

## **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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## TECHNICAL CORRIGENDUM 1 TO CCSDS 502.0-B-2 (Continued)

### *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.”

## TECHNICAL CORRIGENDUM 1 TO CCSDS 502.0-B-2 (Continued)

*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.
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# TECHNICAL CORRIGENDUM 1 TO CCSDS 502.0-B-2 (Continued)

*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.”