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The Consultative Committee for Space Data Systems

**PROCEDURES FOR
SANA REGISTRY
SPECIFICATION**

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YELLOW BOOK

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CCSDS Secretariat
National Aeronautics and Space Administration
Washington, DC, USA
E-mail: secretariat@mailman.ccsds.org

FOREWORD

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DOCUMENT CONTROL

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE

This document defines procedures for CCSDS Working Group (WG) interactions with the CCSDS Space Assigned Numbers Authority (SANA) for the purpose of creating and modifying SANA registries.

1.2 APPLICABILITY

The procedures defined herein apply to the development and approval phases of normative projects in the purview of the CCSDS Areas.

1.3 RATIONALE

Clear procedures for interaction with SANA are needed in order to assure consistency in CCSDS Area and Working Group interactions with SANA.

1.4 NOMENCLATURE

1.4.1 NORMATIVE TEXT

The following conventions apply for the normative specifications in this Recommended Standard:

- a) the words 'shall' and 'must' imply a binding and verifiable specification;
- b) the word 'should' implies an optional, but desirable, specification;
- c) the word 'may' implies an optional specification;
- d) the words 'is', 'are', and 'will' imply statements of fact.

NOTE – These conventions do not imply constraints on diction in text that is clearly informative in nature.

1.4.2 INFORMATIVE TEXT

In the normative section of this document (section 3), informative text is set off from the normative specifications either in notes or under one of the following subsection headings:

- Overview;
- Background;
- Rationale;
- Discussion.

1.5 REFERENCES

The following publications contain provisions which, through reference in this text, constitute provisions of this document. At the time of publication, the editions indicated were valid. All publications are subject to revision, and users of this document are encouraged to investigate the possibility of applying the most recent editions of the publications indicated below. The CCSDS Secretariat maintains a register of currently valid CCSDS publications.

- [1] *Space Assigned Numbers Authority (SANA)—Role, Responsibilities, Policies, and Procedures*. Issue 2. CCSDS Record (Yellow Book), CCSDS 313.0-Y-2. Washington, D.C.: CCSDS, April 2016.
- [2] *CCSDS SANA Registry Management Policy*. Issue 1. CCSDS Record (Yellow Book), CCSDS 313.1-Y-1. Washington, D.C.: CCSDS, April 2016.

2 OVERVIEW

2.1 BACKGROUND

During development of new standards a working group may identify the need to define and access certain kinds of data, both static and dynamic, that could usefully be placed in an on-line registry instead of in a formal, and infrequently updated, document. For this purpose a new on-line registry could be created or an existing registry could be extended with new fields or identifiers.

2.2 SANA REGISTRY MODEL

The SANA and the SANA Operator provide the framework and the machinery for managing, registering, updating, and accessing these data. The set of registries in the SANA belong to one of three separate categories: Enterprise, Global, and Local/WG. These categories are described in the RMP. Figure 2-1 provides a view of all of the identified registry categories.

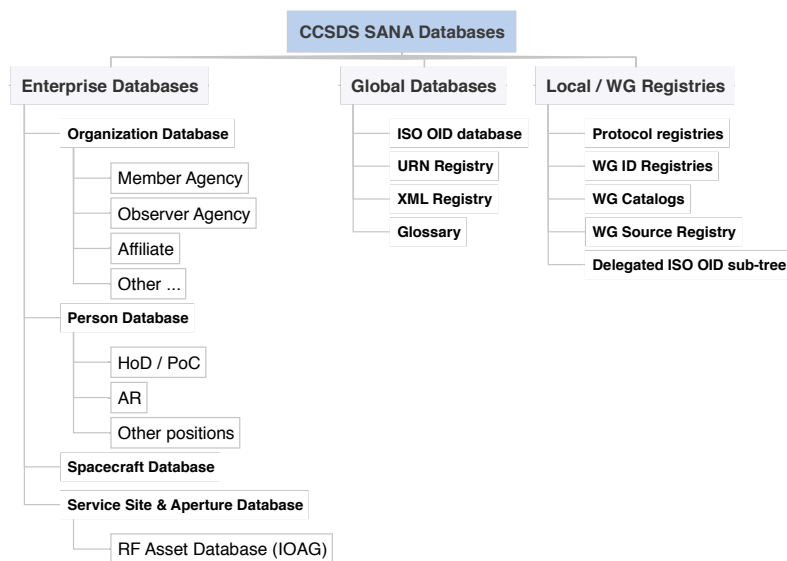


Figure 2-1: Overall SANA Registry Model

Many of the registries are in the Local/WG category, but they may make use of information in the Enterprise or Global registries.

2.3 CCSDS AREA AND WORKING GROUP REGISTRY OVERVIEW

The overall policies and procedures for the SANA and its operation are described in the SANA Yellow Book (see reference [1]). The SANA Yellow Book also defines the SANA Considerations section required in all standards that define registries. The SANA Registry Management Policy (RMP) document describes the specific policies and procedures that the SANA Operator and the CCSDS Areas, Working Groups, and users are to follow for the Enterprise and Global registries and for the development of new registries or extensions to existing registries. The RMP also has all of the details of the design of these Enterprise and Global registries and the processes for managing and extending them.

A WG should contact the SANA Operator (info@sanaregistry.org) to explore possible approaches for meeting their registry needs. The SANA Steering Group (ssg@mailmain.ccsds.org) may also be consulted. It is strongly recommended that the WG initiate discussions with the SANA Operator as early in the standards development process as possible. The SANA Operator will meet with the WG, describe the registry process, and help determine the best structure for the registry. One possible outcome of these discussions may be to determine that no registry is needed. But if a registry is needed the SANA Operator will create a candidate registry once the design is stable, and this can be used for evaluation, testing, and document review.

When a Working Group (WG) is developing a new standard that requires a registry it must understand the overall SANA context and contents, which are to be found at <http://sanaregistry.org>. Each SANA registry includes a description, the source reference, a pointer to the registration policy and the Review Authority for the registry, as well as pointers to any source document(s).

Before a new registry is proposed, or before changes to an existing registry are made, the WG must determine if re-use or extension of existing capabilities would be satisfactory. If extension of an existing registry, of any category, seems most appropriate then the proposer must contact the Review Authority for the existing registry to explore the possible options. Every effort should be made to re-use, or make simple, conformant, extensions to existing capabilities wherever possible. The SANA Operator will play a role in facilitating this.

The following describes the overall workflow for a WG to define and develop a new registry. Depending on the WG and its familiarity with the process the flow may differ considerably from what is described.

- a) Identify a need for a registry related to a new standard.
- b) Discuss the proposed registry requirements and design with the SANA Operator (info@sanaregistry.org) and, if necessary, the SSG (ssg@mailmain.ccsds.org).
- c) Explore the SANA to see if there is an existing registry that either meets the need or that can be easily adapted to do the new task.
- d) Evaluate how best to use or adapt existing registries, where that appears to be feasible, and discuss the approach with the affected organization.



- e) Develop an initial registry design prior to initial Red Book finalization and describe it in the draft SANA Considerations section. Work with the SANA Operator to create the **prototype** registry prior to the start of interoperability testing, and exercise the registry during testing.
- f) Document the registry policies, registration rules, and Review Authority, and if necessary the Registration Authority.
- g) Include a completed SANA Considerations section in the final document, pointing to the new registry and describing any other related registry extensions such as new roles added to Organization or Contacts Registries.
- h) Work with the SANA Operator to document the final registry design prior to Red Book agency review.
- i) Work with the SANA Operator to promote the registry from Candidate to Approved status prior to Blue Book publication.
- j) Participate, as needed, in any registry review or request for extensions after it has been published.

3 INTERACTIONS WITH SANA

3.1 OVERVIEW

This section describes the overall process for CCSDS Areas or Working Groups who wish to develop new registries or extend existing registries.

3.2 CCSDS AREA AND WORKING GROUP REGISTRY PROCESSES

3.2.1 Every CCSDS Area or Working Group that identifies a potential requirement for a new registry shall contact the SANA Operator at the earliest opportunity, well prior to final draft specification:

- a) contacting the SANA Operator shall be accomplished by sending an e-mail request to info@sanaregistry.org;
- b) the request shall contain relevant information concerning the creation or modification of one or more registries:
 - 1) for new registries:
 - the name of the registry,
 - a short description of the registry purpose,
 - the structure of the registry (column names, ...),
 - a precise data type for each data item, including boundaries;
 - registration rule governing how the SANA operator will assign new parameters to that registry (see reference [1]),
 - registry category and Review Authority (see reference [1]);
 - 2) for existing registries:
 - the name of the registry,
 - a description of the requested modification,
 - any other relevant information.

NOTE – It is expected that the initial request to SANA will involve a dialog between the requestor and the SANA Operator in which questions are answered and particular requirements are discussed and accommodated.

3.2.2 Every CCSDS Area or Working Group requiring a registry shall evaluate the existing registries in the SANA for re-use or adaptation.

3.2.3 Any requirement for a registry referencing agencies, organizations, commercial entities, universities, or other service providers shall use or extend the existing Organization Registry.

3.2.4 Any requirement for a registry referencing contacts who are members of a CCSDS agency or other registered organization shall use or extend the existing Contacts Registry.

3.2.5 Any requirement for a registry referencing spacecraft shall use or extend the existing Spacecraft Registry.

3.2.6 Any requirement for a registry referencing service providers, sites, or apertures shall use or extend the existing Service Site and Aperture Registry.

3.2.7 If direct use of an Organization, Contacts, Service Site and Aperture, or Spacecraft Registry is possible the standard shall point to the existing registries.

3.2.8 If new roles or other attributes are required the standard shall define these extensions and coordinate them with the SANA and the Review Authority for the affected registries.

3.2.9 Any requirement for a registry referencing global data, SANA, Terminology/Glossary, XML, URN, or OID shall use or extend an existing global category registry.

3.2.10 If direct use of a global category registry is possible the standard shall point to the existing registries.

3.2.11 If extension to a global category registry appears to be required the Area or Working Group shall contact the appropriate Review Authority for the affected registry.

3.2.12 Any requirement for a local category, Area, or Working Group registry shall evaluate use or extension of one of the existing registries, either within the Area or in another Area.

3.2.13 If extension to an existing local category registry appears to be required the Area or Working Group shall contact the Review Authority for the affected registry.

3.2.14 In some cases it may be appropriate to adapt, extend, or promote a local registry to a global category registry. Any such proposals shall be reviewed with the SSG and the originator of the registry.

3.2.15 All new registries, or extensions to existing registries, shall be defined in a CCSDS Blue or Magenta Book, or a CCSDS normative Yellow Book such as this one.

3.2.16 The registry definition shall include the registry name, description, specifications (data structures and types), and registration rules as described in reference [1].

3.2.17 Each working meeting of any CCSDS group that acts a Review Authority shall, when necessary, review and disposition proposed changes, additions, or deletions to any existing registries and contact points under their purview.

3.2.18 Every Working Group that defines or modifies a registry shall use that registry during the interoperability testing that is required prior to publication of the standard.

NOTE – This does not require exercise of any programmatic interfaces as part of interoperability testing, but it does require the registry to exist, be populated with relevant data, and be used for its intended purpose during testing.

3.2.19 The standards that define or modify registries shall reference them by name. The URL for the SANA itself may also be included (<http://sanaregistry.org>).

3.3 CESG VERIFICATION

The CESG shall verify that any new or modified registry has been created and tested prior to standard publication. When a new candidate registry has been created, the SANA Operator shall inform the CESG by submitting a resolution, as defined in the subsection 3.6 of reference [1].