Recommended Standard CCSDS 502.0-B-2
TECHNICAL CORRIGENDUM 1

Issue Date: May 2012

Orbit Data Messages

TECHNICAL CORRIGENDUM 1

The Management Council of the Consultative Committee for Space Data Systems (CCSDS) has authorized the publication of technical corrigendum 1 to CCSDS 502.0-B-2, issued November 2009.

Pages 1-3 - 1-4

Subsection 1.7:

Update references [1] and [4] to reflect current issues.

Page 3-2

Paragraph 3.2.3.2:

Change text following first sentence to note.

Pages 4-5–4-6

Table 4-3:

Change “SGP4” to “SGP/SGP4”
Change “SGP4/SGP” to “SGP/SGP4”

Rows beginning “EPHEMERIS_TYPE” and “CLASSIFICATION_TYPE”:

Change “Value” to “Default Value”
Change “See note 5” to “See 4.2.4.7”

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NOTE – Current versions of CCSDS documents are maintained at the CCSDS Web site:

http://www.ccsds.org/

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Space Communications and Navigation Office, 7L70
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NASA Headquarters
Washington, DC 20546-0001, USA

Page 4-7

Paragraph 4.2.4.6, second bullet:

Change “REFERENCE_FRAME” to “REF_FRAME”

Pages 4-8–4-10

Figures 4-2–4-4:

Change “SGP4” to “SGP/SGP4”

Delete “COMMENT USAF SGP4 IS THE ONLY PROPAGATOR THAT SHOULD BE USED FOR THIS DATA”

Page 5-5

Table 5-3, rows beginning “START_TIME” and “STOP_TIME”:

Delete “The START_TIME time tag at a new block of ephemeris data must be equal to or greater than the STOP_TIME time tag of the previous block.”

Page 5-5

Table 5-3, row beginning “USEABLE_START_TIME USEABLE_STOP_TIME”:

Add to end of Description text, “The USEABLE_START_TIME time tag at a new block of ephemeris data must be greater than or equal to the USEABLE_STOP_TIME time tag of the previous block.”

Page 5-6

Paragraph 5.2.4.4:

Replace paragraph with

“Repeated time tags may occur in consecutive ephemeris data blocks if the STOP_TIME of the first ephemeris data block is greater than the START_TIME of the second ephemeris data block. Although the USEABLE_STOP_TIME and USEABLE_START_TIME of the consecutive ephemeris data blocks must not overlap (except for a possibly shared endpoint), the STOP_TIME of the first ephemeris data block may be greater than the START_TIME of the second ephemeris data block if the extra data is required for interpolation purposes.”

Page 6-4

Paragraph 6.5.10 after “EPOCH”:

Add “REF_FRAME_EPOCH,”

Page A-1

Annex title:

Change “REFERENCE_FRAME” to “FRAME RELATED KEYWORDS”

Paragraph following annex title:

Change

“TIME_SYSTEM and REFERENCE_FRAME keywords”

To

“TIME_SYSTEM, REF_FRAME, MAN_REF_FRAME, and COV_REF_FRAME keywords”

Page A-2

Heading A2:

Change “REFERENCE_FRAME” to “REF_FRAME”

Table under Heading A2:

Delete rows

RSW	Another name for ‘Radial, Transverse, Normal’
RTN	Radial, Transverse, Normal

TNW	A local orbital coordinate frame that has the x-axis along the velocity vector, W along the orbital angular momentum vector, and N completes the right handed system.

Page A-2 (continued)

At end of annex:

Add new subsection

A3 MAN_REF_FRAME AND COV_REF_FRAME KEYWORDS

Reference Frame Value	Meaning
RSW	Another name for 'Radial, Transverse, Normal'
RTN	Radial, Transverse, Normal
TNW	A local orbital coordinate frame that has the x-axis along the velocity vector, W along the orbital angular momentum vector, and N completes the right handed system.

Page E-2

End of subsection E1:

Add "12. The relationship between successive blocks of ephemeris data was clarified such that the repetition of time tags is relative to the USEABLE_STOP_TIME and USEABLE_START_TIME instead of the STOP_TIME and START_TIME."

Subsection E2, item 1:

Change "REFERENCE_FRAME" to "reference frame related"

Page F-2

End of subsection F2, above NOTE:

Add item

"– The user must ensure that ephemeris data time tags do not overlap except at the STOP_TIME/START_TIME boundary."