



# Satellite Metadata File

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## Satellite Metadata

- Satellite metadata essential for GNSS data processing
  - Unique identifier: SVN, NORADID, COSPAR ID
  - Satellite mass
  - Center of mass
  - Sensor eccentricities (navigation payload antennas, laser retroreflector arrays)
  - ...
- “IGS White Paper on Satellite and Operations Information for Generation of Precise GNSS Orbit and Clock Products” published in 2017, updated in 2020
- Publications of satellite metadata by system providers (e.g., Galileo, QZSS) and manufacturers (e.g., Lockheed Martin for GPS III)
- IGS satellite metadata file as centralized interface

# Satellite Metadata File

- Maintained by DLR/GSOC, available at [https://files.igs.org/pub/station/general/igs\\_satellite\\_metadata.snx](https://files.igs.org/pub/station/general/igs_satellite_metadata.snx)
- SINEX style format, examples available at [MGEX website](#)

Name	Description
SATELLITE/IDENTIFIER	Satellite designations (static)
SATELLITE/PRN	PRN assignment
SATELLITE/FREQUENCY_CHANNEL	GLONASS frequency channel
SATELLITE/MASS	Spacecraft mass
SATELLITE/CENTER_OF_MASS	Center-of-mass position
SATELLITE/ECCENTRICITY	Equipment positions
SATELLITE/TX_POWER	Transmit power

```

+SATELLITE/MASS
*
*SVN_ Valid_From_____ Valid_To_____ Mass_[kg]
*
E223 2021:339:00000 0000:000:00000 716.376
E224 2021:339:00000 0000:000:00000 713.182
...
J004 2021:009:82121 2021:191:38791 2297.000
J004 2021:191:38791 2022:005:64638 2287.000
J004 2022:005:64638 0000:000:00000 2278.000
  
```

## Discussion

- Draft format description distributed to WG members and available on IGS website
- Recommendation: Approval of format description by GB
- Possible extensions:
  - Active clock (already included in draft but no data yet)
  - **BAND\_POWER** and **SIGNAL\_POWER** blocks
    - already included in draft but no data yet
    - Information might be incomplete, no replacement of **TX\_POWER** block
  - Geometry and surface properties