

CHANGE NOTICE

Affected Document: IS-GPS-800 Rev F	IRN/SCN Number IRN-IS-800F-003	Date: 10-DEC-2019
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CLASSIFIED BY: N/A
DECLASSIFY ON: N/A

Document Title: NAVSTAR GPS Space Segment/User Segment L1C Interface

RFC Title: Health Bit Clarification

Reason For Change (Driver):

The CNAV (L2C and L5) & CNAV-2 (L1C) health summary bits for L1, L2, and L5 are not clearly defined and can be interpreted in multiple ways. There are only 3 bits available to summarize multiple codes and data, so more information is needed to determine the health of each signal.

(Pre-RFC-788)

Note: Topic was previously introduced in RFC-374 (2018 Public Document Changes)

Description of Change:

1. Specify that the L1, L2, and L5 health summary bits apply to the codes and data on the carriers as described in the Signal-in-Space (SIS) documents. Requires fix to message types.
2. Clarify that the health bit indication will be given relative to the capabilities of the SV as designated by the SV Configuration code.
3. Provide a new section to provide guidance to users on how to interpret the various health indicators in SIS documents.
4. Provide SV Configuration on CNAV-2 (L1C) for users

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CODE IDENT 66RP1

IS800-251 :

Section Number :

3.5.4.3.4.0-1

WAS :

The three, one-bit, health indication in bits 44, 45 and 46 of subframe 3, page 4 and bits 31, 32 and 33 of each packet of reduced almanac refers to the L1, L2, and L5 signals of the SV whose PRN number is specified in the message or in the packet. For each health indicator, a "0" signifies that all signals on the associated frequency are okay and "1" signifies that some or all signals on the associated frequency are bad. The predicted health data will be updated at the time of upload when a new midi almanac or reduced almanac has been built by the CS. The transmitted health data may not correspond to the actual health of the transmitting SV or other SVs in the constellation.

Redlines :

The three, one-bit, health indication in bits 44, 45 and 46 of subframe 3, page 4 and bits 31, 32 and 33 of each packet of reduced almanac refers to the L1, L2, and L5 signalscarrier of the SV whose PRN number is specified in the message or in the packet. ~~For~~ These health indication bits only apply to codes and data as defined in IS-GPS-200, IS-GPS-705, and IS-GPS-800.

The health of each healthcarrier indicator, is indicated "by:

_____ 0" signifies= that Some or all signals codes on and the data associated on frequency this carrier are okay OK,

_____ 1 = All codes and "1" data signifies on that this some carrier are bad or all unavailable.

The ~~signals~~health on bit indication shall be given relative to the ~~associated~~capabilities ~~frequency~~of ~~are~~each ~~bad~~SV as designated by the configuration code in the LNAV message (see paragraph 20.3.3.5.1.4 of IS-GPS-200) or the CNAV-2 message (see paragraph 3.5.4.7). Accordingly, the health bit for any SV which does not have a certain capability will be indicated as "healthy" if the lack of this capability is inherent in its design or if it has been configured into a mode which is normal from a user standpoint and does not require that capability; however, the Operating Command may choose to set the health bit "unhealthy" for an SV without a certain capability. Users who have not received or choose not to use configuration code should assume that every signal is available on every SV. The predicted health data will be updated at the time of upload when a new ~~midi almanac or CEI reduced~~data almanac~~set~~ has been built by the CS. ~~Therefore, The~~the transmitted health data may not correspond to the actual health of the transmitting SV. ~~or~~For other more SVsinformation inabout theuser constellation protocol for interpreting health indications see paragraph 6.4.5.

IS :

The three, one-bit, health indication in bits 44, 45 and 46 of subframe 3, page 4 and bits 31, 32 and 33 of each packet of reduced almanac refers to the L1, L2, and L5 carrier of the SV whose PRN number is specified in the message or in the packet. These health indication bits only apply to codes and data as defined in IS-GPS-200, IS-GPS-705, and IS-GPS-800.

The health of each carrier is indicated by:

0 = Some or all codes and data on this carrier are OK,

1 = All codes and data on this carrier are bad or unavailable.

The health bit indication shall be given relative to the capabilities of each SV as designated by the configuration code in the LNAV message (see paragraph 20.3.3.5.1.4 of IS-GPS-200) or the CNAV-2 message (see paragraph 3.5.4.7).

Accordingly, the health bit for any SV which does not have a certain capability will be indicated as “healthy” if the lack of this capability is inherent in its design or if it has been configured into a mode which is normal from a user standpoint and does not require that capability; however, the Operating Command may choose to set the health bit “unhealthy” for an SV without a certain capability. Users who have not received or choose not to use configuration code should assume that every signal is available on every SV. The predicted health data will be updated at the time of upload when a new CEI data set has been built by the CS. Therefore, the transmitted health data may not correspond to the actual health of the transmitting SV. For more information about user protocol for interpreting health indications see paragraph 6.4.5.

IS800-1016 :

Insertion after object IS800-867:

6.4.4 PRNs 33 through 63**Section Number :**

6.4.5

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS :

User Protocol for Signal Availability and Health Information

IS800-1019 :

Insertion below object IS800-1016

Section Number :

6.4.5.0-1

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS :

See paragraph 6.4.6 of IS-GPS-200.

IS800-1024 :

Insertion after object IS800-1019

Section Number :

6.4.5.1

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS :

Alarm Indications

IS800-1025 :

Insertion below object IS800-1024

Section Number :

6.4.5.1.1

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS :

Specific Alarm Indications

IS800-1026 :

Insertion below object IS800-1025

Section Number :

6.4.5.1.1.0-1

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS :

(Reserved)

IS800-1027 :

Insertion after object IS800-1024

Section Number :

6.4.5.2

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS :

“Marginal” Indications.

IS800-1028 :

Insertion below object IS200-1027

Section Number :

6.4.5.2.0-1

WAS :

N/A

Redlines :

<INSERTED OBJECT>

IS:

(Reserved)
