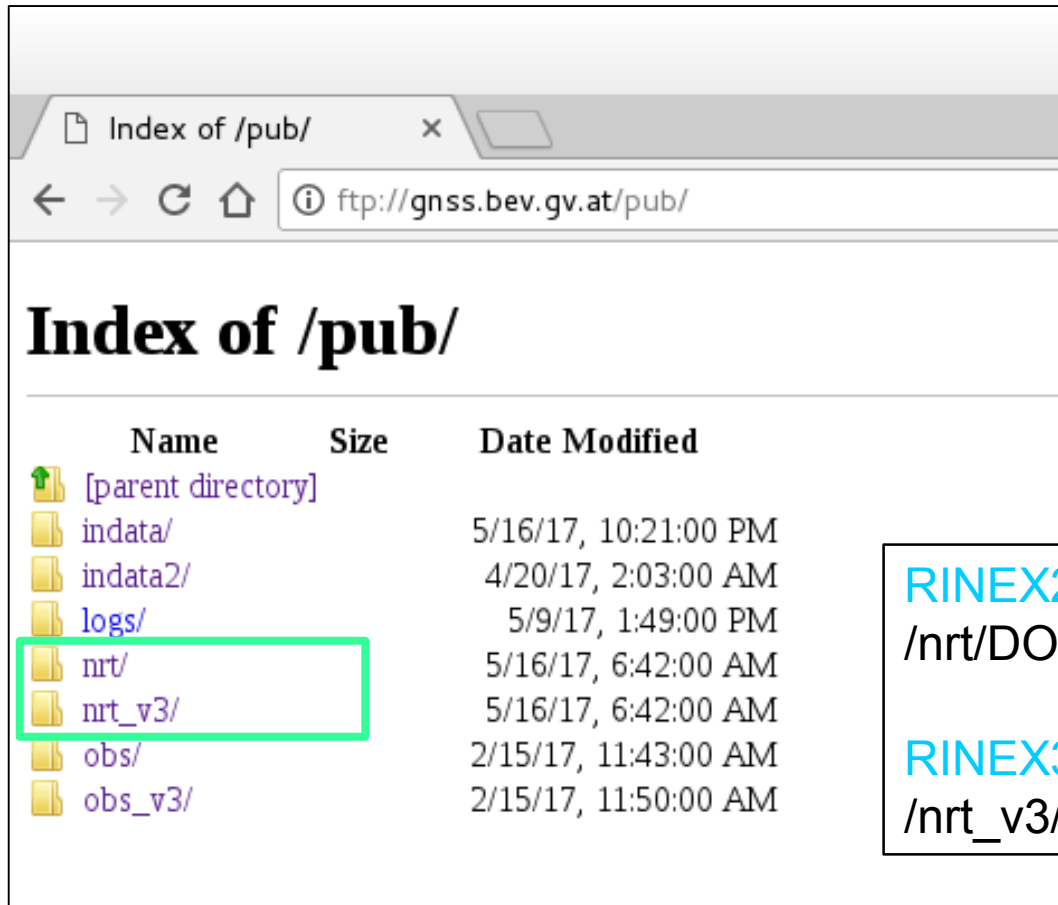
FTP Structure



The screenshot shows a web browser window with the address bar set to `ftp://gnss.bev.gv.at/pub/`. The page title is "Index of /pub/". Below the title, there is a table listing the contents of the directory. The table has three columns: "Name", "Size", and "Date Modified". The entries are: "[parent directory]", "indata/", "indata2/", "logs/", "nrt/", "nrt_v3/", "obs/", and "obs_v3/". The "nrt/" and "nrt_v3/" entries are highlighted with a green rectangular box.

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

FTP Structure



Index of /pub/

ftp://gnss.bev.gv.at/pub/

Index of /pub/

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

RINEX2 and RINEX3
/nrt/DOY/HH/

RINEX3 short names
/nrt_v3/DOY/HH/

FTP Structure

The screenshot shows a web browser window displaying the FTP directory listing for /pub/. The address bar shows the URL ftp://gnss.bev.gv.at/pub/. The directory listing includes a table with columns for Name, Size, and Date Modified. The entries are: [parent directory], indata/, indata2/, logs/, nrt/, nrt_v3/, obs/, and obs_v3/.

Name	Size	Date Modified
[parent directory]		
indata/		5/16/17, 10:21:00 PM
indata2/		4/20/17, 2:03:00 AM
logs/		5/9/17, 1:49:00 PM
nrt/		5/16/17, 6:42:00 AM
nrt_v3/		5/16/17, 6:42:00 AM
obs/		2/15/17, 11:43:00 AM
obs_v3/		2/15/17, 11:50:00 AM

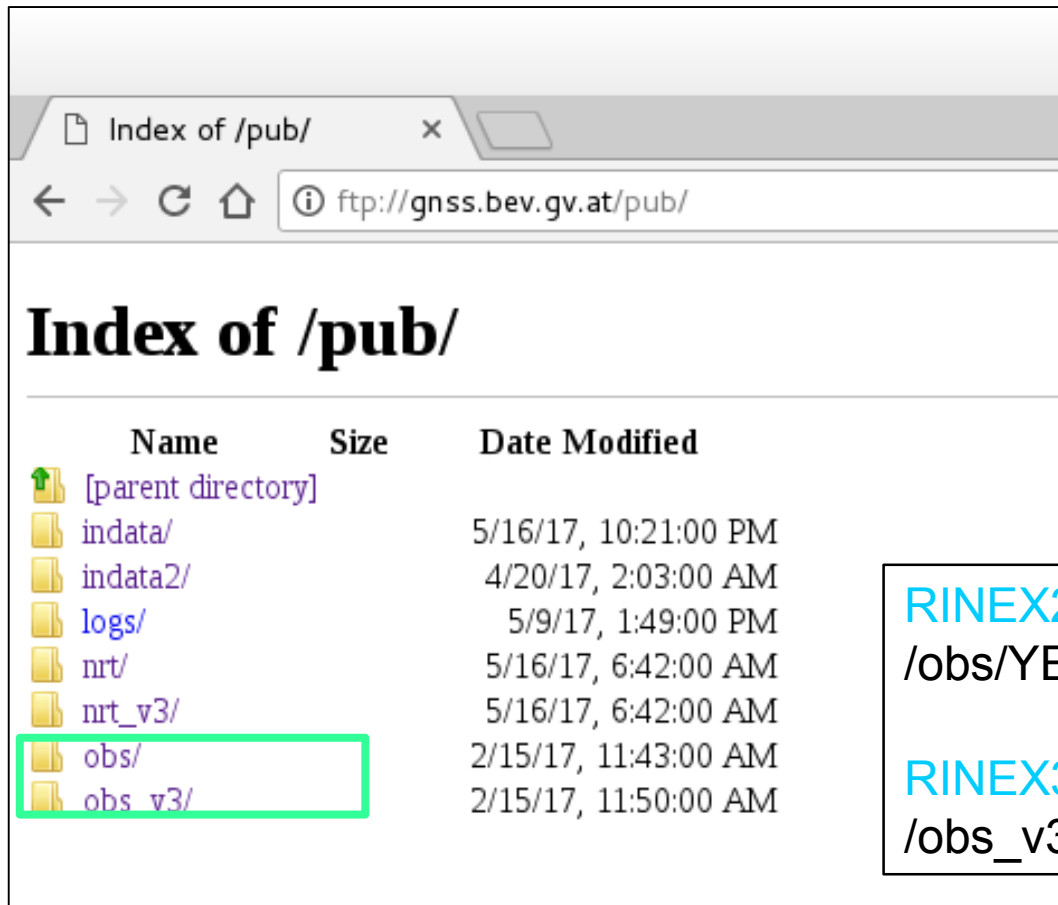
FTP Structure



The screenshot shows a web browser window with a single tab titled "Index of /pub/". The address bar contains the URL "ftp://gnss.bev.gv.at/pub/". The main content area displays the title "Index of /pub/" followed by a table of directory listings. The table has three columns: "Name", "Size", and "Date Modified". The entries are: "[parent directory]" (with a green up arrow icon), "indata/" (yellow folder icon), "indata2/" (yellow folder icon), "logs/" (yellow folder icon), "nrt/" (yellow folder icon), "nrt_v3/" (yellow folder icon), "obs/" (yellow folder icon, highlighted with a green box), and "obs_v3/" (yellow folder icon, highlighted with a green box). The "Size" column is empty for all entries.

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

FTP Structure



Index of /pub/

ftp://gnss.bev.gv.at/pub/

Index of /pub/

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

RINEX2 and RINEX3
/obs/YEAR/DOY/

RINEX3 short names
/obs_v3/YEAR/DOY/

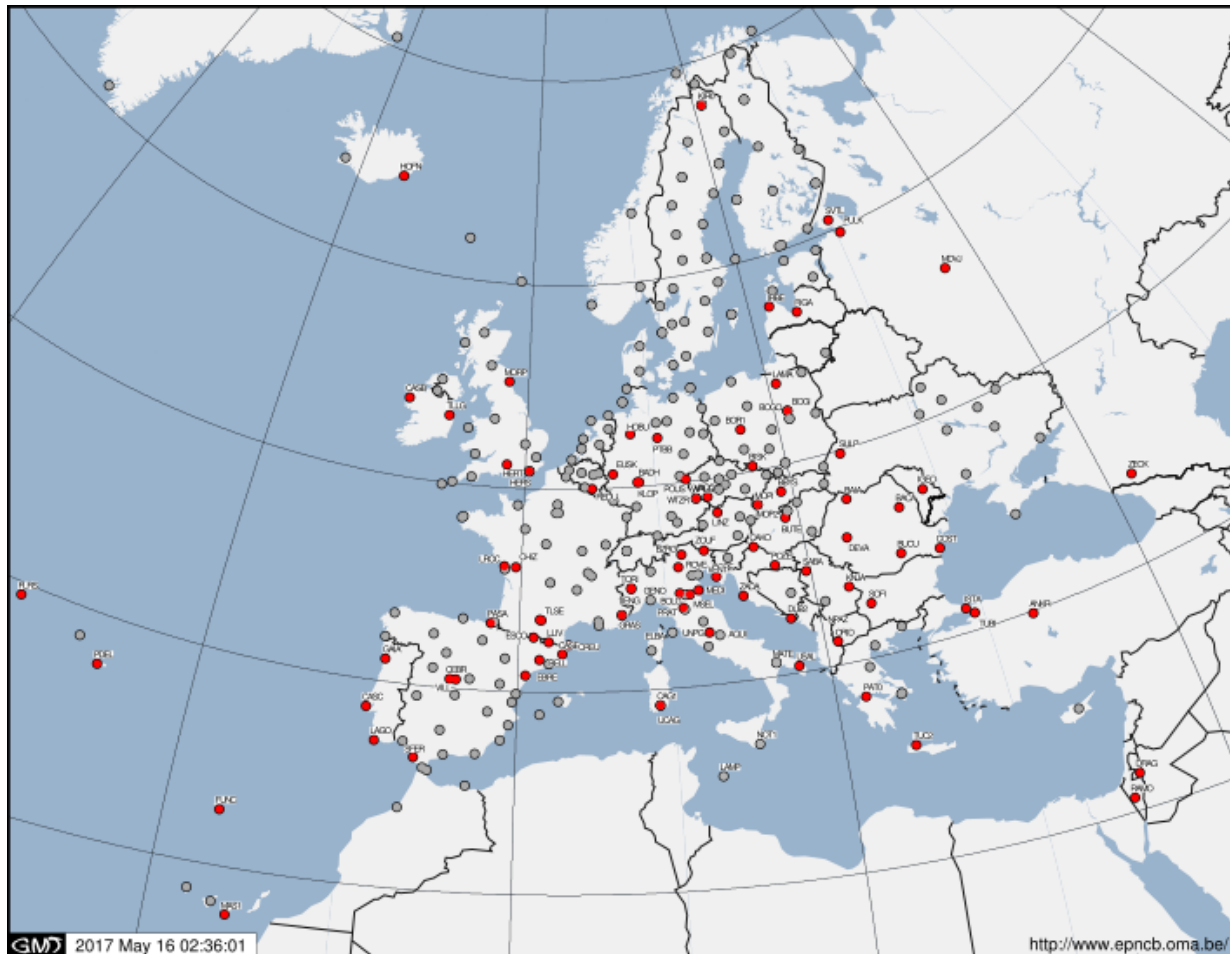
FTP Structure



The screenshot shows a web browser window with a single tab titled "Index of /pub/". The address bar contains the URL "ftp://gnss.bev.gv.at/pub/". The main content area displays the title "Index of /pub/" followed by a table of directory entries. The table has three columns: "Name", "Size", and "Date Modified". The entries are: "[parent directory]" (with a green up arrow icon), "indata/" (yellow folder icon), "indata2/" (yellow folder icon), "logs/" (yellow folder icon), "nrt/" (yellow folder icon), "nrt_v3/" (yellow folder icon), "obs/" (yellow folder icon, highlighted with a green box), and "obs_v3/" (yellow folder icon, highlighted with a green box). The "Size" column is empty for all entries.

Name	Size	Date Modified
 [parent directory]		
 indata/		5/16/17, 10:21:00 PM
 indata2/		4/20/17, 2:03:00 AM
 logs/		5/9/17, 1:49:00 PM
 nrt/		5/16/17, 6:42:00 AM
 nrt_v3/		5/16/17, 6:42:00 AM
 obs/		2/15/17, 11:43:00 AM
 obs_v3/		2/15/17, 11:50:00 AM

Situation now



92 station files are still uploaded to olggps!

Files accepted - RINEX2

GRAZ1370.17D.Z



graz1370.17d.Z



graz1370.17d.z



graz1370.17o.Z



graz1370.17o.gz



graz1370.17o



~~**graz1370.17o.[zip/bz/...]**~~



~~**graz1370.[flg/TQC/17S/...]**~~



Files accepted - RINEX3

`^(?P<stat>\w{4})(?P<monument>\d)(?P<receiver>\w)(?P<isocode>\w{3})_(?P<datasource>\w)_(?P<year>\d{4})(?P<doy>\w{3})(?P<hour>\d{2})(?P<minute>\d{2})_(?P<period>\w{3})(_(?P<steps>\w{3}))?_(?P<type>\w{2})\. (?P<format>rnx|crx|RNX|CRX)(\. (?P<compression>\w+ ))?$`

GRAZ00AUT_R_20171370000_01D_30S_MO.crx.gz



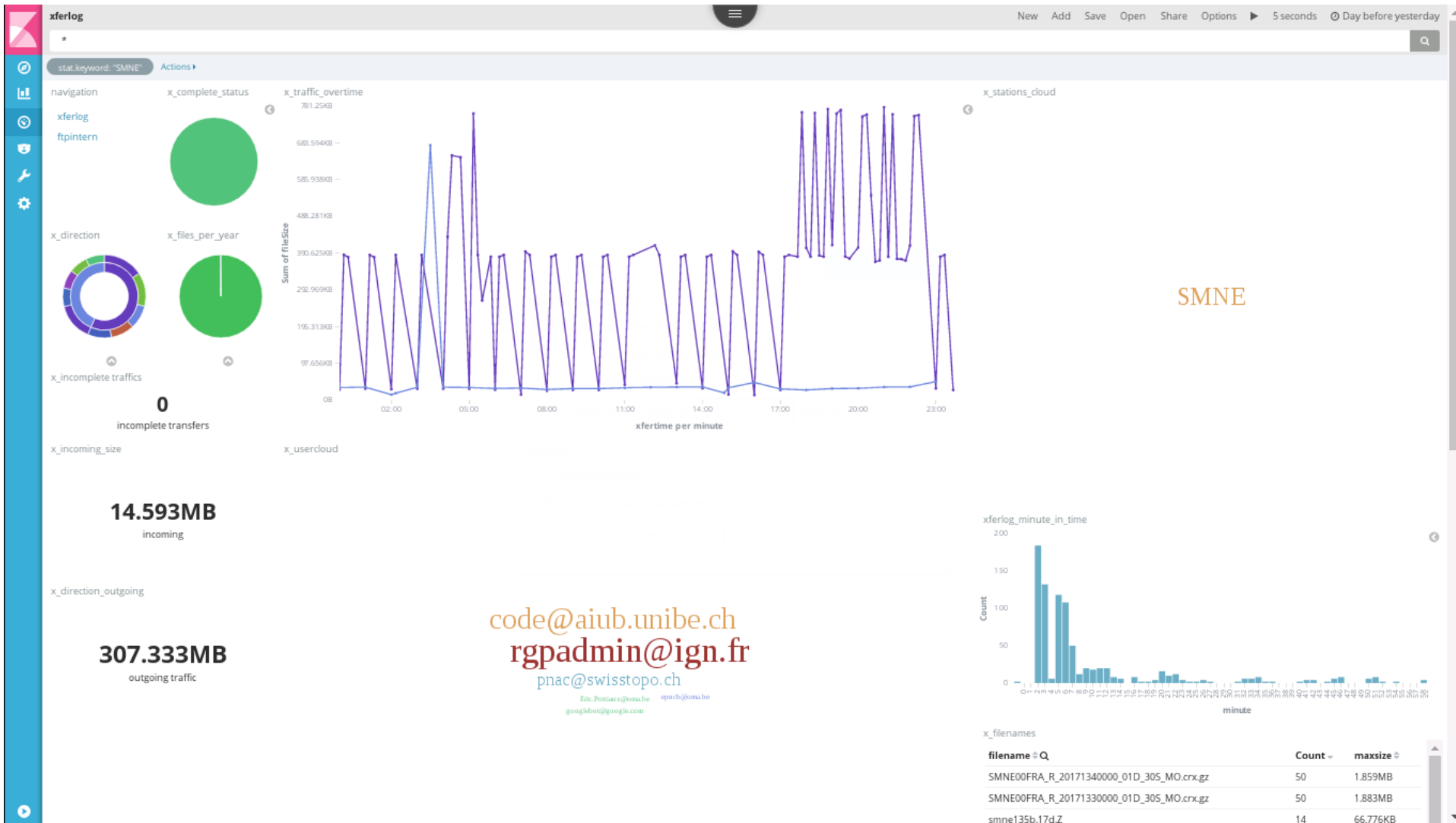
File check

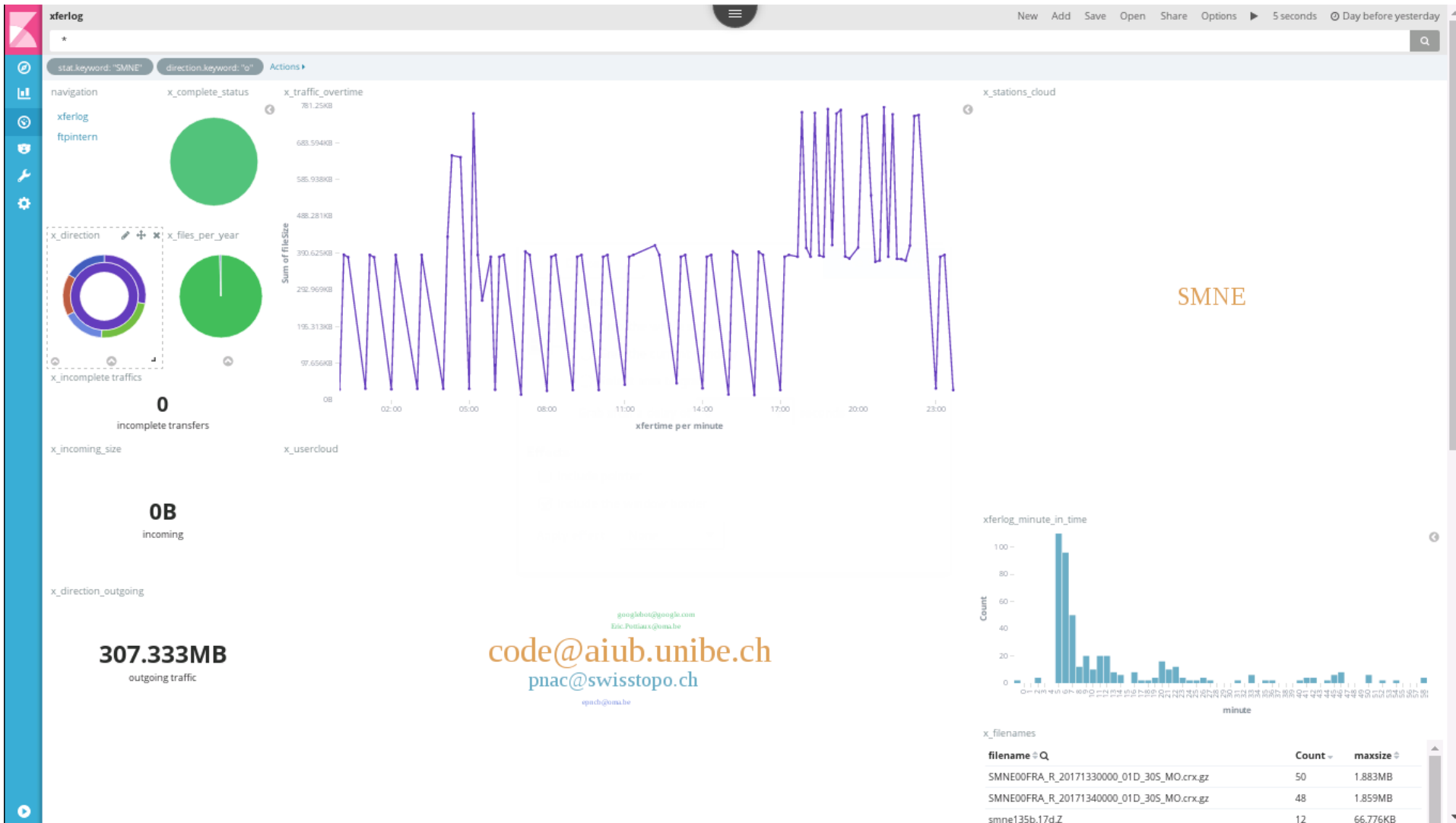
- **File size – empty files are deleted immediately**
- **RINEX?**
- **Header Check – against EPN logsheets**
- **Stationlist**

Data flow

- ~ 20 GB upload/day**
- ~ 30 GB download/day**
- ~ 300.000 file transactions - external**
- ~ 1.500.000 file transactions – internal**
- ~ 1 GB logsheets/day**
- ~ 3.5 TB rinex data**







Thank you !

philipp.mitterschiffthaler@bev.gv.at
gnss@bev.gv.at