

1 December 2021

Open Letter to the GNSS community about the new RINEX 4.00 format

RINEX 4.00 has been approved in the IGS/RTCM RINEX Working Group and adopted by the IGS in the 59th Governing Board Meeting of 7 December, 2021. This is the necessary next step for maintaining the suitability of the RINEX format to store GNSS data and measurements.

RINEX 4.00 is necessary to accommodate the modernized GNSS navigation messages. The GNSS community needs a format to store the modern navigation messages from all the GNSS constellations. RINEX 4.00 is the future-proof format for the navigation messages, and now RINEX can properly store GNSS Observations, Navigation messages and station Meteo files for the long-term future.

RINEX 4.00 Navigation files are NOT backward compatible with RINEX 3.0X files and that has caused the version number of RINEX to be increased. On the other hand, the file naming and file storage need not be changed since station navigation files of all types can be stored together in different RINEX versions without issue. All RINEX Navigation files have the version number in the first line and most readers will skip over unknown versions until they are ready to process them.

The same satellite navigation messages are received by many stations over the same time period and thus you will be able to find the navigation data in your needed format from other stations and from the available merged files in the Data Centers (brdc, BRDC00IGS, etc). The transition to RINEX 4.00 will be gradual across stations, as is usual.

The RINEX 4.00 Observation files ARE backward compatible with RINEX 3.0X and therefore there is no issue in the storage and usage of RINEX 4.00 Observation files. The RINEX 4.00 has a few minor extensions in Observation types and extended header lines but no major format change, adapting to RINEX 4.00 for Observation files is a minor evolution.

RINEX 4.00 Meteo files ARE backwards compatible. The new Meteo files have an extension for optional header lines but no major format change, adapting to RINEX 4.00 for Meteo files is a minor evolution.

The RINEX WG over this year have involved the GNSS equipment vendors as well as several of the RINEX software creators along in this process, and we have their full support so that equipment and software tools that can produce RINEX 4.00 files will be available soon.

I am available for any further questions and clarifications.

Sincerely,

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