PRM 509.0-B-1 Corr 2 - Version 1.0 Errata

The following changes in the PRM are required to introduced the use of SANA registry in line with other NDM messages.

| **Error** | **Criticality (1=Highest, 4=Lowest)** | **Recommended Correction** | **Justification** |
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| 1. Sec 1.7 – References [12] and [13] are no more applicable. | 1 | Update the references [12] and [13] as follows:  [12] Navigation Data Messages XML Common Schema - unqualified (/ndmxml-<VersionNumber>-common-<blueBookNumber>.xsd). “Navigation Data  Messages XML Schema (Unqualified).” Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/ndmxml_unqualified>  [13] Navigation Data Messages XML Common Schema - qualified (/ndmxml-<VersionNumber>-common-<blueBookNumber>.xsd). “Navigation Data  Messages XML Schema (Qualified).” Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/ndmxml_qualified> | After the publication of NDMXML V2, the schemas referred by [12] and [13] disappeared. The Commons schemas were mixed in a single schema but unqualified and qualified version were created.  These references are used to refer the reader to the schemas defining some types used later in the document. |
| 1. Sec 3.3.1 – Table 3-1 – Reference to basic type definition in Epoch shall be updated. | 2 | Update the Type description for **Epoch** to (changes in red):  Describes an instant in time.  Epoch entities are used for instance to build timelines.  Basic type is ndm:epochType (see reference**s** [12] **and [13]**). | As explained in #1, the reference to the type definition shall point to the unqualified schema and to the qualified schema. |
| 1. Sec 3.3.1 – Table 3-1 – Reference to basic type definition in Duration shall be updated. | 2 | Update the Type description for **Duration** to (changes in red):  Describes an elapsed period of time.  Duration entities are used to build epochs relative to other epochs.  Basic type is ndm:durationType (see reference**s** [12] **and [13]**). | As explained in #1, the reference to the type definition shall point to the unqualified schema and to the qualified schema. |
| 1. Sec 3.3.1 – Table 3-1 – Reference to basic type definition in State Vector shall be updated. | 2 | Update the Type description for **State Vector** to (changes in red):  Describes one orbital state defined as an epoch and theposition and velocity at that epoch in Cartesian coordinates.  Basic type is ndm:stateVectorType (see reference**s** **[12] and** [13]). | As explained in #1, the reference to the type definition shall point to the unqualified schema and to the qualified schema. |
| 1. Sec 3.3.2.19 – Table 3-20 – Reference to basic type definition in Quaternion shall be updated. | 2 | Update the Type description for **Quaternion** to (changes in red):  quaternion of type ndm:quaternionType as defined in reference**s [12] and** [13]. | As explained in #1, the reference to the type definition shall point to the unqualified schema and to the qualified schema. |
| 1. Annex B.1  Acceptable values from SANA registry missing. | 1 | To be included in a new paragraph at the end of the NOTE.  In addition to the TIME\_SYSTEM keywords defined above, it is also acceptable to use the keywords enumerated in the SANA Registry of Time System as defined in reference [15]. | In addition to the TIME SYSTEM values presented in the table, the user can use other system included in SANA registry.  The note clarifies that point to the reader. |
| 1. Sec 1-7 - New reference to SANA Registry of Time Systems is required. | 1 | The following shall be added:  [15] “Time Systems.”  Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/time_systems/> | This reference shall be added for consistency with changes in Annex B.1. |
| 1. Sec 1-7 - New reference to SANA Registry of Orbit Centers is required. | 2 | The following reference shall be added:  [16] “Orbit Centers.”  Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/orbit_centers/> | This reference shall be added for consistency with changes in Annex E2 and other reference to celestial bodies.(see below) |
| 1. Sec 3.3.2.11 – Table 3-12  Acceptable values from SANA registry missing. | 1 | Update the Elements description for **Ephemeris object** to (changes in red):  ephObject element of data type ***String*** specifying the celestial object name contained in the ephemeris according to reference [9] **or reference [16]** as default**, if the object is defined in any of these references, otherwise a user defined value is acceptable**. | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.4.2.2 – Table 4-5 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.5.2.2 – Table 4-7 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.6.2.3 – Table 4-9 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.7.2.3 – Table 4-11 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.8.2.3 – Table 4-13 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.9.2.2 – Table 4-15 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.10.2.2 – Table 4-17 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 4.11.2.2 – Table 4-19 Acceptable values from SANA registry missing. | 2 | Update the Allowed values for %targetBodyName% to (changes in red):  Value given in reference [9] **or reference [16]** | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 5.4.3.5  Acceptable values from SANA registry missing. | 2 | Update the section wording to (changes in red):  The definition section shall identify the orbital references involved in the pointing request. This can be provided either as ephemeris files, e.g., OEM, or as a common designator of a celestial body, i.e., from reference [9] **or reference [16]**. | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 5.4.3.7.2 Acceptable values from SANA registry missing. | 2 | Update the section wording to (changes in red):  The definition section shall identify all required celestial bodies trajectories through their common designators (according to reference [9] **or reference [16]**). | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Sec 5.4.3.7.2 - NOTE  Acceptable values from SANA registry missing. | 3 | Update the section wording to (changes in red):  The contents of the parameter name in the orbit element is a user provided value. The actual value defining the ephemerides according to reference [9] **or reference [16]** is the value of the element ephObject. | In addition to the celestion object names in ref [9], the user can used the values defined in the SANA registry. |
| 1. Annex E2 Missing references to the use of SANA registries. | 1 | Update the section wording to (changes in red, removed in strikethrough):  The following PRM related items are registered with the SANA Operator.  – The PRM XML templates (see reference [14]).2  The following PRM elements should be from the SANA registry:  – the spacecraft names that appear as origin and target in the PRM (see reference [10]);  – the PRM originators (see reference [11]).  **– the PRM time system, for which values from Annex B1 or reference [15] can be used.**  **– the celestial bodies, for which values from reference [9] or reference [16] can be used.**  **– the PRM reference frames, for which values from Annex B2, reference [17], reference [18] or reference [19] can be used.**  **~~The use of reference [9] is a convenient solution of the identification of celestial bodies in absence of a corresponding SANA reference.~~** For spacecraft the common identifiers in the SANA registry shall be preferred.  **For celestial bodies, the name in reference [9] or reference [16] shall be used, if the object is defined in any of these references, otherwise a user defined value is acceptable.**  The registration rule for new entries in the registry is the approval of new requests by the CCSDS Area or Working Group responsible for the maintenance of the PRM at the time of the request. New requests for this registry should be sent to SANA (mailto:info@sanaregistry.org). | The use of SANA registry currently available and referred in other changes shall be added. |
| 1. Annex B.2  Acceptable values from SANA registry missing. | 1 | To be included in a new paragraph after the table.  NOTE - In addition to the REFERENCE\_FRAME keywords defined above, it is also acceptable to use the keywords enumerated in the SANA Registry of Celestial Body Reference Frames, as defined in reference [17], the keywords enumerated in the SANA Registry of Orbit-Relative Reference Frames, as defined in reference [18], and the keywords enumerated in the SANA Registry of Spacecraft Reference Frames, as defined in reference [19]. | In addition to the REFERENCE\_FRAME values presented in the table, the user can use other system included in SANA registry.  The note clarifies that point to the reader. |
| 1. Sec 1-7 - New reference to SANA Registry of Celestial Body Reference Frames is required. | 1 | The following reference shall be added:  [17] “Celestial Body Reference Frames.”  Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/celestial_body_reference_frames/> | This reference shall be added for consistency with changes in Annex B.2 |
| 1. Sec 1-7 - New reference to SANA Registry of Orbit-Relative Reference Frames is required. | 1 | The following reference shall be added:  [18] “Orbit-Relative Reference Frames.”  Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/orbit_relative_reference_frames/> | This reference shall be added for consistency with changes in Annex B.2 |
| 1. Sec 1-7 - New reference to SANA Registry of Spacecraft Reference Frames is required. | 1 | The following reference shall be added:  [19] “Spacecraft Body Reference Frames.”  Space Assigned Numbers Authority (SANA).  <https://sanaregistry.org/r/spacecraft_body_reference_frames/> | This reference shall be added for consistency with changes in Annex B.2 |