National Marine Electronics Association

International Marine Electronics Alliance

Technical Bulletin

ERRATA # 0183 20190515 GSV Sentence

NMEA 0183 4.11

GSV – GNSS Satellites In View

Introduction:

In the GSV – GNSS Satellites In View sentence the GNSS System Field as highlighted is incorrect. This Field should read Signal ID. This Errata found additional errors beyond the NMEA Errata #0183 20190507. The first GSV sentence below is highlighted in yellow and the with red font and strikeouts. The corrected GSV sentence shows highlight changes only. See below

- Field 4 was changed to Signal ID (Errata # 0183 20190507)
- Note 3 (d) as highlighted and stroke out was deleted
- Note 4 reflects the changes in Field 4

Incorrect Sentence

GSV – GNSS Satellites In View

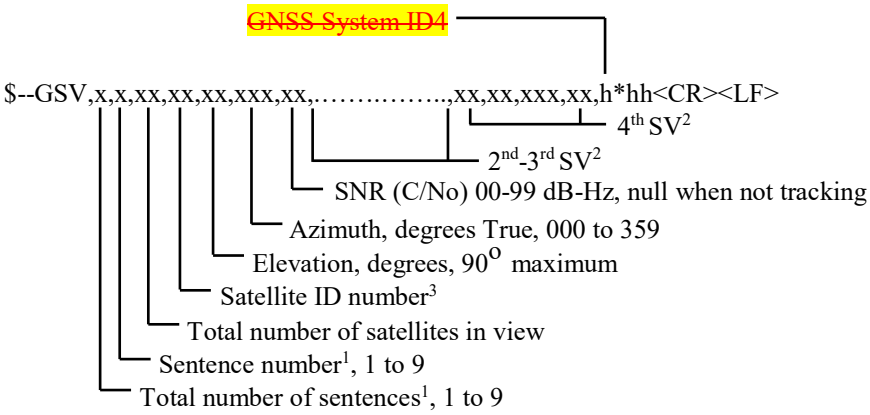
The GSV sentence provides the number of satellites (SV) in view, satellite ID numbers, elevation, azimuth, and SNR value. The GSV sentence contains four satellites maximum per transmission. The total number of sentences being transmitted and the sentence number being transmitted are indicated in the first two fields.

If multiple GPS, GLONASS, Galileo, BDS, QZSS, NavIC (IRNSS) satellites are in view, use separate GSV sentences with talker ID GP to show the GPS satellites in view, talker GL to show the GLONASS satellites in view, talker GA to show the Galileo satellites in view, talker GB to show the BDS satellites in view, talker GQ to show the QZSS satellites, and talker GI to show the NavIC (IRNSS) satellites in view, etc. When more than one ranging signal is used per satellite, separate GSV sentences with a System ID corresponding to the ranging signals shall be required. When multiple GSV sentences are necessary, use of the NMEA TAG Block structure (§ 7) and the TAG Block Sentence-grouping Parameter (§ 7.9.3) reliably links the related sentences together over any transport medium.

When GSV sentences are provided with related GRS and/or GSA sentences, use of the NMEA TAG Block structure (§ 7) and the TAG Block Sentence-grouping Parameter (§ 7.9.3) reliably links the related (different sentence formatters) sentences together over any transport medium.

To reliably identify when the satellites in view were observed a corresponding transmission of the ZDA sentence is recommended. Use of the NMEA TAG Block structure (§ 7) and the TAG Block Sentence-grouping Parameter (§ 7.9.3) reliably link the related GSV and ZDA sentences together over any transport medium.

The GN identifier shall not be used with this sentence.



Notes:

1) Satellite information may require the transmission of multiple sentences all containing identical field formats when sending a complete message. The first field specifies the total number of sentences, minimum value 1. The second field identifies the order of this sentence (sentence number), minimum value 1. For efficiency it is recommended that null fields be used in the additional sentences when the data is unchanged from the first sentence.

2) A variable number of "Satellite ID-Elevation-Azimuth-SNR" sets are allowed up to a maximum of four sets per sentence. Null fields are not required for unused sets when less than four sets are transmitted.

3) Satellite ID numbers. To avoid possible confusion caused by repetition of satellite ID numbers when using multiple satellite systems, the following convention has been adopted:

   a) GPS satellites are identified by their PRN numbers, which range from 1 to 32.

   b) The numbers 33-64 are reserved for SBAS satellites. The SBAS system PRN numbers are 120-138. The offset from NMEA SBAS SV ID to SBAS PRN number is 87. A SBAS PRN number of 120 minus 87 yields the SV ID of 33. The addition of 87 to the SV ID yields the SBAS PRN number.

   c) The numbers 65-96 are reserved for GLONASS satellites. GLONASS satellites are identified by 64+satellite slot number. The slot numbers are 1 through 24 for the full GLONASS constellation of 24 satellites, this gives a range of 65 through 88. The numbers 89 through 96 are available if slot numbers above 24 are allocated to on-orbit spares.

   ~~d) When the Talker ID is GN, the GNSS System ID provides the only method to determine the meaning of the SVIDs. GNSS System ID values of three or greater alter the meaning the SVID numbers as specified in Table 19. The GNSS System ID field shall not be null.~~

4) ~~GNSS System ID~~ according to Table 19. This field shall not be null.

Corrections :

- Field 4 was changed to Signal ID
- Note 3 (d) as highlighted and stroke out was deleted
- Note 4 reflects the changes in Field 4

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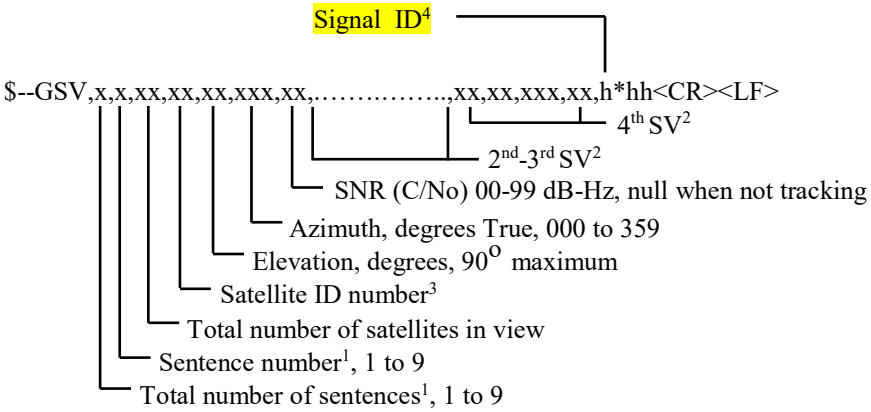
When GSV sentences are provided with related GRS and/or GSA sentences, use of the NMEA TAG Block structure (§ 7) and the TAG Block Sentence-grouping Parameter (§ 7.9.3) reliably links the related (different sentence formatters) sentences together over any transport medium.

To reliably identify when the satellites in view were observed a corresponding transmission of the ZDA sentence is recommended. Use of the NMEA TAG Block structure (§ 7) and the TAG Block Sentence-grouping Parameter (§ 7.9.3) reliably link the related GSV and ZDA sentences together over any transport medium.

The GN identifier shall not be used with this sentence.



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4) Signal ID according to Table 19. This field shall not be null.

This will be corrected in the next publication of NMEA 0183.

End of ERRATA # 0183 20190515 GSV Sentence