## CHANGE NOTICE

| Affected Document:<br>IS-GPS705 Rev J | IRN/SCN Number<br>XXX-XXXX-XXX | Date:<br>DD-MMM-YYYY |
|---|---|---|
| Authority:<br>RFC-00495 | Proposed Change Notice<br>PCN-IS-705J_RFC495 | Date:<br>11-MAY-2022 |

**Document Title:** NAVSTAR GPS Space Segment/User Segment L5 Interfaces

**RFC Title:** 2022 Proposed Changes to the Public Documents

**Reason For Change (Driver):**
1. Change Pconst to Rconst and MFDconst in the CNAV and CNAV2 Integrity Support Message. The rate of unalerted constellation failures (Rconst) and the mean duration of these failures (MFDconst) characterize such failures better than the probability of an unalerted constellation failure at any given time. (Pre- RFC-1200)
2. Implement Administrative Fixes needed on any document otherwise affected by the solutions to the above problem.

**Description of Change**:
1. Rework Pconst to Rconst and MFDconst in all affected documents
2. Provide clarity and clean up identified administrative changes in all affected documents IS-GPS-200, IS-GPS-705 and IS-GPS-800.

**Authored By: RE:** Tony Anthony                    **Checked By: RE:** Christopher J. Adams

| AUTHORIZED SIGNATURES | REPRESENTING | DATE |
|---|---|---|
| | PNT Technical Director, MilComm & PNT Directorate,<br>Space Systems Command (SSC) | |

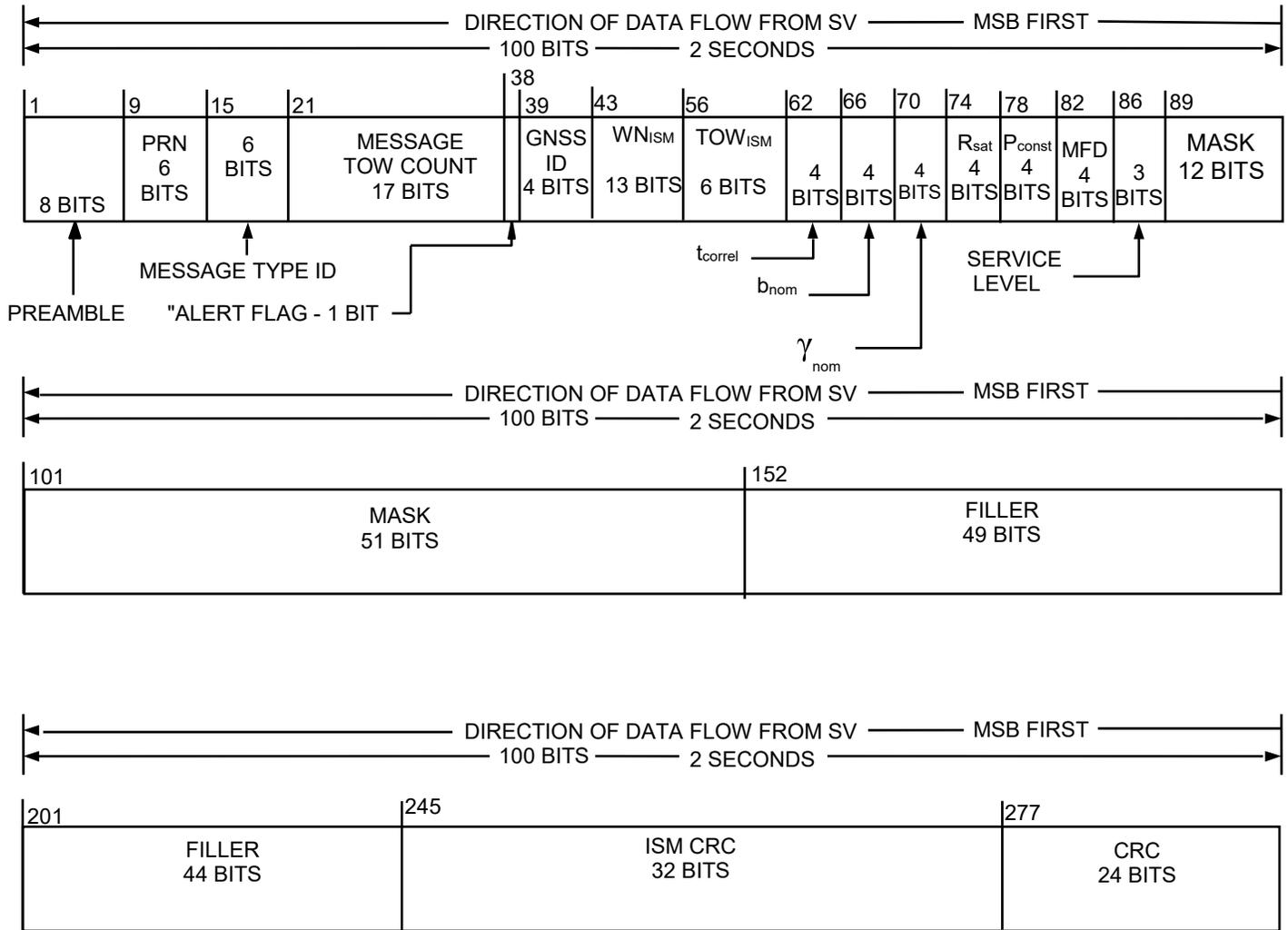DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution Is Unlimited

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CODE IDENT 66RP1

**IS705-1606**:

**Section Number**:
20.3.3.0-30
**WAS**:

DIRECTION OF DATA FLOW FROM SV — MSB FIRST
100 BITS — 2 SECONDS

| 1 | 9 | 15 | 21 | 38/39 | 43 | 56 | 62 | 66 | 70 | 74 | 78 | 82 | 86 | 89 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 BITS | PRN 6 BITS | 6 BITS | MESSAGE TOW COUNT 17 BITS | GNSS ID 4 BITS | $WN_{ISM}$ 13 BITS | $TOW_{ISM}$ 6 BITS | 4 BITS | 4 BITS | 4 BITS | $R_{sat}$ 4 BITS | $P_{const}$ 4 BITS | MFD 4 BITS | 3 BITS | MASK 12 BITS |

PREAMBLE
MESSAGE TYPE ID
"ALERT FLAG - 1 BIT
$t_{correl}$
$b_{nom}$
$\gamma_{nom}$
$R_{sat}$ $P_{const}$ MFD
SERVICE LEVEL

DIRECTION OF DATA FLOW FROM SV — MSB FIRST
100 BITS — 2 SECONDS

| 101 | 152 |
|---|---|
| MASK 51 BITS | FILLER 49 BITS |

DIRECTION OF DATA FLOW FROM SV — MSB FIRST
100 BITS — 2 SECONDS

| 201 | 245 | 277 |
|---|---|---|
| FILLER 44 BITS | ISM CRC 32 BITS | CRC 24 BITS |

\* MESSAGE TOW COUNT = 17 MSBs OF ACTUAL TOW COUNT AT START OF NEXT 6-SECOND MESSAGE

**Redlines**:
<not available for graphics>
- $MFD_{sat}$ has been added, pushing the other fields to the "right" 4 bits.
- $P_{const}$ has been replaced with $R_{const}$, which is a rate instead of a probability.
- MFD has been renamed $MFD_{const}$ to differentiate it from the mean duration of a satellite fault
- FILLER at 93 bits has been renamed RESERVED FOR ISM at 89 bits.

**IS**:



* MESSAGE TOW COUNT = 17 MSBs OF ACTUAL TOW COUNT AT START OF NEXT 6-SECOND MESSAGE
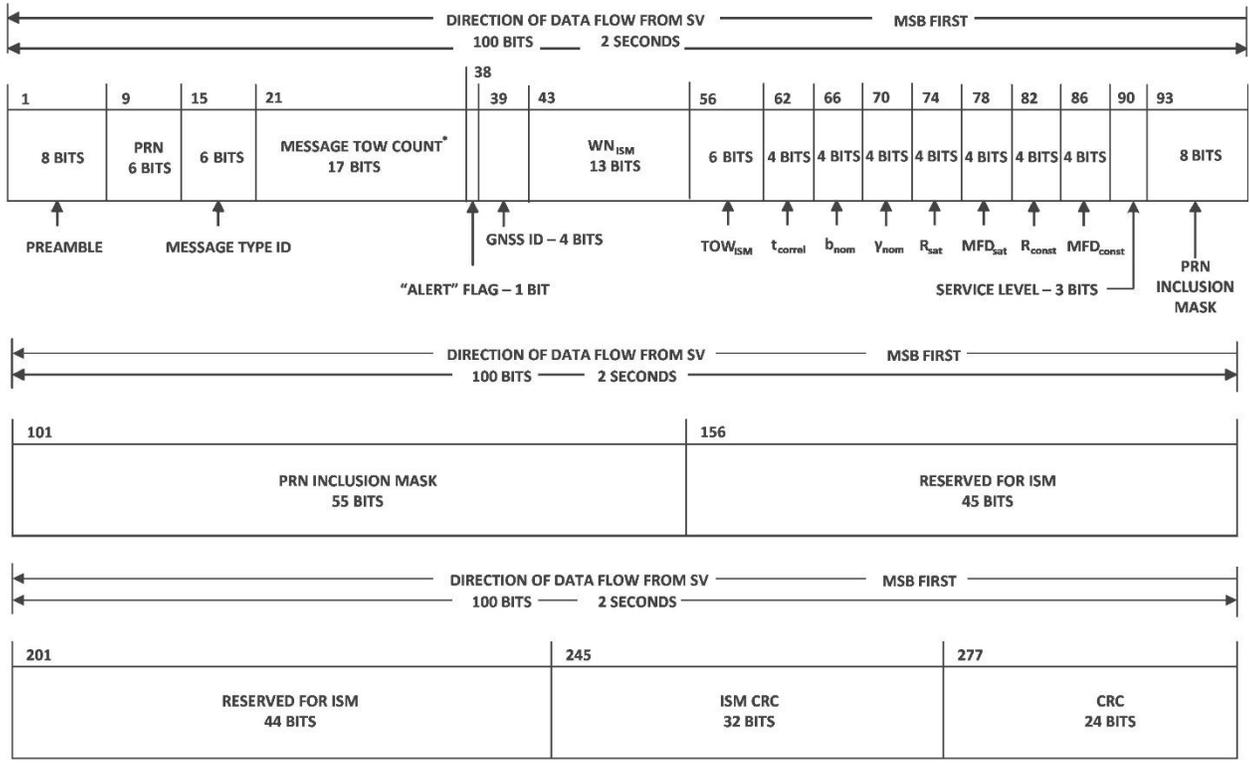
**Rationale**:

As part of the Pconst to Rconst Conversion, the figure needs adjustment of "Pxxx" to "Rxxx" and "MFDxxx" (T. Anthony)

**IS705-1618**:

**Section Number**:
20.3.3.10.1.0-6
**WAS**:

| Parameter | No. of Bits** | Scale Factor (LSB) | Valid Range*** | Units |
|---|---|---|---|---|
| GNSS ID | 4 | | | |
| $WN_{ISM}$ | 13 | 1 | | weeks |
| $TOW_{ISM}$ | 6 | 4 | 0 to 164 | hours |
| $t_{correl}$ | 4 | | 0 to 12 | hours |
| $b_{nom}$ | 4 | | 0 to 2 | meters |
| $\gamma_{nom}$ | 4 | | 0 to 2 | |
| $R_{sat}$ | 4 | | $1 \times 10^{-3}$ to $3.16 \times 10^{-10}$ | /hours |
| $P_{const}$ | 4 | | $1 \times 10^{-3}$ to $3.16 \times 10^{-10}$ | |
| MFD | 4 | | 0.25 to 24 | hours |
| Service Level* | 3 | | | |
| Mask**** | 63 | | | |

* See Table 20-XIb for Service Level Descriptions

** See Figure 20-14a for complete bit allocation in Message Type 40

*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor

**** See Table 20-XIc for Mask bit mapping

**Redlines**:

| Parameter | No. of Bits*~~*~~ | Scale Factor (LSB) | Valid Range**~~*~~ | Units |
|---|---|---|---|---|
| GNSS ID | 4 | | See text | |
| WN$_{ISM}$ | 13 | 1 | 0 to 8191 | weeks |
| TOW$_{ISM}$ | 6 | 4 | 0 to 164 | hours |
| t$_{correl}$ | 4 | | ~~0 to 12~~ See text | ~~hours~~ |
| b$_{nom}$ | 4 | | ~~0 to 2~~ See text | ~~meters~~ |
| γ$_{nom}$ | 4 | | ~~0 to 2~~ See text | |
| R$_{sat}$ | 4 | | ~~1x10$^{-3}$ to 3.16x10$^{-10}$~~ See text | ~~/hours~~ |
| MFD$_{sat}$ | 4 | | See text | |
| ~~P~~R$_{const}$ | 4 | | See text | |
| MFD$_{const}$ | 4 | | ~~0.25 to 24~~ See text | ~~hours~~ |
| Service Level*~~**~~ | 3 | | See text | |
| PRN Inclusion Mask **** | 63 | | See text | |

\* See Figure 30-14a for complete bit allocation in Message Type 40

\*\* Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor

\*\*\* See Table 30-XIb for Service Level Descriptions

\*\*\*\* See Table 30-XIc for PRN Inclusion Mask bit mapping

**IS**:

| Parameter | No. of Bits* | Scale Factor (LSB) | Valid Range** | Units |
|---|---|---|---|---|
| GNSS ID | 4 | | See text | |
| WN$_{ISM}$ | 13 | 1 | 0 to 8191 | weeks |
| TOW$_{ISM}$ | 6 | 4 | 0 to 164 | hours |
| t$_{correl}$ | 4 | | See text | |
| b$_{nom}$ | 4 | | See text | |
| γ$_{nom}$ | 4 | | See text | |
| R$_{sat}$ | 4 | | See text | |
| MFD$_{sat}$ | 4 | | See text | |
| R$_{const}$ | 4 | | See text | |
| MFD$_{const}$ | 4 | | See text | |
| Service Level*** | 3 | | See text | |
| PRN Inclusion Mask **** | 63 | | See text | |

\* See Figure 20-14a for complete bit allocation in Message Type 40

\*\* Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor

\*\*\* See Table 20-XIb for Service Level Descriptions

\*\*\*\* See Table 20-XIc for PRN Inclusion Mask bit mapping

**Rationale**:
As part of the Pconst to Rconst Conversion, the table needs adjustment of "Pxxx" to "Rxxx" and "MFDxxx" (T. Anthony)
CRM #10, CRM #25 5/9/22 Upgrade to PRN Inclusion Mask (T. Anthony)
5/18/2022 CRM #2 Restored the 2nd note to "Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor" because th replacement note alluded to the existence of RSAM, which we decided to not document in public documents during RFC-444 (T. Anthony)

**IS705-1644**:

**Section Number**:
20.3.3.10.1.7.0-1
**WAS**:
Bits 74 through 77 of Message Type 40 shall provide the assumed Satellite Fault Rate ($R_{sat}$) value for ARAIM at the current time for the associated GNSS constellation.
**Redlines**:
Bits 74 through 77 of Message Type 40 shall provide the assumed ~~Satellite~~satellite ~~Fault~~fault ~~Rate~~rate (Rsat) value for ARAIM at the current time for the associated GNSS constellation.
**IS**:
Bits 74 through 77 of Message Type 40 shall provide the assumed satellite fault rate ($R_{sat}$) value for ARAIM at the current time for the associated GNSS constellation.
**Rationale**:
CRM #3 4/26/2022 uncapitalize "satellite fault rate"  (T. Anthony)

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**IS705-1740**:
Insertion after object IS705-1643
**Section Number**:
20.3.3.10.1.8
**WAS**:
<INSERTED OBJECT>
**Redlines**:
*Object Heading 20.3.3.10.1.8* Mean Duration of a Satellite Fault
*Object Type*: Header
**IS**:
*Object Heading 20.3.3.10.1.8* Mean Duration of a Satellite Fault
*Object Type*: Header
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has added MFDsat. (T. Anthony)
CRM #31 4/26/2022 The precedent was set in RFC-450 to expand MFD to mean duration of a xxx fault.  (T. Anthony)

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**IS705-1741**:
Insertion below object IS705-1740
**Section Number**:
20.3.3.10.1.8.0-1
**WAS**:
<INSERTED OBJECT>
**Redlines**:
Bits 78 through 81 of Message Type 40 shall provide the assumed mean duration of a satellite fault (MFDsat) value for ARAIM at the current time for the associated GNSS constellation.
*Object Type*: Requirement
**IS**:
Bits 78 through 81 of Message Type 40 shall provide the assumed mean duration of a satellite fault ($MFD_{sat}$) value for ARAIM at the current time for the associated GNSS constellation.
*Object Type*: Requirement
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has added MFDsat. (T. Anthony)
CRM #31 4/26/2022 The precedent was set in RFC-450 to expand MFD to mean duration of a xxx fault.  (T. Anthony)

**IS705-1742**:
Insertion after object IS705-1741
**Section Number**:
20.3.3.10.1.8.0-2
**WAS**:
<INSERTED OBJECT>
**Redlines**:
The four bits are defined as follows:
0000 = 0.25 hours
0001 = 0.33 hours
0010 = 0.50 hours
0011 = 0.67 hours
0100 = 0.83 hours
0101 = 1 hour
0110 = 1.25 hours
0111 = 1.50 hours
1000 = 1.75 hours
1001 = 2 hours
1010 = 3 hours
1011 = 4 hours
1100 = 7 hours
1101 = 10 hours
1110 = 17 hours
1111 = 24 hours
*Object Type*: Info-Only
**IS**:
The four bits are defined as follows:
0000 = 0.25 hours
0001 = 0.33 hours
0010 = 0.50 hours
0011 = 0.67 hours
0100 = 0.83 hours
0101 = 1 hour
0110 = 1.25 hours
0111 = 1.50 hours
1000 = 1.75 hours
1001 = 2 hours
1010 = 3 hours
1011 = 4 hours
1100 = 7 hours
1101 = 10 hours
1110 = 17 hours
1111 = 24 hours
*Object Type*: Info-Only
**Rationale**:
As part of the Pconst to Rconst Conversion, this lexicon has had to move as part of a paragraphing re-ordering action.
(T.Anthony)

**IS705-1631**:

**Section Number**:
20.3.3.10.1.9
**WAS**:
*Object Heading 20.3.3.10.1.9* Constellation Fault Probability
**Redlines**:
*Object Heading 20.3.3.10.1.9* Constellation Fault ~~Probability~~Rate
**IS**:
*Object Heading 20.3.3.10.1.9* Constellation Fault Rate
**Rationale**:
As part of Pconst to Rconst Conversion, the message probabilities have changed to rates. (T. Anthony)

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**IS705-1632**:

**Section Number**:
20.3.3.10.1.9.0-1
**WAS**:
Bits 78 through 81 of Message Type 40 shall provide the assumed Constellation Fault Probability ($P_{const}$)value for ARAIM at the current time for the associated GNSS constellation.
**Redlines**:
Bits ~~78~~82 through ~~81~~85 of Message Type 40 shall provide the assumed ~~Constellation~~constellation ~~Fault~~fault ~~Probability~~rate (~~Pconst~~Rconst) value for ARAIM at the current time for the associated GNSS constellation.
**IS**:
Bits 82 through 85 of Message Type 40 shall provide the assumed constellation fault rate ($R_{const}$) value for ARAIM at the current time for the associated GNSS constellation.
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has changed and probabilities have changed to rates. (T. Anthony)

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**IS705-1633**:

**Section Number**:
20.3.3.10.1.9.0-2

**WAS**:

The four bits are defined as follows:

$0000 = 3.16 \times 10^{-3}$
$0001 = 1 \times 10^{-3}$
$0010 = 3.16 \times 10^{-4}$
$0011 = 1 \times 10^{-4}$
$0100 = 3.16 \times 10^{-5}$
$0101 = 1 \times 10^{-5}$
$0110 = 3.16 \times 10^{-6}$
$0111 = 1 \times 10^{-6}$
$1000 = 3.16 \times 10^{-7}$
$1001 = 1 \times 10^{-7}$
$1010 = 3.16 \times 10^{-8}$
$1011 = 1 \times 10^{-8}$
$1100 = 3.16 \times 10^{-9}$
$1101 = 1 \times 10^{-9}$
$1110 = 3.16 \times 10^{-10}$
$1111 = \text{RESERVED}$

**Redlines**:

The four bits are defined as follows:

$0000 = 3.16 \times 10^{-\cancel{3}4}$ /hour
$0001 = 1 \times 10^{-\cancel{3}4}$ /hour
$0010 = 3.16 \times 10^{-\cancel{4}5}$ /hour
$0011 = 1 \times 10^{-\cancel{4}5}$ /hour
$0100 = 3.16 \times 10^{-\cancel{5}6}$ /hour
$0101 = 1 \times 10^{-\cancel{5}6}$ /hour
$0110 = 3.16 \times 10^{-\cancel{6}7}$ /hour
$0111 = 1 \times 10^{-\cancel{6}7}$ /hour
$1000 = 3.16 \times 10^{-\cancel{7}8}$ /hour
$1001 = 1 \times 10^{-\cancel{7}8}$ /hour
$1010 = 3.16 \times 10^{-\cancel{8}9}$ /hour
$1011 = 1 \times 10^{-\cancel{8}9}$ /hour
$1100 = 3.16 \times 10^{-\cancel{9}10}$ /hour
$1101 = 1 \times 10^{-\cancel{9}10}$ /hour
$1110 = 3.16 \times 10^{-\cancel{10}11}$ /hour
$1111 = \text{RESERVED}$

**IS**:
The four bits are defined as follows:
$0000 = 3.16 \times 10^{-4}$ /hour
$0001 = 1 \times 10^{-4}$ /hour
$0010 = 3.16 \times 10^{-5}$ /hour
$0011 = 1 \times 10^{-5}$ /hour
$0100 = 3.16 \times 10^{-6}$ /hour
$0101 = 1 \times 10^{-6}$ /hour
$0110 = 3.16 \times 10^{-7}$ /hour
$0111 = 1 \times 10^{-7}$ /hour
$1000 = 3.16 \times 10^{-8}$ /hour
$1001 = 1 \times 10^{-8}$ /hour
$1010 = 3.16 \times 10^{-9}$ /hour
$1011 = 1 \times 10^{-9}$ /hour
$1100 = 3.16 \times 10^{-10}$ /hour
$1101 = 1 \times 10^{-10}$ /hour
$1110 = 3.16 \times 10^{-11}$ /hour
$1111 = $ RESERVED

**Rationale**:
As part of the Pconst to Rconst Conversion, the lexicon has changed from a probability to a rate. (T. Anthony)

**IS705-1646**:

**Section Number**:
20.3.3.10.1.10
**WAS**:
*Object Heading 20.3.3.10.1.10* Mean Fault Duration
**Redlines**:
*Object Heading 20.3.3.10.1.10* Mean ~~Fault~~ Duration of a Constellation Fault
**IS**:
*Object Heading 20.3.3.10.1.10* Mean Duration of a Constellation Fault
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format now has an MFD designated for the constellation. (T. Anthony)
CRM #32 4/26/2022 The precedent was set in RFC-450 to expand MFD to mean duration of a xxx fault.  (T. Anthony)

**IS705-1647**:

**Section Number**:
20.3.3.10.1.10.0-1
**WAS**:
Bits 82 through 85 of Message Type 40 shall provide the assumed Mean Fault Duration (MFD) value for ARAIM at the current time for the associated GNSS constellation.
*Object Type*: <blank>
**Redlines**:
Bits ~~82~~86 through ~~85~~89 of Message Type 40 shall provide the assumed ~~Mean~~mean ~~Fault~~duration ~~Duration~~of a constellation fault (~~MFD~~MFDconst) value for ARAIM at the current time for the associated GNSS constellation.
*Object Type*: ~~<blank>~~Requirement
**IS**:
Bits 86 through 89 of Message Type 40 shall provide the assumed mean duration of a constellation fault ($MFD_{const}$) value for ARAIM at the current time for the associated GNSS constellation.
*Object Type*: Requirement
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has changed. (T. Anthony)
CRM #32 4/26/2022 The precedent was set in RFC-450 to expand MFD to mean duration of a xxx fault.  (T. Anthony)

**IS705-1648**:

**Section Number**:
20.3.3.10.1.10.0-2
**WAS**:
The four bits are defined as follows:
0000 = 0.25 hours
0001 = 0.33 hours
0010 = 0.50 hours
0011 = 0.67 hours
0100 = 0.83 hours
0101 = 1 hour
0110 = 1.25 hours
0111 = 1.50 hours
1000 = 1.75 hours
1001 = 2 hours
1010 = 3 hours
1011 = 4 hours
1100 = 7 hours
1101 = 10 hours
1110 = 17 hours
1111 = 24 hours
**Redlines**:
The four bits are defined as follows:
0000 = 0.25 hours
0001 = 0.~~33~~5 hours
0010 = ~~0.50~~1 ~~hours~~<u>hour</u>
0011 = ~~0.67~~2 hours
0100 = ~~0.83~~4 hours
0101 = ~~1~~6 ~~hour~~<u>hours</u>
0110 = ~~1.25~~8 hours
0111 = ~~1.50~~<u>10</u> hours
1000 = ~~1.75~~<u>12</u> hours
1001 = ~~2~~<u>16</u> hours
1010 = ~~3~~<u>20</u> hours
1011 = ~~4~~<u>24</u> hours
1100 = ~~7~~<u>30</u> hours
1101 = ~~10~~<u>36</u> hours
1110 = ~~17~~<u>42</u> hours
1111 = ~~24~~<u>48</u> hours

**IS**:

The four bits are defined as follows:

0000 = 0.25 hours
0001 = 0.5 hours
0010 = 1 hour
0011 = 2 hours
0100 = 4 hours
0101 = 6 hours
0110 = 8 hours
0111 = 10 hours
1000 = 12 hours
1001 = 16 hours
1010 = 20 hours
1011 = 24 hours
1100 = 30 hours
1101 = 36 hours
1110 = 42 hours
1111 = 48 hours

**Rationale**:

As part of the Pconst to Rconst Conversion, the this MFD lexicon has changed. (T. Anthony)

CRM #8, #19, #23, #35  4/26/2022 Correct the duplicate "t"s in "TThe ..." at the beginning of the paragraph.  (T. Anthony)

**IS705-1629**:

**Section Number**:
20.3.3.10.1.11.0-1
**WAS**:
Bits 86 through 88 of Message Type 40 shall provide the Service Level, as described in Table 20-XIb, applicable to a given page of the ISM data issue.
**Redlines**:
Bits 8690 through 8892 of Message Type 40 shall provide the Service Level, as described in Table 20-XIb, applicable to a given page of the ISM data issue.
**IS**:
Bits 90 through 92 of Message Type 40 shall provide the Service Level, as described in Table 20-XIb, applicable to a given page of the ISM data issue.
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has changed. (T. Anthony)
CRM #9, #20, #24 4/26/2022 Correct the duplicate "b"s in "BBits..." at the beginning of the paragraph (T. Anthony)

**IS705-1640**:

**Section Number**:
20.3.3.10.1.12
**WAS**:
*Object Heading 20.3.3.10.1.12* Satellite Mask
**Redlines**:
*Object Heading 20.3.3.10.1.12* SatellitePRN Inclusion Mask
**IS**:
*Object Heading 20.3.3.10.1.12* PRN Inclusion Mask
**Rationale**:
As part of the Pconst to Rconst Conversion, this field has a more descriptive name. (T. Anthony)

**IS705-1641**:

**Section Number**:
20.3.3.10.1.12.0-1
**WAS**:
Bits 89 through 151 of Message Type 40 shall provide the PRN inclusion mask. Refer to Table 20-XIc for complete GNSS PRN mapping.
**Redlines**:
Bits 8993 through 151155 of Message Type 40 shall provide the PRN inclusion mask. Refer to Table 20-XIc for complete GNSS PRN mapping.
**IS**:
Bits 93 through 155 of Message Type 40 shall provide the PRN inclusion mask. Refer to Table 20-XIc for complete GNSS PRN mapping.
**Rationale**:
As part of Pconst to Rconst Conversion, the message format has chanaged (T. Anthony)

**IS705-1662**:

**Section Number**:
20.3.3.10.1.12.0-3
**WAS**:
Table 20-XIc PRN Mapping
**Redlines**:
Table 20-XIc PRN <u>Inclusion Mask</u> Mapping
**IS**:
Table 20-XIc PRN Inclusion Mask Mapping
**Rationale**:
CRM # 25 4/26/2022 Change name to PRN Inlcusion Mask to match Table 20-XIa Note ^^^^

**IS705-1663**:

**Section Number**:
20.3.3.10.1.12.0-4
**WAS**:

| Bits | Galileo | GLONASS | BeiDou | GPS | SBAS | QZSS | IRNSS |
|------|---------|---------|--------|-----|------|------|-------|
| 89 | SVID 1 | Freq. 1 | RCN 1 | PRN 1 | PRN 120 | PRN 183 | PRN ID-1 |
| 90 | SVID 2 | Freq. 2 | RCN 2 | PRN 2 | PRN 121 | PRN 184 | PRN ID-2 |
| 91 | SVID 3 | Freq. 3 | RCN 3 | PRN 3 | PRN 122 | PRN 185 | PRN ID-3 |
| 92 | SVID 4 | Freq. 4 | RCN 4 | PRN 4 | PRN 123 | PRN 186 | PRN ID-4 |
| 93 | SVID 5 | Freq. 5 | RCN 5 | PRN 5 | PRN 124 | PRN 187 | PRN ID-5 |
| 94 | SVID 6 | Freq. 6 | RCN 6 | PRN 6 | PRN 125 | PRN 188 | PRN ID-6 |
| 95 | SVID 7 | Freq. 7 | RCN 7 | PRN 7 | PRN 126 | PRN 189 | PRN ID-7 |
| 96 | SVID 8 | Freq. 8 | RCN 8 | PRN 8 | PRN 127 | PRN 190 | Reserved |
| 97 | SVID 9 | Freq. 9 | RCN 9 | PRN 9 | PRN 128 | PRN 191 | Reserved |
| 98 | SVID 10 | Freq. 10 | RCN 10 | PRN 10 | PRN 129 | PRN 192 | Reserved |
| 99 | SVID 11 | Freq. 11 | RCN 11 | PRN 11 | PRN 130 | PRN 193 | Reserved |
| 100 | SVID 12 | Freq. 12 | RCN 12 | PRN 12 | PRN 131 | PRN 194 | Reserved |
| 101 | SVID 13 | Freq. 13 | RCN 13 | PRN 13 | PRN 132 | PRN 195 | Reserved |
| 102 | SVID 14 | Freq. 14 | RCN 14 | PRN 14 | PRN 133 | PRN 196 | Reserved |
| 103 | SVID 15 | Freq. 15 | RCN 15 | PRN 15 | PRN 134 | PRN 197 | Reserved |
| 104 | SVID 16 | Freq. 16 | RCN 16 | PRN 16 | PRN 135 | PRN 198 | Reserved |
| 105 | SVID 17 | Freq. 17 | RCN 17 | PRN 17 | PRN 136 | PRN 199 | Reserved |
| 106 | SVID 18 | Freq. 18 | RCN 18 | PRN 18 | PRN 137 | PRN 200 | Reserved |
| 107 | SVID 19 | Freq. 19 | RCN 19 | PRN 19 | PRN 138 | PRN 201 | Reserved |
| 108 | SVID 20 | Freq. 20 | RCN 20 | PRN 20 | PRN 139 | PRN 202 | Reserved |
| 109 | SVID 21 | Freq. 21 | RCN 21 | PRN 21 | PRN 140 | Reserved | Reserved |
| 110 | SVID 22 | Freq. 22 | RCN 22 | PRN 22 | PRN 141 | Reserved | Reserved |
| 111 | SVID 23 | Freq. 23 | RCN 23 | PRN 23 | PRN 142 | Reserved | Reserved |
| 112 | SVID 24 | Freq. 24 | RCN 24 | PRN 24 | PRN 143 | Reserved | Reserved |
| 113 | SVID 25 | Freq. 25 | RCN 25 | PRN 25 | PRN 144 | Reserved | Reserved |
| 114 | SVID 26 | Freq. 26 | RCN 26 | PRN 26 | PRN 145 | Reserved | Reserved |
| 115 | SVID 27 | Freq. 27 | RCN 27 | PRN 27 | PRN 146 | Reserved | Reserved |
| 116 | SVID 28 | Freq. 28 | RCN 28 | PRN 28 | PRN 147 | Reserved | Reserved |
| 117 | SVID 29 | Freq. 29 | RCN 29 | PRN 29 | PRN 148 | Reserved | Reserved |
| 118 | SVID 30 | Freq. 30 | RCN 30 | PRN 30 | PRN 149 | Reserved | Reserved |
| 119 | SVID 31 | Freq. 31 | RCN 31 | PRN 31 | PRN 150 | Reserved | Reserved |
| 120 | SVID 32 | Freq. 32 | RCN 32 | PRN 32 | PRN 151 | Reserved | Reserved |
| 121 | SVID 33 | Reserved | RCN 33 | PRN 33 | PRN 152 | Reserved | Reserved |
| 122 | SVID 34 | Reserved | RCN 34 | PRN 34 | PRN 153 | Reserved | Reserved |
| 123 | SVID 35 | Reserved | RCN 35 | PRN 35 | PRN 154 | Reserved | Reserved |
| 124 | SVID 36 | Reserved | RCN 36 | PRN 36 | PRN 155 | Reserved | Reserved |
| 125 | Reserved | Reserved | RCN 37 | PRN 37 | PRN 156 | Reserved | Reserved |
| 126 | Reserved | Reserved | Reserved | PRN 38 | PRN 157 | Reserved | Reserved |
| 127 | Reserved | Reserved | Reserved | PRN 39 | PRN 158 | Reserved | Reserved |
| 128 | Reserved | Reserved | Reserved | PRN 40 | Reserved | Reserved | Reserved |
| 129 | Reserved | Reserved | Reserved | PRN 41 | Reserved | Reserved | Reserved |
| 130 | Reserved | Reserved | Reserved | PRN 42 | Reserved | Reserved | Reserved |
| 131 | Reserved | Reserved | Reserved | PRN 43 | Reserved | Reserved | Reserved |
| 132 | Reserved | Reserved | Reserved | PRN 44 | Reserved | Reserved | Reserved |
| 133 | Reserved | Reserved | Reserved | PRN 45 | Reserved | Reserved | Reserved |
| 134 | Reserved | Reserved | Reserved | PRN 46 | Reserved | Reserved | Reserved |
| 135 | Reserved | Reserved | Reserved | PRN 47 | Reserved | Reserved | Reserved |

| 136 | Reserved | Reserved | Reserved | PRN 48 | Reserved | Reserved | Reserved |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 137 | Reserved | Reserved | Reserved | PRN 49 | Reserved | Reserved | Reserved |
| 138 | Reserved | Reserved | Reserved | PRN 50 | Reserved | Reserved | Reserved |
| 139 | Reserved | Reserved | Reserved | PRN 51 | Reserved | Reserved | Reserved |
| 140 | Reserved | Reserved | Reserved | PRN 52 | Reserved | Reserved | Reserved |
| 141 | Reserved | Reserved | Reserved | PRN 53 | Reserved | Reserved | Reserved |
| 142 | Reserved | Reserved | Reserved | PRN 54 | Reserved | Reserved | Reserved |
| 143 | Reserved | Reserved | Reserved | PRN 55 | Reserved | Reserved | Reserved |
| 144 | Reserved | Reserved | Reserved | PRN 56 | Reserved | Reserved | Reserved |
| 145 | Reserved | Reserved | Reserved | PRN 57 | Reserved | Reserved | Reserved |
| 146 | Reserved | Reserved | Reserved | PRN 58 | Reserved | Reserved | Reserved |
| 147 | Reserved | Reserved | Reserved | PRN 59 | Reserved | Reserved | Reserved |
| 148 | Reserved | Reserved | Reserved | PRN 60 | Reserved | Reserved | Reserved |
| 149 | Reserved | Reserved | Reserved | PRN 61 | Reserved | Reserved | Reserved |
| 150 | Reserved | Reserved | Reserved | PRN 62 | Reserved | Reserved | Reserved |
| 151 | Reserved | Reserved | Reserved | PRN 63 | Reserved | Reserved | Reserved |

SVID = Space Vehicle ID
Freq. = Carrier Frequency Number
RCN = Ranging Code Number
PRN = Pseudorandom Noise Number

**Redlines**:

| Bits | Galileo | GLONASS | BeiDou | GPS | SBAS | QZSS | IRNSS |
|---|---|---|---|---|---|---|---|
| 8993 | SVID 1 | Freq. 1 | RCN 1 | PRN 1 | PRN 120 | PRN 183 | PRN ID-1 |
| 9094 | SVID 2 | Freq. 2 | RCN 2 | PRN 2 | PRN 121 | PRN 184 | PRN ID-2 |
| 9195 | SVID 3 | Freq. 3 | RCN 3 | PRN 3 | PRN 122 | PRN 185 | PRN ID-3 |
| 9296 | SVID 4 | Freq. 4 | RCN 4 | PRN 4 | PRN 123 | PRN 186 | PRN ID-4 |
| 9397 | SVID 5 | Freq. 5 | RCN 5 | PRN 5 | PRN 124 | PRN 187 | PRN ID-5 |
| 9498 | SVID 6 | Freq. 6 | RCN 6 | PRN 6 | PRN 125 | PRN 188 | PRN ID-6 |
| 9599 | SVID 7 | Freq. 7 | RCN 7 | PRN 7 | PRN 126 | PRN 189 | PRN ID-7 |
| 96100 | SVID 8 | Freq. 8 | RCN 8 | PRN 8 | PRN 127 | PRN 190 | Reserved |
| 97101 | SVID 9 | Freq. 9 | RCN 9 | PRN 9 | PRN 128 | PRN 191 | Reserved |
| 98102 | SVID 10 | Freq. 10 | RCN 10 | PRN 10 | PRN 129 | PRN 192 | Reserved |
| 99103 | SVID 11 | Freq. 11 | RCN 11 | PRN 11 | PRN 130 | PRN 193 | Reserved |
| 100104 | SVID 12 | Freq. 12 | RCN 12 | PRN 12 | PRN 131 | PRN 194 | Reserved |
| 101105 | SVID 13 | Freq. 13 | RCN 13 | PRN 13 | PRN 132 | PRN 195 | Reserved |
| 102106 | SVID 14 | Freq. 14 | RCN 14 | PRN 14 | PRN 133 | PRN 196 | Reserved |
| 103107 | SVID 15 | Freq. 15 | RCN 15 | PRN 15 | PRN 134 | PRN 197 | Reserved |
| 104108 | SVID 16 | Freq. 16 | RCN 16 | PRN 16 | PRN 135 | PRN 198 | Reserved |
| 105109 | SVID 17 | Freq. 17 | RCN 17 | PRN 17 | PRN 136 | PRN 199 | Reserved |
| 106110 | SVID 18 | Freq. 18 | RCN 18 | PRN 18 | PRN 137 | PRN 200 | Reserved |
| 107111 | SVID 19 | Freq. 19 | RCN 19 | PRN 19 | PRN 138 | PRN 201 | Reserved |
| 108112 | SVID 20 | Freq. 20 | RCN 20 | PRN 20 | PRN 139 | PRN 202 | Reserved |
| 109113 | SVID 21 | Freq. 21 | RCN 21 | PRN 21 | PRN 140 | Reserved | Reserved |
| 110114 | SVID 22 | Freq. 22 | RCN 22 | PRN 22 | PRN 141 | Reserved | Reserved |
| 111115 | SVID 23 | Freq. 23 | RCN 23 | PRN 23 | PRN 142 | Reserved | Reserved |
| 112116 | SVID 24 | Freq. 24 | RCN 24 | PRN 24 | PRN 143 | Reserved | Reserved |
| 113117 | SVID 25 | Freq. 25 | RCN 25 | PRN 25 | PRN 144 | Reserved | Reserved |
| 114118 | SVID 26 | Freq. 26 | RCN 26 | PRN 26 | PRN 145 | Reserved | Reserved |
| 115119 | SVID 27 | Freq. 27 | RCN 27 | PRN 27 | PRN 146 | Reserved | Reserved |
| 116120 | SVID 28 | Freq. 28 | RCN 28 | PRN 28 | PRN 147 | Reserved | Reserved |
| 117121 | SVID 29 | Freq. 29 | RCN 29 | PRN 29 | PRN 148 | Reserved | Reserved |
| 118122 | SVID 30 | Freq. 30 | RCN 30 | PRN 30 | PRN 149 | Reserved | Reserved |
| 119123 | SVID 31 | Freq. 31 | RCN 31 | PRN 31 | PRN 150 | Reserved | Reserved |
| 120124 | SVID 32 | Freq. 32 | RCN 32 | PRN 32 | PRN 151 | Reserved | Reserved |
| 121125 | SVID 33 | Reserved | RCN 33 | PRN 33 | PRN 152 | Reserved | Reserved |
| 122126 | SVID 34 | Reserved | RCN 34 | PRN 34 | PRN 153 | Reserved | Reserved |
| 123127 | SVID 35 | Reserved | RCN 35 | PRN 35 | PRN 154 | Reserved | Reserved |
| 124128 | SVID 36 | Reserved | RCN 36 | PRN 36 | PRN 155 | Reserved | Reserved |
| 125129 | Reserved | Reserved | RCN 37 | PRN 37 | PRN 156 | Reserved | Reserved |
| 126130 | Reserved | Reserved | Reserved | PRN 38 | PRN 157 | Reserved | Reserved |
| 127131 | Reserved | Reserved | Reserved | PRN 39 | PRN 158 | Reserved | Reserved |
| 128132 | Reserved | Reserved | Reserved | PRN 40 | Reserved | Reserved | Reserved |
| 129133 | Reserved | Reserved | Reserved | PRN 41 | Reserved | Reserved | Reserved |
| 130134 | Reserved | Reserved | Reserved | PRN 42 | Reserved | Reserved | Reserved |
| 131135 | Reserved | Reserved | Reserved | PRN 43 | Reserved | Reserved | Reserved |
| 132136 | Reserved | Reserved | Reserved | PRN 44 | Reserved | Reserved | Reserved |
| 133137 | Reserved | Reserved | Reserved | PRN 45 | Reserved | Reserved | Reserved |

| Bits | Galileo | GLONASS | BeiDou | GPS | SBAS | QZSS | IRNSS |
|---|---|---|---|---|---|---|---|
| ~~134~~138 | Reserved | Reserved | Reserved | PRN 46 | Reserved | Reserved | Reserved |
| ~~135~~139 | Reserved | Reserved | Reserved | PRN 47 | Reserved | Reserved | Reserved |
| ~~136~~140 | Reserved | Reserved | Reserved | PRN 48 | Reserved | Reserved | Reserved |
| ~~137~~141 | Reserved | Reserved | Reserved | PRN 49 | Reserved | Reserved | Reserved |
| ~~138~~142 | Reserved | Reserved | Reserved | PRN 50 | Reserved | Reserved | Reserved |
| ~~139~~143 | Reserved | Reserved | Reserved | PRN 51 | Reserved | Reserved | Reserved |
| ~~140~~144 | Reserved | Reserved | Reserved | PRN 52 | Reserved | Reserved | Reserved |
| ~~141~~145 | Reserved | Reserved | Reserved | PRN 53 | Reserved | Reserved | Reserved |
| ~~142~~146 | Reserved | Reserved | Reserved | PRN 54 | Reserved | Reserved | Reserved |
| ~~143~~147 | Reserved | Reserved | Reserved | PRN 55 | Reserved | Reserved | Reserved |
| ~~144~~148 | Reserved | Reserved | Reserved | PRN 56 | Reserved | Reserved | Reserved |
| ~~145~~149 | Reserved | Reserved | Reserved | PRN 57 | Reserved | Reserved | Reserved |
| ~~146~~150 | Reserved | Reserved | Reserved | PRN 58 | Reserved | Reserved | Reserved |
| ~~147~~151 | Reserved | Reserved | Reserved | PRN 59 | Reserved | Reserved | Reserved |
| ~~148~~152 | Reserved | Reserved | Reserved | PRN 60 | Reserved | Reserved | Reserved |
| ~~149~~153 | Reserved | Reserved | Reserved | PRN 61 | Reserved | Reserved | Reserved |
| ~~150~~154 | Reserved | Reserved | Reserved | PRN 62 | Reserved | Reserved | Reserved |
| ~~151~~155 | Reserved | Reserved | Reserved | PRN 63 | Reserved | Reserved | Reserved |

SVID = Space Vehicle ID
Freq. = Carrier Frequency Number
RCN = Ranging Code Number
PRN = Pseudorandom Noise Number

**IS**:

| Bits | Galileo | GLONASS | BeiDou | GPS | SBAS | QZSS | IRNSS |
|------|---------|---------|--------|-----|------|------|-------|
| 93 | SVID 1 | Freq. 1 | RCN 1 | PRN 1 | PRN 120 | PRN 183 | PRN ID-1 |
| 94 | SVID 2 | Freq. 2 | RCN 2 | PRN 2 | PRN 121 | PRN 184 | PRN ID-2 |
| 95 | SVID 3 | Freq. 3 | RCN 3 | PRN 3 | PRN 122 | PRN 185 | PRN ID-3 |
| 96 | SVID 4 | Freq. 4 | RCN 4 | PRN 4 | PRN 123 | PRN 186 | PRN ID-4 |
| 97 | SVID 5 | Freq. 5 | RCN 5 | PRN 5 | PRN 124 | PRN 187 | PRN ID-5 |
| 98 | SVID 6 | Freq. 6 | RCN 6 | PRN 6 | PRN 125 | PRN 188 | PRN ID-6 |
| 99 | SVID 7 | Freq. 7 | RCN 7 | PRN 7 | PRN 126 | PRN 189 | PRN ID-7 |
| 100 | SVID 8 | Freq. 8 | RCN 8 | PRN 8 | PRN 127 | PRN 190 | Reserved |
| 101 | SVID 9 | Freq. 9 | RCN 9 | PRN 9 | PRN 128 | PRN 191 | Reserved |
| 102 | SVID 10 | Freq. 10 | RCN 10 | PRN 10 | PRN 129 | PRN 192 | Reserved |
| 103 | SVID 11 | Freq. 11 | RCN 11 | PRN 11 | PRN 130 | PRN 193 | Reserved |
| 104 | SVID 12 | Freq. 12 | RCN 12 | PRN 12 | PRN 131 | PRN 194 | Reserved |
| 105 | SVID 13 | Freq. 13 | RCN 13 | PRN 13 | PRN 132 | PRN 195 | Reserved |
| 106 | SVID 14 | Freq. 14 | RCN 14 | PRN 14 | PRN 133 | PRN 196 | Reserved |
| 107 | SVID 15 | Freq. 15 | RCN 15 | PRN 15 | PRN 134 | PRN 197 | Reserved |
| 108 | SVID 16 | Freq. 16 | RCN 16 | PRN 16 | PRN 135 | PRN 198 | Reserved |
| 109 | SVID 17 | Freq. 17 | RCN 17 | PRN 17 | PRN 136 | PRN 199 | Reserved |
| 110 | SVID 18 | Freq. 18 | RCN 18 | PRN 18 | PRN 137 | PRN 200 | Reserved |
| 111 | SVID 19 | Freq. 19 | RCN 19 | PRN 19 | PRN 138 | PRN 201 | Reserved |
| 112 | SVID 20 | Freq. 20 | RCN 20 | PRN 20 | PRN 139 | PRN 202 | Reserved |
| 113 | SVID 21 | Freq. 21 | RCN 21 | PRN 21 | PRN 140 | Reserved | Reserved |
| 114 | SVID 22 | Freq. 22 | RCN 22 | PRN 22 | PRN 141 | Reserved | Reserved |
| 115 | SVID 23 | Freq. 23 | RCN 23 | PRN 23 | PRN 142 | Reserved | Reserved |
| 116 | SVID 24 | Freq. 24 | RCN 24 | PRN 24 | PRN 143 | Reserved | Reserved |
| 117 | SVID 25 | Freq. 25 | RCN 25 | PRN 25 | PRN 144 | Reserved | Reserved |
| 118 | SVID 26 | Freq. 26 | RCN 26 | PRN 26 | PRN 145 | Reserved | Reserved |
| 119 | SVID 27 | Freq. 27 | RCN 27 | PRN 27 | PRN 146 | Reserved | Reserved |
| 120 | SVID 28 | Freq. 28 | RCN 28 | PRN 28 | PRN 147 | Reserved | Reserved |
| 121 | SVID 29 | Freq. 29 | RCN 29 | PRN 29 | PRN 148 | Reserved | Reserved |
| 122 | SVID 30 | Freq. 30 | RCN 30 | PRN 30 | PRN 149 | Reserved | Reserved |
| 123 | SVID 31 | Freq. 31 | RCN 31 | PRN 31 | PRN 150 | Reserved | Reserved |
| 124 | SVID 32 | Freq. 32 | RCN 32 | PRN 32 | PRN 151 | Reserved | Reserved |
| 125 | SVID 33 | Reserved | RCN 33 | PRN 33 | PRN 152 | Reserved | Reserved |
| 126 | SVID 34 | Reserved | RCN 34 | PRN 34 | PRN 153 | Reserved | Reserved |
| 127 | SVID 35 | Reserved | RCN 35 | PRN 35 | PRN 154 | Reserved | Reserved |
| 128 | SVID 36 | Reserved | RCN 36 | PRN 36 | PRN 155 | Reserved | Reserved |
| 129 | Reserved | Reserved | RCN 37 | PRN 37 | PRN 156 | Reserved | Reserved |
| 130 | Reserved | Reserved | Reserved | PRN 38 | PRN 157 | Reserved | Reserved |
| 131 | Reserved | Reserved | Reserved | PRN 39 | PRN 158 | Reserved | Reserved |
| 132 | Reserved | Reserved | Reserved | PRN 40 | Reserved | Reserved | Reserved |
| 133 | Reserved | Reserved | Reserved | PRN 41 | Reserved | Reserved | Reserved |
| 134 | Reserved | Reserved | Reserved | PRN 42 | Reserved | Reserved | Reserved |
| 135 | Reserved | Reserved | Reserved | PRN 43 | Reserved | Reserved | Reserved |
| 136 | Reserved | Reserved | Reserved | PRN 44 | Reserved | Reserved | Reserved |
| 137 | Reserved | Reserved | Reserved | PRN 45 | Reserved | Reserved | Reserved |
| 138 | Reserved | Reserved | Reserved | PRN 46 | Reserved | Reserved | Reserved |
| 139 | Reserved | Reserved | Reserved | PRN 47 | Reserved | Reserved | Reserved |
| 140 | Reserved | Reserved | Reserved | PRN 48 | Reserved | Reserved | Reserved |
| 141 | Reserved | Reserved | Reserved | PRN 49 | Reserved | Reserved | Reserved |
| 142 | Reserved | Reserved | Reserved | PRN 50 | Reserved | Reserved | Reserved |
| 143 | Reserved | Reserved | Reserved | PRN 51 | Reserved | Reserved | Reserved |

| Bits | Galileo | GLONASS | BeiDou | GPS | SBAS | QZSS | IRNSS |
|------|---------|---------|--------|--------|----------|----------|----------|
| 144 | Reserved | Reserved | Reserved | PRN 52 | Reserved | Reserved | Reserved |
| 145 | Reserved | Reserved | Reserved | PRN 53 | Reserved | Reserved | Reserved |
| 146 | Reserved | Reserved | Reserved | PRN 54 | Reserved | Reserved | Reserved |
| 147 | Reserved | Reserved | Reserved | PRN 55 | Reserved | Reserved | Reserved |
| 148 | Reserved | Reserved | Reserved | PRN 56 | Reserved | Reserved | Reserved |
| 149 | Reserved | Reserved | Reserved | PRN 57 | Reserved | Reserved | Reserved |
| 150 | Reserved | Reserved | Reserved | PRN 58 | Reserved | Reserved | Reserved |
| 151 | Reserved | Reserved | Reserved | PRN 59 | Reserved | Reserved | Reserved |
| 152 | Reserved | Reserved | Reserved | PRN 60 | Reserved | Reserved | Reserved |
| 153 | Reserved | Reserved | Reserved | PRN 61 | Reserved | Reserved | Reserved |
| 154 | Reserved | Reserved | Reserved | PRN 62 | Reserved | Reserved | Reserved |
| 155 | Reserved | Reserved | Reserved | PRN 63 | Reserved | Reserved | Reserved |

SVID = Space Vehicle ID
Freq. = Carrier Frequency Number
RCN = Ranging Code Number
PRN = Pseudorandom Noise Number

**Rationale**:
CRM #10 4/26/2022 The entire PRN Inclusion Mask field has moved right by 4 bits (T. Anthony)

**IS705-1743**:
Insertion after object IS705-1640
**Section Number**:
20.3.3.10.1.13
**WAS**:
<INSERTED OBJECT>
**Redlines**:
*Object Heading 20.3.3.10.1.13* Reserved for ISM
*Object Type*: Header
**IS**:
*Object Heading 20.3.3.10.1.13* Reserved for ISM
*Object Type*: Header
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has changed to have bits reserved for ISM use. (T. Anthony)

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**IS705-1744**:
Insertion below object IS705-1743
**Section Number**:
20.3.3.10.1.13.0-1
**WAS**:
<INSERTED OBJECT>
**Redlines**:
Bits 156 through 244 of Message Type 40 are reserved for future ISM use.
*Object Type*: Info-Only
**IS**:
Bits 156 through 244 of Message Type 40 are reserved for future ISM use.
*Object Type*: Info-Only
**Rationale**:
As part of the Pconst to Rconst Conversion, the message format has bits reserved for ISM use. (T. Anthony)
CRM #11 CRM #7 4/26/2022 For consistency, changing from MT-40 to Message Type 40 throughout the document (T. Anthony)

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**IS705-1665**:

**Section Number**:
20.3.3.10.1.14.0-1
**WAS**:
Bits 245 through 276 of MT-40 are a 32-bit Cyclic Redundancy Check (CRC) specific to the ISM parameters. The ISM CRC will cover only the ISM parameters in Message Type 40, (Bits 39 to 244). Refer to DO-246E-Change 1 document for more details on the ISM CRC.
**Redlines**:
Bits 245 through 276 of ~~MT~~ Message Type 40 are a 32-bit Cyclic Redundancy Check (CRC) specific to the ISM parameters. The ISM CRC will cover only the ISM parameters in Message Type 40~~,~~ (~~B~~bits 39 ~~to~~through 244). Refer to DO-246E-Change 1 document for more details on the ISM CRC.
**IS**:
Bits 245 through 276 of Message Type 40 are a 32-bit Cyclic Redundancy Check (CRC) specific to the ISM parameters. The ISM CRC will cover only the ISM parameters in Message Type 40 (bits 39 through 244). Refer to DO-246E-Change 1 document for more details on the ISM CRC.
**Rationale**:
CRM #28 4/26/2022 Bit range was confusing using "nn to nn" form so converted to "nn through nn" to include the upper bound as always intended  (T. Anthony)
CRM #11 CRM #7 4/26/2022 For consistency, changing from MT-40 to Message Type 40 throughout the document (T. Anthony)

**# CP Status = 'In Review': 20**

# of inserted requirements: 1
# of modified requirements: 1
# of deleted requirements: 0
# of TBDs: 0
# of TBRs: 0
# of (added/modified) effectivities: 0
# of VCRM additions: 0
# of VCRM modifications: 0
# of VCRM deletions: 0
# of descriptive texts: 11
# of (added/modified) tables: 1
# of (added/modified) figures: 1