LSF
SLIDE 1

LSF
SLIDE A

Open Source Ground Station Network

by Alfredos Damkalis

INTERNATIONAL SPACE APPS CHALLENGE

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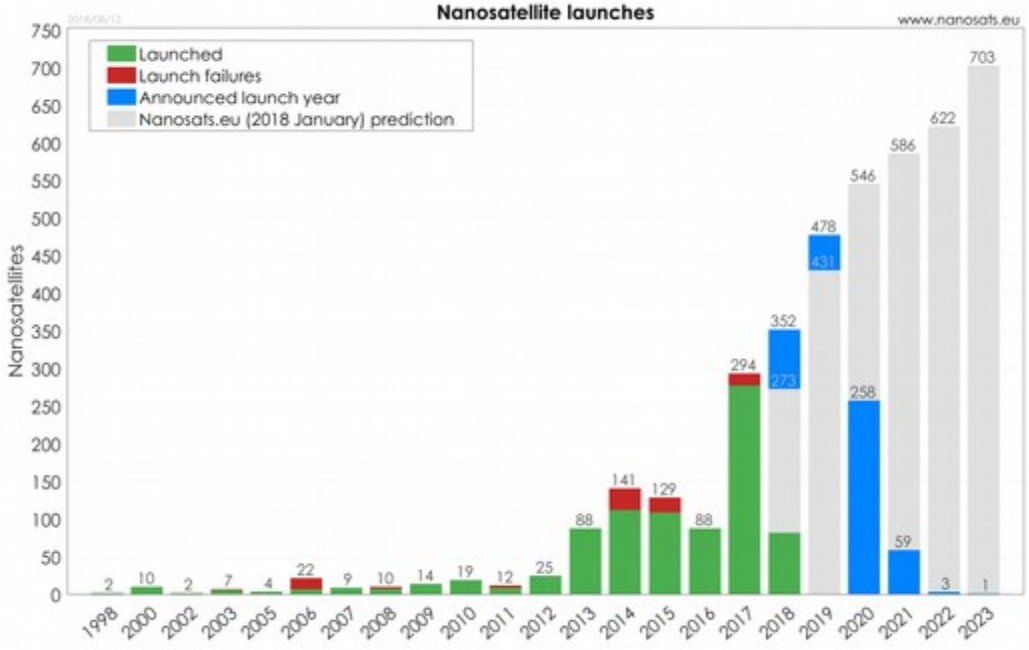
Goal of SatNOGS

Allow satellites operators and researchers to receive data from ground stations around the world by automating the whole process.



SatNOGS project

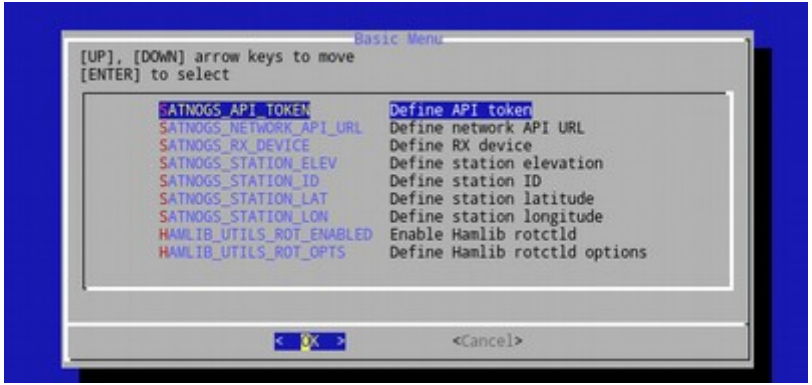
- Ground Station
  - Satnogs Rotator
  - Satnogs Client
  - Satnogs Gnuradio Scripts
- SatNOGS Network
- SatNOGS DB

SatNOGS Rotator

- Improved v3.1
- Detailed documentation in wiki.satnogs.org

SatNOGS Client

- Automatically installed and configured through ansible script
- Supporting new gnuradio scripts of gr-satnogs
- More efficient waterfall generation



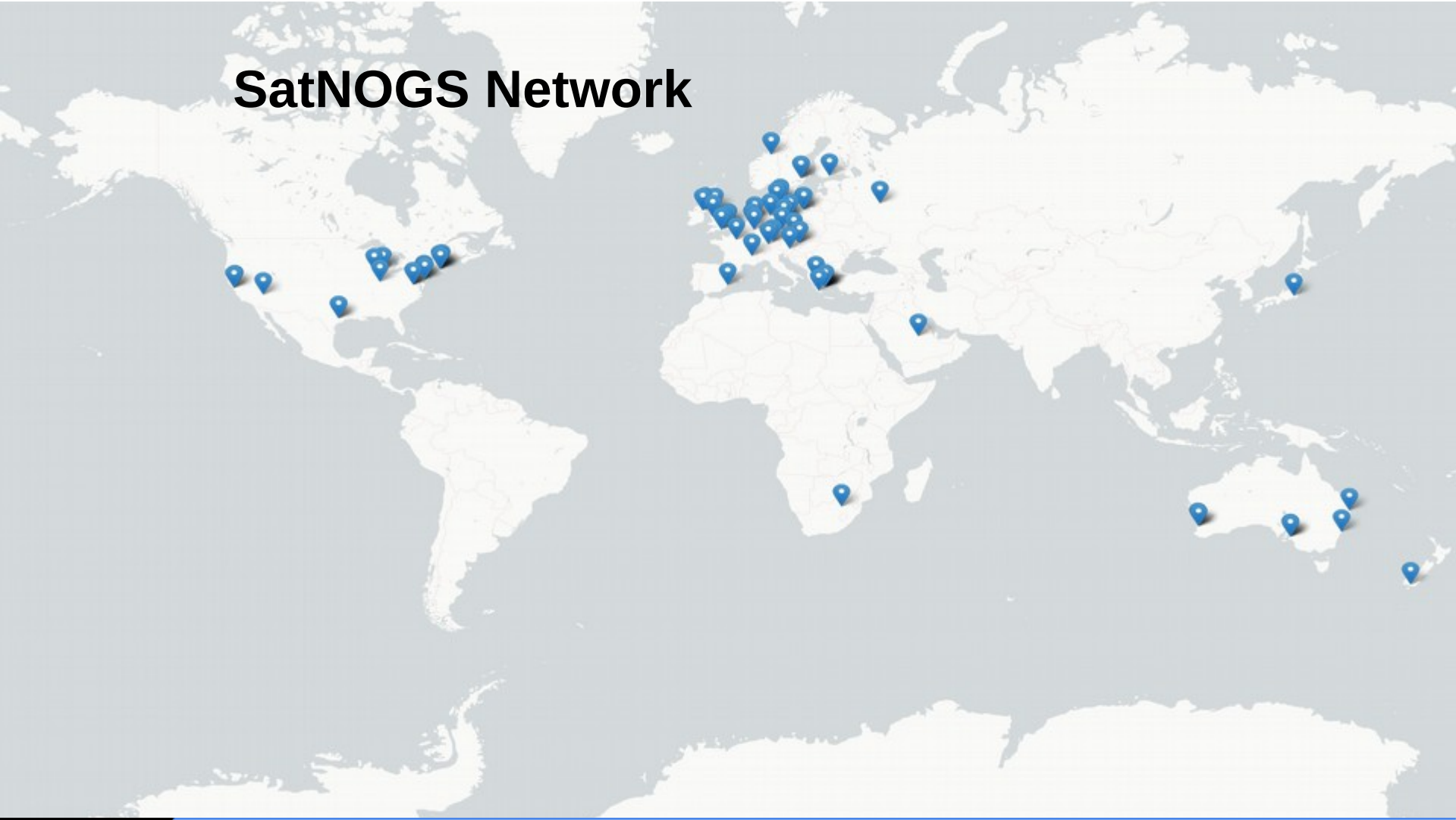
SatNOGS Gnuradio Scripts

gr-satnogs

New modes supported:

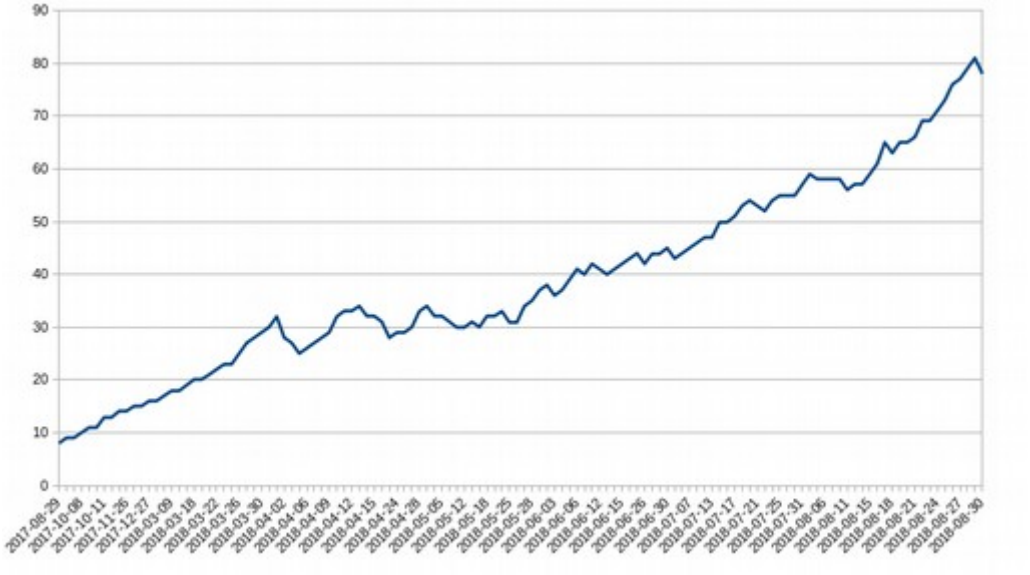
- CW
- APT
- DUV
- BPSK1200
- APRS1200 and APRS9600
- AX.25 FSK(1200-19200)
- AX.25 MSK(1200-19200)
- AX.25 AFSK(1200-9600)

SatNOGS Network



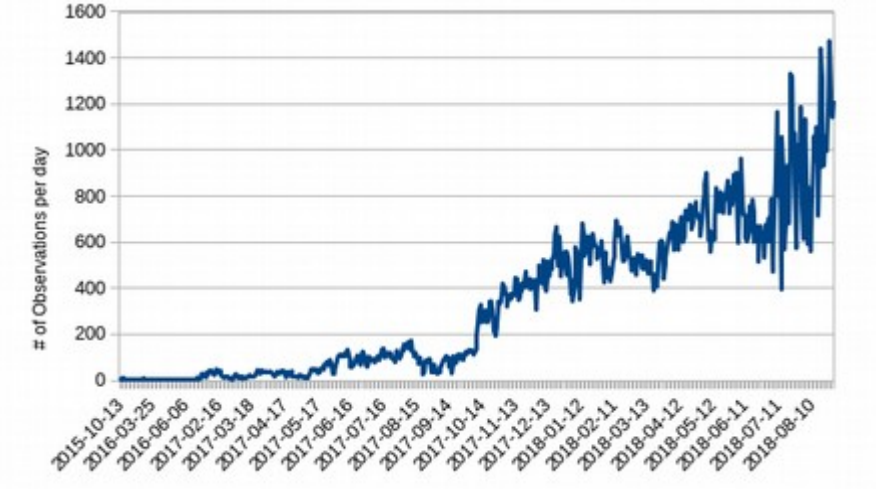
SatNOGS Network

Accumulated Number of Online Stations per Day for 1 Year

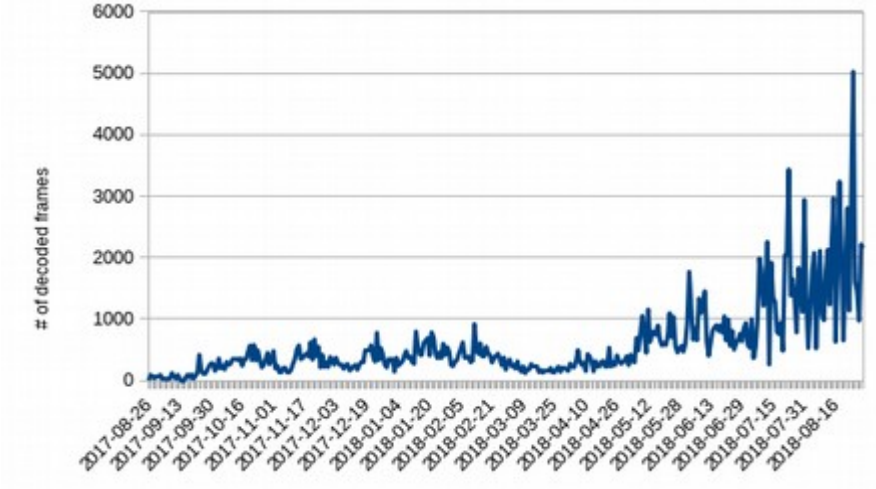


SatNOGS Network

Observations/Day for 1 Year



Decoded Frames/Day for 1 Year

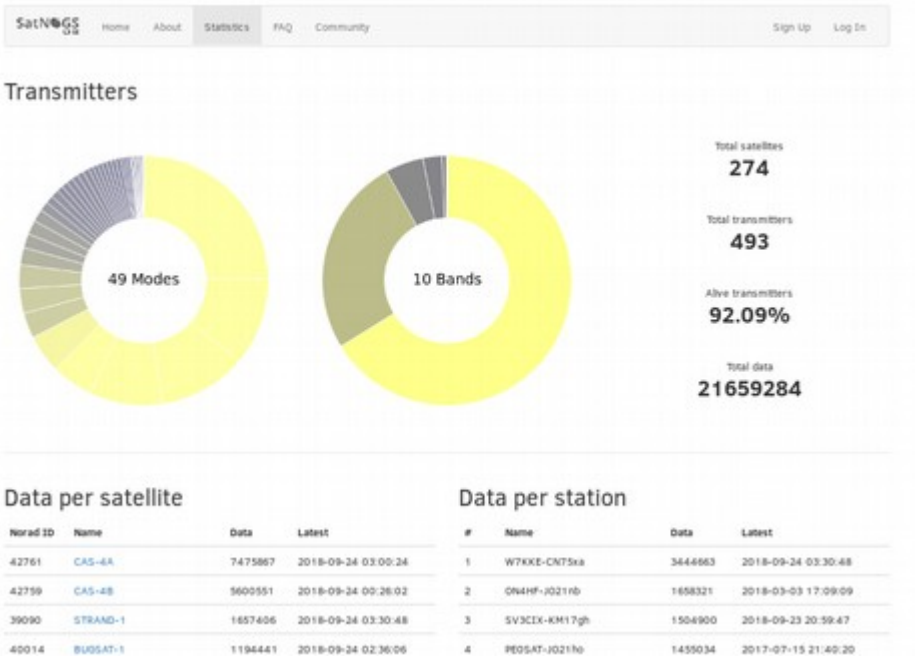


SatNOGS Network

- More than 250k observations
- More than 250k of decoded data

SatNOGS DB

- 274 Satellites
- 493 Transmitters
- 463 Contributors
- More than 21 million frames
  - DK3WN TLM Forwarder
  - Gr-satellites sids forwarder

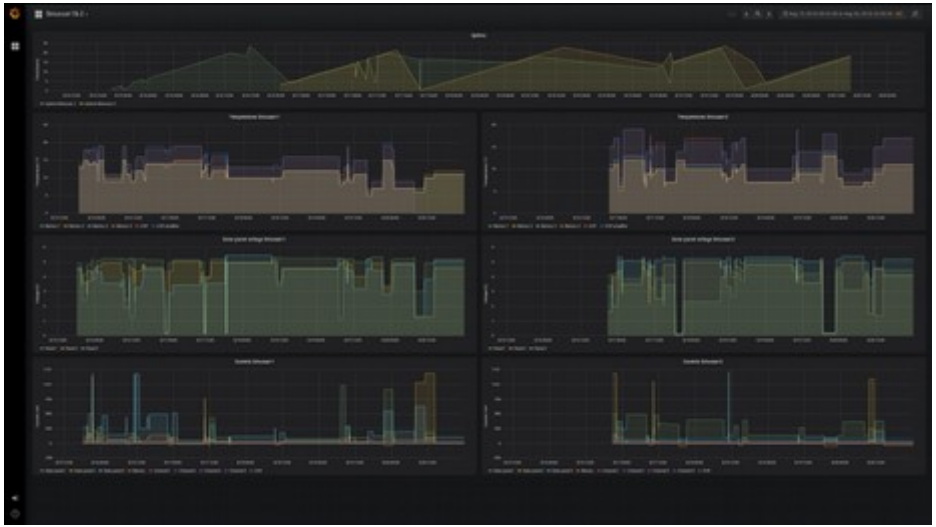


SatNOGS DB

What about network data frames?

And now what's going on with all these decoded data in DB?

SatNOGS Dashboard



- kaitai.io
- influxdb
- Grafana

SatNOGS Next Steps

- Expand network to higher frequencies (S-Band, L-BAND)
- Expand to more SDRs (via gr-soapy)
- Automate observation scheduling
- Keep growing the vibrating SatNOGS community worldwide

Join us in
https://satnogs.org

Thank you!