

**Уважаемые коллеги!**

**Просим принять во внимание и четко знать, что NMEA-сентенция GGA, согласно стандарту 61162-1 в редакции 2024 года и позже, считается устаревшей, цитируем:**

*NOTE This is a deprecated sentence which has been replaced by GNS.*

*Time, position and fix-related data for a GPS receiver. All global navigation satellite system receivers, including GPS, should use the GNS sentence in new equipment designs.*

**Переводим:**

*ПРИМЕЧАНИЕ. Это устаревшее предложение, которое было заменено на GNS.*

*Данные о времени, местоположении и местоположении для GPS-приёмника.*

*Все приёмники глобальных навигационных спутниковых систем, включая GPS, должны использовать предложение GNS в новых конструкциях оборудования.*

**Внимание на эту фразу:**

*Все приёмники глобальных навигационных спутниковых систем, включая GPS, должны использовать предложение **GNS в новых конструкциях оборудования**.*

Для понимания – посылка GGA должна работать только в режиме GPS. Для кооперативной работы GPS+GLONASS+GALILEO+BEIDOU теперь есть посылка GNS, и в этом режиме GGA не должна выдаваться ГНСС-приемоиндикатором – в соответствии со стандартом.

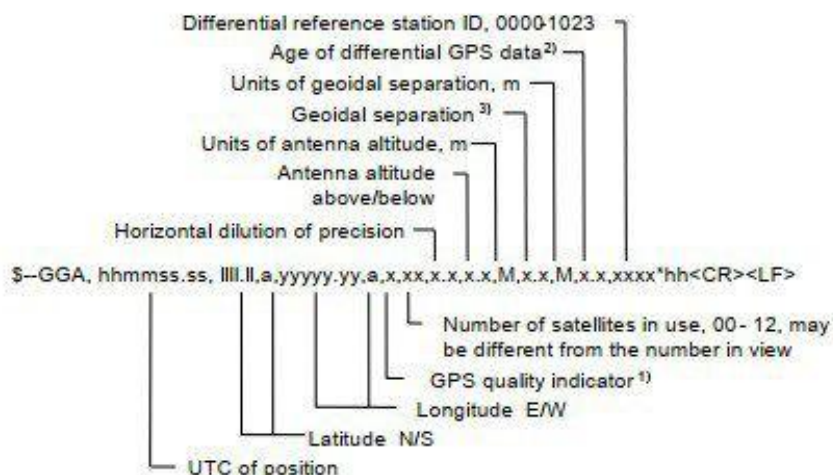
GNSS-приемоиндикаторы NGR-3000 в последних прошивках (2.06 и 2.14) выдают GGA в режиме работы со всеми ГНСС системами, хотя и не должны – это было сделано в качестве исключения, по нашей просьбе, на основе Ваших многочисленных просьб, и исключительно для оборудования для Российского рынка. Вполне возможно в новейших прошивках GGA или исчезнет, или опять станет работать в режиме исключительно GPS.

Ниже – выдержки из стандарта IEC 61162-1 2024

### 8.3.42 GGA – Global positioning system (GPS) fix data

NOTE This is a deprecated sentence which has been replaced by GNS.

Time, position and fix-related data for a GPS receiver. All global navigation satellite system receivers, including GPS, should use the GNS sentence in new equipment designs.

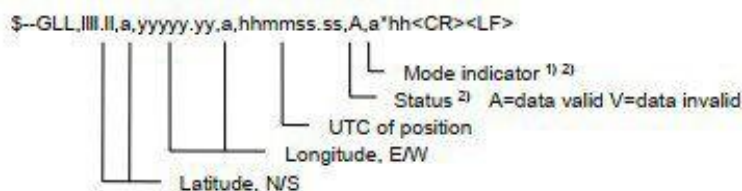


Comments:

- 1) All GPS quality indicators in headings 1 through 8 are considered "valid". The heading "0" is the only "invalid" indicator. The GPS quality indicator field shall not be a null field.
  - 0 - fix not available or invalid
  - 1 - GPS SPS mode
  - 2 - differential GPS, SPS mode
  - 3 - GPS PPS mode
  - 4 - real time kinematic. Satellite system used in RTK mode with fixed integers
  - 5 - Float RTK. Satellite system used in RTK mode with floating solution
  - 6 - Estimated (dead reckoning) mode
  - 7 - Manual Input mode
  - 8 - Simulator mode
- 2) Time in seconds since last SC104 type 1 or 9 update, null field when DGPS is not used.
- 3) Geoidal separation: the difference between the WGS-84 earth ellipsoid surface and mean sea level (geoid) surface, "-" = mean sea level surface below the WGS-84 ellipsoid surface.

### 8.3.43 GLL – Geographic position – Latitude/longitude

Latitude and longitude of vessel position, time of position fix and status. This sentence may be used for any position fix method, for example terrestrial, inertial, satellite, etc. or any combination thereof.



Comments:

1) Positioning system mode indicator:

- A - Autonomous
- D - Differential
- E - Estimated (dead reckoning)
- M - Manual Input
- S - Simulator
- N - Data not valid

Note that receiving equipment need to be careful using position based on position modes E, M and S as for various reasons they might be unsuitable for certain navigation functions.

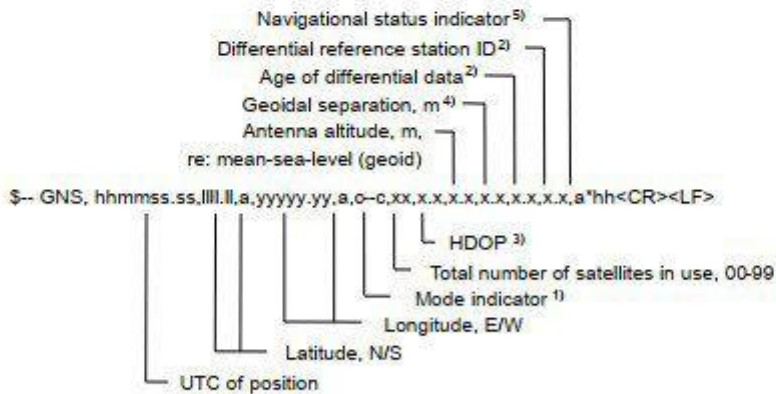
2) The mode indicator field supplements the status field (field 6). The status field shall be set to V - Invalid for all values of operating mode except for A - Autonomous, D - Differential and E - Estimated (dead reckoning) when the estimated position is valid and suitable for navigation. The positioning system mode indicator and status fields shall not be null fields.

8.3.44 GNS – GNSS fix data

Fix data for single or combined satellite navigation systems (GNSS). This sentence provides fix data for GPS, GLONASS, Galileo, BDS, QZSS, NavIC (IRNSS) and possible future satellite systems and systems combining these. This sentence could be used with the talker identification of GP for GPS, GL for GLONASS, GA for Galileo, GB for BDS, GQ for QZSS, GI for NavIC (IRNSS) and GN for GNSS combined systems, as well as future identifiers. Some fields may be null fields for certain applications, as described below.

If a GNSS receiver is capable simultaneously of producing a position using combined satellite systems, as well as a position using only one of the satellite systems, then separate \$GPGNS, \$GLGNS, etc. sentences may be used to report the data calculated from the individual systems.

If a GNSS receiver is set up to use more than one satellite system, but for some reason one or more of the systems are not available, then it may continue to report the positions using \$GNGNS, and use the mode indicator to show which satellite systems are being used.



Comments:

1) Mode Indicator. A variable length valid character field type with the first six characters currently defined. The first character indicates the use of GPS satellites, the second character indicates the use of GLONASS satellites, the third character indicates the use of Galileo satellites, the fourth character indicates the use of BDS satellites, the fifth character indicates the use of QZSS satellites and the sixth character indicates the use of NavIC (IRNSS) satellites. If another satellite system is added to the standard, the mode indicator will be extended with more characters. New satellite systems shall always be added on the right, so the order of characters in the mode indicator is: GPS, GLONASS, Galileo, BDS, QZSS, NavIC (IRNSS) and other satellite systems in the future. The characters shall take one of the following values:

- A - Autonomous. Satellite system used in non-differential mode in position fix