

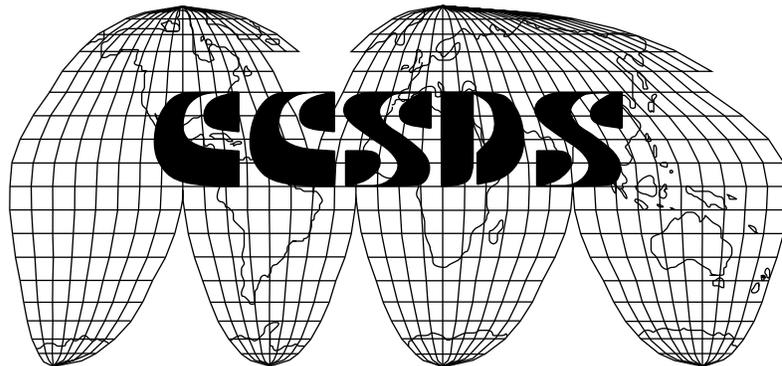
***Consultative
Committee for
Space Data Systems***

**PROCEDURES MANUAL
FOR THE
CONSULTATIVE COMMITTEE
FOR
SPACE DATA SYSTEMS**

CCSDS A00.0-Y-8

YELLOW BOOK

July 2002



FOREWORD

The Consultative Committee for Space Data Systems (CCSDS) was organized in January 1982. It provides a forum for space agencies interested in mutually developing **standard** data handling techniques to support space research, including space science and applications, conducted exclusively for peaceful purposes.

The primary products of the CCSDS are technical **Recommendations** that guide internal developments of compatible **standards** within each participating space Agency. It is believed that the CCSDS activities will significantly enhance the planning and execution of future cooperative space missions. An intrinsic contribution of the CCSDS **Recommendations** is the expected higher degree of interoperability among Agencies that observe the **Recommendations**.

The fundamental operating principle of the CCSDS is consensus. CCSDS **Recommendations** represent an approach that the Member Agencies agree is the best resolution feasible.

Although CCSDS **Recommendations** do not bind CCSDS members, member endorsements signal the following intentions:

- o Whenever an Agency establishes a CCSDS-related **standard**, this **standard** will be in accord with the relevant **Recommendation**. Establishing such a **standard** does not preclude other provisions which an Agency may develop.
- o Whenever an Agency establishes a CCSDS-related **standard**, the Agency will provide other CCSDS member Agencies with the following information:
 - The **standard** itself;
 - The anticipated date of initial operational capability;
 - The anticipated duration of operational service.
- o Specific service arrangements shall be made via memoranda of agreement. Neither a **Recommendation** nor any ensuing **standard** is a substitute for a memorandum of agreement.

At time of publication, the active Member and Observer Agencies of the CCSDS were:

Member Agencies

- Agenzia Spaziale Italiana (ASI)/Italy.
- British National Space Centre (BNSC)/United Kingdom.
- Canadian Space Agency (CSA)/Canada.
- Centre National d'Etudes Spatiales (CNES)/France.
- Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)/Germany.
- European Space Agency (ESA)/Europe.
- Instituto Nacional de Pesquisas Espaciais (INPE)/Brazil.
- National Aeronautics and Space Administration (NASA)/USA.
- National Space Development Agency of Japan (NASDA)/Japan.
- Russian Space Agency (RSA)/Russian Federation.

Observer Agencies

- Austrian Space Agency (ASA)/Austria.
- Central Research Institute of Machine Building (TsNIIMash)/Russian Federation.
- Centro Tecnico Aeroespacial (CTA)/Brazil.
- Chinese Academy of Space Technology (CAST)/China.
- Commonwealth Scientific and Industrial Research Organization (CSIRO)/Australia.
- Communications Research Centre (CRC)/Canada.
- Communications Research Laboratory (CRL)/Japan.
- CSIR Satellite Applications Center (SAC)/South Africa.
- Danish Space Research Institute (DSRI)/Denmark.
- European Organization for the Exploitation of Meteorological Satellites (EUMETSAT)/Europe.
- European Telecommunications Satellite Organization (EUTELSAT)/Europe.
- Federal Service of Scientific, Technical & Cultural Affairs (FSST&CA)/Belgium.
- Hellenic National Space Committee (HNSC)/Greece.
- Indian Space Research Organization (ISRO)/India.
- Institute of Space and Astronautical Science (ISAS)/Japan.
- Institute of Space Research (IKI)/Russian Federation.
- KFKI Research Institute for Particle & Nuclear Physics (KFKI)/Hungary.
- Korea Aerospace Research Institute (KARI)/Korea.
- Ministry of Communications (MOC)/Israel.
- National Oceanic & Atmospheric Administration (NOAA)/USA.
- National Space Program Office (NSPO)/Taipei.
- Space & Upper Atmosphere Research Commission/Pakistan.
- Swedish Space Corporation (SSC)/Sweden.
- United States Geological Survey (USGS)/USA.

DOCUMENT CONTROL

Document	Title	Date	Status
CCSDS A00.0-Y-4	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 4.	September 1990	Superseded
CCSDS A00.0-Y-5	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 5.	May 1992	Superseded
CCSDS A00.0-Y-6	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 6.	May 1994	Superseded
CCSDS A00.0-Y-7	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 7.	November 1996	Current issue: <ul style="list-style-type: none"> - introduces on-line documentation procedures - eliminates several annexes whose content is too dynamic - revises procedures governing new work - introduces corrigendum procedures
CCSDS A00.0-Y-7.1	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 7, Interim Update 1.	May 1997	Interim update to issue 7: <ul style="list-style-type: none"> - modifies and clarifies corrigendum procedure - updates Agency list, distribution forms, and Secretariat address
CCSDS A00.0-Y-7.2	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 7, Interim Update 2.	June 1998	Second interim update to issue 7: <ul style="list-style-type: none"> - incorporates editorial updates - updates TSG charter

Document	Title	Date	Status
CCSDS A00.0-Y-7.3	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 7, Interim Update 3	November 1999	Third interim update to issue 7: a) adds 60 day limitation re delivery of RBs and BBs to document editor; b) adds text re document editor placing RBs and BBs on line; c) adds cautionary notes about not implementing to RB contents and to consult Web for latest BB version.
CCSDS A00.0-Y-7.4	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 7, Interim Update 4	January 2001	Fourth interim update to issue 7: This update results from a review conducted to assure all approved changes have been incorporated. Current changes are indicated by change bars in the margin.
CCSDS A00.0-Y-8	Procedures Manual for the Consultative Committee for Space Data Systems, Issue 8	July 2002	Deletes obsolete procedures

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1 INTRODUCTION

This Procedures Manual describes the principles and details governing the CCSDS. The document addresses the objectives, organization, participation, operations, and management of CCSDS activities. It has been prepared by the CCSDS Management Council and is maintained by the CCSDS Secretariat.

Questions about the contents or status of this document should be directed to the CCSDS Secretariat, identified in annex A.

The CCSDS domain of interest is contained in its charter, which is presented in reference [1].

1.1 PURPOSE

This document has two major purposes:

- to describe the organization of and the participation in the CCSDS;
- to define the procedures governing the operation and management of the CCSDS.

1.2 SCOPE

This document is intended to serve as a guide for the development, review, acceptance, and distribution of CCSDS products within the CCSDS Member Agency community and for the management of these activities.

The document also serves as a model for more detailed operational guidelines developed by individual CCSDS technical panels. These panel documents may provide further specifics oriented to their respective panel; however, panel-specific guidelines cannot be in conflict with this document.

1.3 APPLICABILITY

This Procedures Manual applies to all CCSDS-related activities.

1.4 RATIONALE

A complete and detailed manual of procedures for CCSDS activities will result in the achievement of CCSDS objectives in an orderly and effective manner.

1.5 DOCUMENT STRUCTURE

This document is organized as follows:

- Section 1 addresses the purpose and scope of this document and defines terms associated with CCSDS products.
- Section 2 provides a brief overview of the document and the general areas it addresses.
- Section 3 deals with the organization of and participation in the CCSDS. It details the internal structure and outlines the responsibilities of each component. Additionally, it presents the alternative levels of association open to those organizations wishing to participate.
- Section 4 presents the operational procedures for the organization and provides details on the products and methodologies.
- Section 5 addresses document development, providing procedures for development and progression of CCSDS documents, as well as change control methods.
- Section 6 addresses document management in the areas of document numbering, distribution, and archive functions.
- The annexes contain additional supporting information such as charters, forms, numbering systems, and so forth.

1.6 CONVENTIONS AND DEFINITIONS

1.6.1 TERMS

- a) An **agency** is an organization empowered to perform functions on behalf of a national government; initial capitalization indicates a CCSDS Member or Observer **Agency**.
- b) A **CCSDS Recommendation** is a technical proposal formulated to provide a basis for formal Agency-internal standards. Recommendations reflect Member Agency consensus on the future technical direction that their standardization programs should take. Agency concurrence with a Recommendation implies an intent to reflect its provisions in future data systems standards developed through Agency-internal mechanisms.
- c) A **standard** is an Agency-internal document containing a formal specification which defines and governs functions and protocols at interfaces between major subsystems of an Agency's data system. It describes in detail the existing or firmly planned capabilities and establishes the requirements to be met by interfacing subsystems to

achieve compatibility. An approved standard implies a commitment of hardware and software to achieve the standardized functions.

The CCSDS efforts toward common standardization relate to functional capabilities and are not intended to imply standardized implementation of hardware or software.

- d) A **CCSDS Technical Report** is a document developed primarily as a companion document to a draft Recommendation. It supports the draft Recommendation by
- providing information relevant to the requirements which that Recommendation addresses;
 - describing the rationale for the particular design choices made within that Recommendation;
 - furnishing auxiliary information to aid the reviewers’ understanding of that Recommendation.

Additionally, CCSDS Reports

- provide general technical guidance regarding the use of Agency facilities;
- present engineering analyses and results for space data systems design options;
- serve as guides to aid software development.

CCSDS Reports can provide convenient references for space mission designers and others interested in assessing the relevant item for their particular application.

1.6.2 COLORS

CCSDS documents are given distinctive cover colors which visually indicate their status and maturity. The development process by which documents achieve a given color/status is described in section 5.

a) **CCSDS White Book**

A White Book (WB) is a preliminary draft of a planned CCSDS Recommendation or Report. All such documents under development are given a white cover to indicate their preliminary status. White Books are generated in response to concept papers or New Work Item (NWI) proposals. CCSDS White Books are preliminary documents and as such are not necessarily endorsed by any CCSDS Member or Observer Agency **or given any CCSDS-external distribution.**

b) **CCSDS Red Book**

A Red Book (RB) is a draft of a CCSDS technical Recommendation. It describes the technical consensus within a panel and may incorporate unofficial Agency comments received at the “working level.” A Red-Book status indicates that the CCSDS

believes that the document is technically mature and ready for extensive and formal review by appropriate technical organizations within each Member Agency. Official Member Agency comments about (or approval of) the RB are sought. Several iterations of an RB may occur in response to iterations in the Agency review process.

c) **CCSDS Blue Book**

A Blue Book (BB) is a Recommendation. It reflects resolution of official comments from Member Agencies during formal reviews, and, as such, represents the consensus of the appropriate implementing organizations within each Member Agency. Member Agency approval of a Blue Book implies an intent to reflect its provisions in future data systems standards developed through internal mechanisms.

d) **CCSDS Green Book**

A Green Book (GB) is a Technical Report; it is not a specification. Green Books are developed to: (a) assist Agencies during their RB review to understand the requirements and rationale for the specific contents of the RB; (b) present engineering analyses and results for space data systems design options; and (c) provide general technical guidance regarding the use of Member Agency facilities. Green Books provide convenient references for space mission designers and others interested in assessing the relevant item for their particular application.

NOTE – Prior to MC Approval, Green Books are referred to as Draft Reports.

e) **CCSDS Yellow Book**

A Yellow Book (YB) is a non-technical administrative document or report. (This Procedures Manual is a CCSDS Yellow Book.) YBs are not ordinarily distributed outside the CCSDS.

f) **CCSDS Pink Sheets/Pink Book**

In order to allow for future flexibility and respond to technological innovations, provisions for modifications to the Blue Book must be incorporated. All Blue Books are, therefore, subject to the document change control and management procedures which are defined in sections 5 and 6. Pink Sheets represent a set of proposed change pages to part(s) of an existing CCSDS Blue Book. A Pink Book represents a complete revision to an existing CCSDS Blue Book.

g) **Externally Developed Standards**

When applicable, externally developed standards will be incorporated into the CCSDS suite of Recommendations. The externally developed standards will be subjected to the same development and review processes as the CCSDS Red and Blue documents.

1.6.3 NOMENCLATURE

The following conventions apply throughout this Manual:

- 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.

1.7 REFERENCES

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

- [1] *Strategic Plan of the Consultative Committee for Space Data Systems.* CCSDS A01.1-Y-1. Yellow Book. Issue 1. Washington, D.C.: CCSDS, December 1999.
- [2] *CCSDS Operating Plan for Standards Development.* CCSDS A01.2-Y-1. Yellow Book. Issue 1. Washington, D.C.: CCSDS, December 1999.
- [3] *CCSDS Publications Manual.* CCSDS A20.0-Y-1. Yellow Book. Issue 1. Washington, D.C.: CCSDS, May 1994.

2 OVERVIEW

As awareness of, interest, and participation in CCSDS activities by the general space community increase, it is important that the CCSDS program become more formalized and that that formalization be kept current. This Manual serves as instruction in CCSDS practices for new CCSDS participants and as a mechanism for resolving and clarifying any confusion or misunderstanding resulting from past activities.

As such, this Manual seeks to

- a) identify the CCSDS organization together with the responsibilities and staffing of each component part;
- b) explain the several types and levels of CCSDS association which interested parties can consider;
- c) describe the nature of CCSDS products and the procedures followed for the development of these products;
- d) offer more detailed information about the CCSDS itself.

3 ORGANIZATION AND PARTICIPATION

The CCSDS functions through five principal organizational entities:

- a) Management Council;
- b) Secretariat;
- c) Technical Steering Group;
- d) Technical Panels;
- e) Ad Hoc Advisory Groups.

3.1 ORGANIZATION

The CCSDS is organized as shown in Figure 3-1.

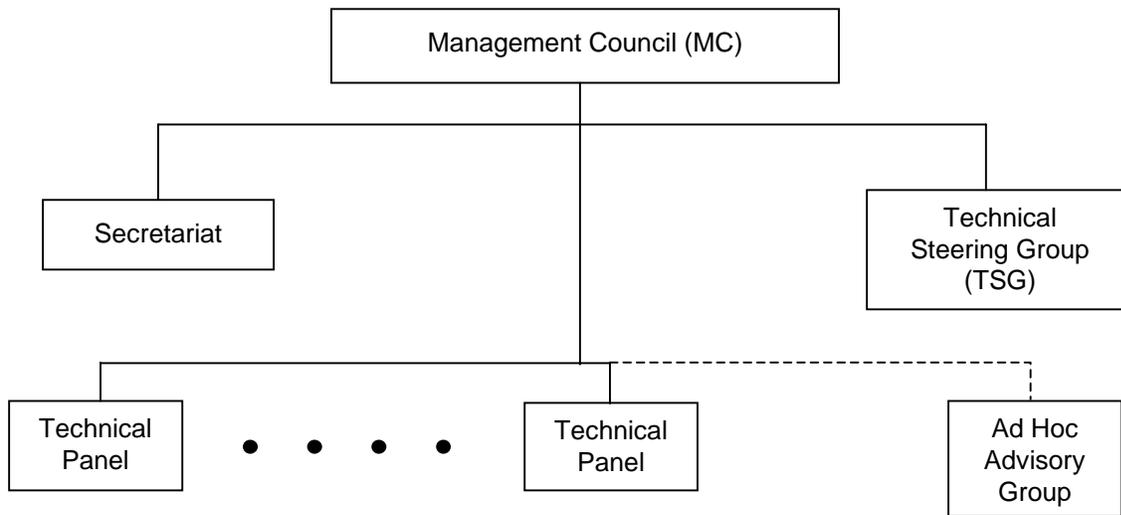


Figure 3-1: CCSDS Organization

3.1.1 THE MANAGEMENT COUNCIL

3.1.1.1 Function and Membership Criteria

The Management Council (MC) is the executive body of the CCSDS and is composed of the CCSDS Member Agencies' Heads of Delegation.

3.1.1.2 Duties and Responsibilities

The MC shall

- a) provide leadership to and long-term objectives for the CCSDS program;
- b) establish the number and types of technical panels by which the CCSDS program is conducted;
- c) appoint technical panel chairpersons, the CCSDS Secretariat, and the chairperson of the Technical Steering Committee;
- d) periodically review the CCSDS organizational structure to determine the need for any change, including the establishment and dissolution of technical panels;
- e) periodically review the CCSDS membership to determine the advisability of any assignment changes of officers and/or members;
- f) review, evaluate, and approve technical panels' programs of work;
- g) review, evaluate, and approve for release and external distribution all CCSDS Recommendations and Reports developed by the technical panels, and encourage participating Agencies to develop and implement corresponding Agency-internal standards;
- h) determine the need for external liaisons or informational studies, approve new work proposals relative to conducting these, and assign such work to Ad Hoc Advisory Groups or technical panels to develop;
- i) issue invitations, via the Secretariat, to new agencies and other organizations to participate in CCSDS in an appropriate capacity;
- j) control major elements on the CCSDS web site, and approve changes thereto;
- k) members, in their roles as Heads of Delegation to CCSDS, shall:
 - 1) understand their individual agency's constraints and legal issues concerning the making of Agency-developed products (hardware and software) available to other Agencies;
 - 2) seek exemption from said constraints and legal issues for all hardware and software as may be produced internally or under contract by said Agency for the development of CCSDS-related components, so as to allow for free and unrestricted use of these products by the participating CCSDS Agencies.

3.1.2 THE SECRETARIAT

3.1.2.1 Function and Selection Criteria

The Secretariat provides general secretarial and administrative support to the CCSDS MC. One of the Member Agencies shall be appointed by the MC to serve as the Secretariat on a rotating basis.

3.1.2.2 Duties and Responsibilities

The Secretariat shall

- a) carry out the responsibilities of CCSDS MC as prescribed in the CCSDS Charter (the current CCSDS Charter is contained in reference [1]);
- b) serve as chair of the Management Council meeting;
- c) ensure continuity and coordination of all activities of the CCSDS;
- d) provide administrative support as appropriate to the CCSDS organizational entities;
- e) provide logistical support for the editing and publication of the CCSDS Recommendations and Reports;
- f) maintain the CCSDS Procedures Manual and other MC documentation;
- g) register proposals for new studies and Recommendations;
- h) coordinate CCSDS document management, maintain document inventory, and distribute CCSDS documents when requested;
- i) execute decisions of the MC.

3.1.3 THE TECHNICAL STEERING GROUP

3.1.3.1 Function and Membership Criteria

The Technical Steering Group (TSG) shall provide overall technical advice and counsel to the CCSDS MC. It shall be composed of panel and subpanel chairpersons and selected technical experts from the several panels; the chairperson shall be selected from the current complement of panel chairpersons. Members of the MC are encouraged to participate in all TSG meetings.

3.1.3.2 Duties and Responsibilities

The TSG shall

- a) prepare for MC approval a Charter/Terms of Reference document which articulates its specific Purpose and Scope as assigned by the MC (the current TSG charter is contained in annex D);
- b) develop the overall requirements for CCSDS activities based on future space projects and technology programs;
- c) assist the technical panel chairpersons in adapting their existing work plans to these requirements;
- d) assist in the technical harmonization of CCSDS activities;
- e) maintain a set of CCSDS reference models against which NWI proposals may be evaluated and prioritized;
- f) assist the technical panel chairpersons in adapting their existing work plans to the requirements of the *CCSDS Operating Plan for Standards Development* (CCSDS A01.2-Y-1).

3.1.4 TECHNICAL PANELS

3.1.4.1 Function and Membership Criteria

The panels provide discipline-oriented forums for detailed discussions within the CCSDS and develop technical Recommendations in specific assigned areas of space mission data system interoperability. Panel membership shall be composed of appropriate technical experts from among the CCSDS Member and Observer Agencies.

3.1.4.2 Duties and Responsibilities

Each technical panel shall

- a) prepare for MC approval a Charter/Terms of Reference document which articulates its specific Purpose and Scope as assigned by the MC (current panel charters are contained in reference [2]);
- b) prepare for TSG/MC approval a Program of Work by which it will conduct its assigned work; the program of Work should establish schedules and identify any necessary resources as well as specific end items;

- c) provide discussion forums in specific technical areas;
- d) develop and propose NWIs to the TSG/MC for approval;
- e) accept NWIs from the MC and develop subsequent Reports and Recommendations;
- f) assist in the coordination and resolution of official Member Agency comments on Recommendations;
- g) propose these Reports and Recommendations to the MC for approval and release.

The domain of interest of each technical panel (existing as of the date of this document) is contained in each panel's respective charter (panel charters are presented reference [2]).

3.1.5 AD HOC ADVISORY GROUPS

3.1.5.1 Function and Formation Criteria

Ad Hoc Advisory Groups provide temporary technical assistance and advice to the MC or the TSG on single, specific questions or issues assigned by either body. Members can be selected from within any Member or Observer Agency or, in specific instances, may be contracted for with an external source.

3.1.5.2 Duties and Responsibilities

Ad Hoc Advisory Groups shall develop position papers and information reports as appropriate for MC and/or TSG review and decision.

3.2 PARTICIPATION

Participants in the CCSDS are classified in one of four categories: Member Agency, Observer Agency, Liaison, or Associate. Any organization wishing to participate in the CCSDS activity should petition the CCSDS Secretariat in writing requesting permission to participate in one of the four categories as defined below. In the case of an application for Member Agency, Observer Agency, or Liaison status, the CCSDS Secretariat shall present each request to the MC for consideration and approval. Following the MC decision, the Secretariat shall notify the agency or organization of the result.

In the case of a request for CCSDS Associate status, the organization is approved once the application has been

- completed by the applicant;
- approved by the Principal Delegate of the sponsoring Member or Observer Agency;

- signed by the CCSDS Secretariat.

Generally, the sponsoring Agency and CCSDS Associate shall be from the same country; however, multinational organizations (e.g., ESA) can sponsor Associates provided that the proposed Associate is from a country that is affiliated with the sponsoring Agency.

3.2.1 MEMBER AGENCY

Only agencies having significant responsibilities for space development, operations, or research may participate as CCSDS Member Agencies. Furthermore, Member Agencies shall be governmental or quasi-governmental organizations and shall indicate a willingness to participate substantially in CCSDS activities (including attendance at MC meetings) and provide a commensurate level of support. They shall notify their approval of the Charter and shall make their best effort to ensure the adherence of their internal standards to the applicable Recommendations of the CCSDS.

No more than one agency representing a given country or multinational organization may participate as a Member Agency of the CCSDS. However, the number of such national or multinational agencies that may participate as Observer Agencies is not limited.

3.2.2 OBSERVER AGENCY

Observer Agencies are organizations that have a strong interest in space development, operations, or research. CCSDS Observer Agencies are those agencies that indicate a desire to participate in CCSDS activities but at a reduced level of effort. Observer Agencies are encouraged to maintain their internal standards so as to be compatible with the applicable Recommendation of the CCSDS.

3.2.3 LIAISON

Liaison organizations are those governmental or private activities which have developmental programs in the areas of space-related data and information systems.

Liaison status is open to non-commercial, standards-developing organizations operating in areas similar to those of the CCSDS. Liaison organizations receive all CCSDS documentation released for external dissemination; they are welcome to submit comments or initiate Review Item Dispositions (RIDs) on CCSDS review documents.

3.2.4 ASSOCIATE

Scientific or industrial organizations may participate as Associates, provided they are sponsored by a Member or Observer Agency in their country. CCSDS Associates are those

industrial or academic organizations which indicate a desire to monitor closely CCSDS activities. Associates receive all CCSDS documentation released for external dissemination. They are welcome to submit comments or RIDs on CCSDS review documents. The procedure relative to RID submission is at the election of the sponsoring agency. Associates may participate in CCSDS technical meetings and discussion forums with the explicit approval of the sponsoring Member Agency.

3.3 MEMBERSHIP LISTS

The Secretariat shall maintain lists of Member Agencies, Observer Agencies, Liaison organizations, and Associate organizations. These lists are maintained on the CCSDS web site.

4 OPERATIONS

The CCSDS functions primarily through regularly scheduled meetings of its standing bodies, supplemented as necessary by ad hoc meetings, telephone conversations, and correspondence.

English shall be the official language used at all CCSDS-sponsored meetings. Furthermore, CCSDS correspondence, Reports, and Recommendations shall be in English.

Since the primary objective of each CCSDS organizational element is the preparation and discussion of technical documents, it is imperative that the presentations to be considered at meetings be distributed in advance of the meeting to allow sufficient time for study by the attendants prior to the discussions at the meeting.

Ordinarily, presentations should be received by attendants two weeks prior to any meeting. Documents for consideration at technical panel meetings should be received by members four weeks in advance in order to allow time for dispersal and review.

4.1 MANAGEMENT COUNCIL WORKING PROCEDURES

The MC normally functions by way of semiannual meetings at which normal business is addressed. However, on special occasions and/or longer-cycle planning intervals, the MC may hold a CCSDS Plenary Conference in conjunction with CCSDS Observers, Liaison organizations, Associates, and the technical panels. Other interested parties may be invited by the MC.

4.1.1 MANAGEMENT COUNCIL MEETINGS

4.1.1.1 Function and Scheduling Conventions

CCSDS executive planning normally occurs during periodic MC meetings. However, actions and decisions may be taken between meetings by way of telephone or correspondence coordination between the CCSDS Secretariat and official Member Agency Heads of Delegation.

MC meetings shall be scheduled at least two years in advance to allow technical panel meetings to be arranged accordingly. The place and date of each meeting may be adjusted at the previous MC meeting. Nominally an MC meeting will be held in the spring and in the fall of each year.

Meetings shall be conducted according to published agendas so that each Member Agency can properly prepare and so that all important business can be considered.

The Secretariat shall prepare meeting minutes and distribute copies to the MC members, Observer Agencies, liaisons, and all CCSDS panel chairpersons.

4.1.1.2 Management Council Consensus

The CCSDS meeting and decision process discussed in this document is by “consensus among the Member Agencies.” In practice, consensus is interpreted as consensus among the Members present at an MC meeting together with those absent Agencies which have provided a proxy statement on an issue being discussed. This interpretation is necessary to preclude unwarranted delays in the process caused by absenteeism of Member Agencies.

4.1.1.3 Observer Agency Participation

Observer Agencies may attend MC meetings. However, the restriction against Observers’ voting remains applicable. Observers may submit concept or position papers for consideration by the MC.

4.1.1.4 Liaison Participation

Liaison organizations may submit concept or position papers to the Secretariat for consideration by the MC. Liaison organizations may attend MC meetings at the invitation of the MC. An instance of such attendance might be to explain a position paper drafted by the attending Liaison organization.

4.1.1.5 Associate Participation

Associates may submit concept or position papers via their sponsoring Agency for consideration by the MC. Associates may attend MC meetings at the invitation of the MC.

4.1.2 PLENARY CONFERENCE MEETINGS

4.1.2.1 Function and Criteria for Calling

On special occasions, or in response to the need for long-range planning and assessment, Plenary Conferences may be held. The purposes of a Plenary Conference include:

- a) to provide an opportunity to chart a long-range course for future work; and
- b) to provide an opportunity for external liaison with non-affiliated space agencies or other relevant standards bodies.

4.1.2.2 Plenary Conference Participation

Plenary meetings are open to all interested parties. Members of each of the four CCSDS categories are automatically invited to a Plenary Conference. Tutorials on CCSDS activities will be given to individuals involved in space-flight projects and ground support. Assistance in utilization of CCSDS products will be offered. On occasion, members of space-related industries may sponsor exhibits of their CCSDS-compatible products.

4.2 WORKING PROCEDURES FOR MC MEETINGS

Two months before each MC meeting, the Secretariat shall distribute a preliminary agenda and a meeting announcement. The preliminary agenda shall list the new issues to be considered during the discussion of each agenda item together with a list of open action items from previous meetings. Requests for Agency inputs to this draft agenda shall be made at this time. Agency Heads of Delegation are required to indicate the status of their individual action items at this time.

One month before an MC meeting, the Secretariat shall distribute a revised agenda which includes Agency inputs relative to both agenda suggestions and action item status. It is the responsibility of those Agencies submitting papers for discussion at an upcoming meeting to distribute copies of such papers one month prior to that meeting to allow sufficient time for Agencies' review. Agency submissions shall be provided in both electronic and hard-copy forms.

4.3 WORKING PROCEDURES FOR TSG MEETINGS

The TSG shall function in a manner similar to that of the technical panels but with less formality and less structure. In general, the TSG shall not form standing subgroups, but rather shall rely on Ad Hoc Advisory Groups with specific deliverables and limited, specified lifetimes.

The TSG is expected to meet on a schedule that is compatible with that of the MC in order to provide that body with its current status and activities. Otherwise it may hold meetings on an as-needed basis rather than on a formal, regular, or ongoing basis. The decision to meet shall be in response to the request by one of the panel chairpersons or in response to a specific assignment by the MC.

Prior to a meeting, the TSG shall develop an agenda and recommended attendance list. A register of meeting input documents, meeting minutes, and meeting conclusions and recommendations shall be maintained and provided to the Secretariat in both electronic and hard-copy forms. A formal report on each meeting shall be presented to the MC.

Copies of the TSG meeting minutes shall be distributed by the TSG chairperson to all TSG participants, and to the CCSDS Member and Observer Agencies.

4.4 TECHNICAL PANEL WORKING PROCEDURES

4.4.1 TECHNICAL PANEL MEETINGS

Each panel establishes its own schedules and operations in consonance with the general procedures set forth by the MC. The panels develop meeting agendas, meeting announcements, a Membership list, a document register, and meeting reports. Meeting reports shall summarize the major issues and decisions taken at that panel meeting. In addition, a summary report shall be prepared for presentation at the subsequent MC meeting and shall include the status of panel activities and an updated two-year program of work for the panel. Copies of each meeting report shall be distributed by the panel chairperson to all panel participants and to the CCSDS Member Agencies. In addition, a copy shall be sent to the CCSDS Secretariat.

4.4.2 PANEL-INTERNAL CONSENSUS

Technical panels' procedures shall be rigorous in the interest of achieving and demonstrating an orderly and technically competent consensus.

The paramount principle of CCSDS panel procedures is the achievement of consensus in the technical content of the documents produced. This procedure will enable the MC to act decisively at its meetings to adopt or reject a document primarily according to its overall merits and the extent to which it meets particular needs of the Member Agencies, without having to delve into detailed technical arguments left unresolved by the panel.

On no account should a panel transmit a document to the MC if the document does not represent a consensus within the panel. Panels may take polls as a means of identifying the relative support for one or another technical position, but panels may **not** take official votes representing the act of a majority overriding the opinions of a minority.

So as not to inhibit technical discussion, panel members shall be considered to be technical experts and not Agency representatives during panel meetings. Nothing stated during panel meetings shall be considered in any way to be a commitment by any Agency. It is important to note that only CCSDS Member Agencies' Heads of Delegation can commit their respective Agencies to any CCSDS efforts and products.

4.4.3 PARTICIPATION

4.4.3.1 Member Agency

Each Member Agency is expected to name members to all technical panels. Member Agencies are also invited to submit concept or position papers for discussion within the panel.

The Secretariat shall maintain a list of all Member Agencies and the names of Agency Heads of CCSDS delegation.

4.4.3.2 Observer Agency

Observer Agencies are encouraged, but not required, to contribute resources to the panels. Individuals from the Observer Agencies are invited to participate as technical experts.

The Secretariat shall maintain a list of all Observer Agencies and the names of Agency Heads of CCSDS Delegation.

4.4.3.3 Liaison Organizations

Participation by Liaison organizations in panel meetings is encouraged. This participation will facilitate coordination among the organizations as well as promote the exchange of ideas, thereby improving the quality and acceptance of CCSDS products by the user community.

Liaison participation will be accorded by the technical panel chairperson. It is expected that this participation will be oriented more around a particular subject which is of particular interest to the Liaison organization as opposed to a standing involvement. The latter arrangement is, of course, not precluded. In consonance with these arrangements, the panel chairperson will provide to the Liaison organization any relevant material, including documents under development, which may be requested by the Liaison organization.

The Secretariat shall maintain a list of all Liaison organizations and the names of their points of contact.

4.4.3.4 Associate Participation

Associates may submit concept or position papers through their sponsoring Agency. However, they may not participate directly in panel discussions without the explicit approval of that Agency.

The Secretariat shall maintain a list of all Associate organizations and the names of their points of contact.

4.4.4 PANEL MEMBERSHIP LIST

Each panel chairperson shall maintain a current list of panel members.

4.5 AD HOC ADVISORY GROUP WORKING PROCEDURES

The specific purpose of each Group and the schedule of deliverables is defined in its Scope of Work as approved by the MC at the time the Group is established. The end product will normally be a Report, delivered to the Council, containing the results and conclusions of the study related to the assigned issue.

Group meetings shall be scheduled in consonance with a Group's particular needs. The meetings schedules and operating procedures will normally be accelerated in comparison to those of a technical panel.

5 DOCUMENT DEVELOPMENT AND CHANGE CONTROL

The principal products of the CCSDS are Recommendations for space data systems standards. A Recommendation is a consensus technical proposal developed within the CCSDS to serve as a basis for corresponding data systems standards within Member Agencies. CCSDS Recommendations, therefore, are not in themselves standards.

5.1 DOCUMENT DEVELOPMENT

This subsection addresses the chronological procedures by which the several CCSDS document types are developed. These procedures are illustrated in figure 5-1.

5.1.1 NEW WORK ITEM

All proposals for new work which have as their objective the development of a CCSDS Recommendation or Report must

- have the technical recommendation of the TSG; and
- the management approval of the MC.

Each proposed NWI shall be submitted as a Concept Paper (CP) to the TSG and MC. The CP should identify

- the data system area which it is addressing, preferably in the context of the CCSDS High Level Reference Model;
- the perceived advantages to be gained from the establishment of a suitable CCSDS Recommendation;
- a rough estimate of the time and resources required to develop said Recommendation; and
- a reference to any appropriate external standards which exist.

NOTE – The CCSDS recognizes that relevant work is being done by other Standards Development Organizations (SDOs) and, therefore, in the interests of economies, fully intends to **adopt** or **adapt** relevant standards from these SDOs and only **develop** standards in areas where none are found to exist.

Therefore, the term **new work** as used in this Manual refers to work that is not currently a part of the CCSDS Program of Work but, due to its applicability to the CCSDS environment, is being proposed to become part of the CCSDS. The CCSDS anticipates and fully expects standards from other SDOs to be submitted to the CCSDS for analysis and consideration for becoming CCSDS Recommendations.

NWIs generally fall into one of two categories:

- a) Those which are routinely developed by panel members or Agencies and which are essentially in consonance with an active panel's program of work. If this type of NWI is found by the panel chairperson to be appropriate for the panel, it is included in that panel's program of work and thereby routinely presented to the TSG for analysis and support (or rejection) and to the MC for approval (or disapproval) during reviews of that panel's two-year program of work.
- b) Those which are introduced by panel members or Agencies but which are not in consonance with any active panel's program of work. In this instance, the TSG will:
 - first, determine whether to recommend that the MC approve the CP on its technical merits;
 - second, if approval of the NWI is supported, prepare a recommendation to the MC concerning how the NWI is to be accommodated by the current CCSDS organization, i.e., whether to extend an existing panel's area of responsibility, create a new panel, or re-establish an inactive panel;
 - third, make suitable recommendations to the MC.

In effecting its decision, the TSG may elect to establish an Ad Hoc Advisory Group to study the CP further and to recommend a disposition (approval/disapproval) as well as, in the case of recommended approval, a preferred method for accommodating the NWI organizationally.

The MC, after receiving the TSG recommendation relative to an NWI, will render its consensus decision based on analysis of the NWI from the following administrative standpoints:

- impact on existing resources;
- impact on existing programmatic priorities;
- impact on existing organizational entities.

5.1.2 WHITE BOOK DEVELOPMENT

Following MC approval and assignment of an NWI to a panel, the CP is discussed, analyzed, and fully developed during panel meetings. (In order to conserve panel resources, the panel chairperson may elect to assign the CP to a small group of appropriate technical experts for development.)

It is advisable that two documents be developed in parallel, one that identifies the requirements (the "to-be-Green" Book), and one that meets the requirements (the "to-be-

Blue” Book). While the to-be-Green Book and the to-be-Blue Book will be developed essentially in parallel, emphasis should ideally be placed first on the Report as opposed to the Recommendation. Although the developments constitute an iterative process both within and between the books, it is more efficient first to identify and reach agreement on the requirements (GB) before the solution (BB) is developed. The GB will serve as a companion document to the BB and contain supporting information including scenarios identifying the requirements and rationale for the Recommendation. For this reason, every effort should be made to release the GB and RB concurrently in order to assist the review/concurrence process by providing additional information to the reviewers.

The development of these two items continues until consensus is reached within both the subpanel (if there is one) and the full technical panel. During this development phase, broad consultation with panel-external experts within Agencies is encouraged; however, this consultation shall not be construed as the formal Agency review. Expert consultation will both result in better products and facilitate Agency acceptance of a document when it is released for official Agency review and approval.

When consensus is reached on the content of both documents, preparation of the two White Books (one to become Green and one to become Blue) is initiated. The panel chairperson appoints a technical editor. The technical editor, working with the panel chairperson, is responsible for the documents during the balance of their development cycle, incorporating further comments of the panel, putting the documents into final formats, administering and preparing the final panel response to official Agency comments during the external review cycle (if relevant), assisting in the resolution of these comments, producing the final document, and providing document maintenance.

It may be advisable at this time also to assign a document editor to assist the technical editor in producing a quality article (see reference [3]). Early collaboration between document editor and technical editor will minimize the potential for errors to be introduced later when the document may require significant reformatting for conformance with the CCSDS Publications Manual.

As noted in figure 5-1, during the WB phases, the processes are essentially identical.

All working papers generated during this phase shall have white colored covers to indicate that they are under development.

During the development of a WB, the technical editor in coordination with the appropriate panel chairperson will assign a CCSDS document identification number in accordance with the system described in 6.1 and advise the Secretariat of the number assignment. This assignment will allow tracking and control of the document. However, the color of the cover shall remain white, and the words DRAFT RECOMMENDATION or DRAFT REPORT must be conspicuous on the document cover and included in the page header on every page.

The technical editor will notify the panel chairperson when all issues have been resolved or if resolution is not possible.

When panel consensus is reached on the WBs, the panel chairperson will then petition the MC to release the documents as respective RB and GB. The panel chairperson must satisfy the MC as to the documents' correctness, completeness, maturity, and the applicability to the problem they address.

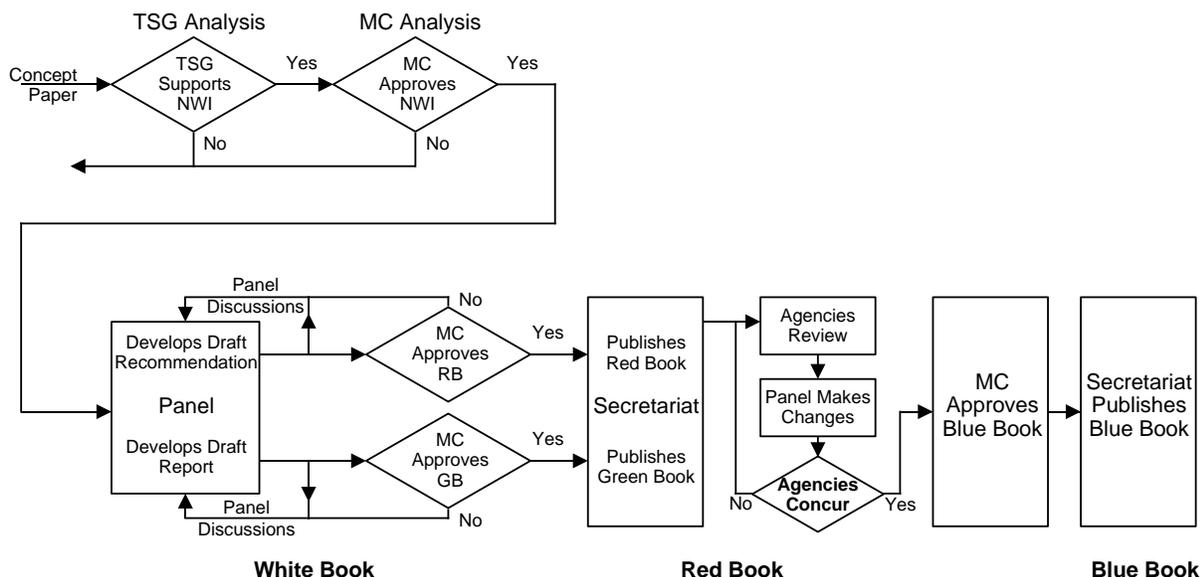


Figure 5-1: CCSDS Technical Document Development

If the MC agrees, it will issue a Resolution which authorizes the Secretariat to make the appropriate external distribution. At this point, the development process for Recommendations and Reports diverge. Recommendations are distributed for CCSDS-wide review as RBs; Reports are published without further review as Green Books. Procedures for GB and RB distribution are addressed in 6.2.

5.1.3 GREEN BOOK DEVELOPMENT

After the MC has approved a Draft Report for external release and review, the technical editor shall deliver the document electronically to the document editor acting as publishing agent for the Secretariat.

The document editor shall:

- provide boilerplate text and front-matter elements, and assure that the document complies with CCSDS style guidelines as specified in reference [3];

- prepare electronic copy with all instances of the word “DRAFT” removed from the cover and page headers and with the document identification number updated to reflect issue-1 GB status.
- submit document file to the CCSDS web site and distribute e-mail notifications to the appropriate CCSDS distribution .

GBs are distributed for information purposes only. Since no formal Agency reviews are required for Green Books, these documents do not necessarily reflect endorsement by a particular Member or Observer Agency, nor are Agencies obligated to follow their contents in any way.

Once a GB is distributed externally, its development cycle for that issue is completed. Any comments, changes, or improvements volunteered by an Agency are, of course, acknowledged. However, these will only be introduced in a later version of the document when and if another version is prepared.

5.1.4 RED BOOK DEVELOPMENT

Within sixty days after the MC has approved a Draft Recommendation for external release and review, the technical editor shall deliver the document electronically and in hardcopy to the document editor acting as publishing agent for the Secretariat. If circumstances prevent delivery of the document within sixty days, the technical panel responsible for the document shall repetition the MC for approval when the document is ready for delivery.

The document editor shall:

- provide boilerplate text and front-matter elements, and assure that the document complies with CCSDS style guidelines as specified in reference [3];
- prepare electronic file with the words “DRAFT RECOMMENDATION” printed on the cover and page headers on every page and with the document identification number updated to reflect issue-1 RB status.
- prepare review forms and materials and submit to CCSDS web site.
- submit document file to CCSDS web site and distribute e-mail notifications to the appropriate CCSDS distribution.

5.1.4.1 Red Book Review and Approval Procedure

Upon MC approval of an RB, the Secretariat shall prepare the appropriate on-line form (see annex E) requesting Member Agency review, comment, and subsequent official acceptance. The Secretariat shall specify the length of the review period; normally this is established as

three months. It is recognized that some very complex documents will require additional time; these, however, shall be treated on a case-by-case basis. The Secretariat shall then distribute the document externally in accordance with 6.2 of this document.

The following statement shall be included in the Foreword of each Review Red Book to indicate its degree of stability:

This document is a draft CCSDS Recommendation. Its “Red Book” status indicates that the CCSDS believes the document to be technically mature and has released it for formal review by appropriate technical organizations. As such, its technical contents are not stable, and several iterations of it may occur in response to comments received during the review process.

Implementers are cautioned **not** to fabricate any final equipment in accordance with this document's technical content.

Although not described here, each Member Agency is expected to establish some type of Review Board/Procedure for the purpose of reaching a position on each RB. They are to provide their approval of the document (Member Agencies), their concurrence of the document (Observer Agencies), or their comments on the CCSDS RID initiation form. The CCSDS RID initiation form is presented in annex E.

Associate members who prepare comments on a CCSDS document are to forward them to their respective sponsoring Agency for review and disposition by that Agency.

Upon receipt of completed RID initiation forms from the CCSDS Agencies, the Technical Editor shall schedule editing meetings. The sole purpose of these meetings is to develop dispositions for the Review Items (RIs). In coordination with appropriate panel members, the editor shall analyze and assess the RIs. The editor is responsible for ensuring that all written comments are discussed and **written** dispositions provided to the submitter. Those comments which are found to be of a minor or editorial nature do not require written dispositions from the editor and may be immediately incorporated into the RB under review. For those comments which are of a more controversial nature, or if major changes have been proposed by a reviewer, it may be necessary to make a second RB release through the Secretariat. (In such instances, it is not necessary for the Secretariat to secure MC approval for any RB release subsequent to the first one.) This process may be iterated until consensus among the Member Agencies is reached. Each Member Agency shall indicate its approval and acceptance of the latest version of the document. Provision for this approval is contained on the RID initiation form (see annex E).

CAUTION – Agencies are strongly advised to complete their review within the period specified. Should the review period become excessive, the Management Council can call for the withdrawal of the document from review and consider resubmitting it to the development cycle.

5.1.4.2 Red Book Testing

Depending upon document complexity, this review and approval procedure may require validation testing of the technical content before Agency approval can be given. In such instances, a two-step process is specified:

The first step involves the conventional review and official approval/comment of the document's technical content by the CCSDS Member Agencies. At this point, the document's technical content is considered stable and can only be changed by test results or further engineering analysis.

The second step consists of validation testing by those Agencies which require such tests before unconditional approval can be given. These tests shall be against the now stabilized technical content of the RB. Upon satisfactory completion of these tests, these Agencies shall approve the document in order that it be progressed to Blue. (Unsatisfactory test results shall be reported to the Technical Editor for disposition.)

The Foreword of each Stable Red Book shall include the following statement:

This document is a Stable Red Book. Its Stable status indicates that the document's contents have been modified to reflect comments made during the initial review cycle and that the document's technical content is undergoing validation testing.

Implementation in accordance with a Stable RB should be undertaken only when other system schedules preclude waiting for the RB to progress to a full CCSDS Recommendation and ISO Standard.

It is the responsibility of the Technical Editor to inform the CCSDS Document Editor when the RB has advanced from the Review status to the Stable status so that the Foreword of that document can be changed.

In view of the dynamics of the CCSDS environment, there may be instances where parts of a given document can be progressed to Blue while other parts remain Red pending the results of either testing or application. Such a condition is recognized by this Procedures Manual, although the number of instances should be minimized. In applicable cases a large Recommendation may become a Blue Book through a series of sequential Blue Books, each of which addresses a clearly defined module of the overall Recommendation.

5.1.4.3 External Standards Review and Approval Procedure

External standards that are being considered for incorporation into the CCSDS suite of Recommendations shall be subjected to the same procedures as outlined in 5.1.4.1 and 5.1.4.2.

5.1.5 BLUE BOOK DEVELOPMENT

Once Member Agency consensus has been achieved on an RB, the panel chairperson shall petition the MC to release and distribute the document as a CCSDS Recommendation. The MC shall issue a resolution authorizing the Secretariat to distribute the document as a Blue Book, i.e., an approved CCSDS Recommendation.

Within sixty days after the MC has approved a document for release and distribution as a CCSDS Recommendation, the technical editor shall deliver the document electronically to the document editor acting as publishing agent for the Secretariat. If circumstances prevent delivery of the document within sixty days, the technical panel responsible for the document shall repetition the MC for release of the document.

The Secretariat shall then prepare the file for release to the CCSDS web site. The Secretariat shall then distribute the document externally in accordance with 6.2 of this document.

The Foreword of each Blue Book shall contain the following statement:

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

<http://www.ccsds.org/>”

5.1.5.1 External Standards

External standards that have been approved for incorporation into the CCSDS suite of Recommendations shall be released and distributed in accordance with the procedures outlined in 5.1.5.

5.2 DOCUMENT CHANGE CONTROL

5.2.1 CHANGES TO CCSDS BLUE BOOKS

To ensure that CCSDS Recommendations continue to be viable documents, each Recommendation shall be reevaluated every five years at a minimum. Three courses of action are possible:

- A BB can be determined to remain applicable without changes, in which case the MC shall issue a resolution so stating;
- A BB can be determined to be obsolete, in which case the BB shall be withdrawn and deleted from the list of current CCSDS documents;

- A BB may be found to need revision, in which case a group of relevant experts shall be convened to initiate the revision of the BB. The procedures outlined below apply for revisions to BBs.

All technical changes to a BB shall be effected by the use of either Pink Sheets or a Pink Book. (The Technical Editor has the discretion to choose the appropriate mode of revision.)

5.2.1.1 Pink Sheets

The revision of a BB by the Pink Sheet method is preferred in the case where the majority of the BB pages remain unchanged. The pink sheets represent Change Pages of the existing BB and show proposed text deletions (by cross-out marks) and proposed text additions (by margin bars). Only those pages having proposed changes are included in the Pink Sheets. Only the Pink Sheets are to be reviewed; the balance of the BB is to remain unaltered.

5.2.1.2 Pink Book

If revision materials constitute changes to the majority of pages in the existing BB, then the preferred method is to reissue the revised document as a Pink Book. A Pink Book shall contain the entire text with the new proposed text additions highlighted by means of margin bars. Since a Pink Book, however, represents a proposed, very extensive revision of an existing CCSDS BB, so that the subject BB is reproduced in its entirety, the entire pink book is to be reviewed.

In either case, the review process of “Pink” material is essentially identical to that of the RB process previously described. For review by the cognizant panel, the material shall be labeled, as appropriate, “DRAFT PINK SHEETS” or “DRAFT PINK BOOK” (analogous to a WB), with the words “DRAFT RECOMMENDATION” appearing on the cover and in the page header on every page. When panel consensus has been reached, the word “DRAFT” is deleted from the book color designation (but retained on the cover and in the page header as with RBs), and the review proceeds according to the process described for RB review (see 5.1.4).

Once Pink Material has been officially approved by Member Agencies, a new revision of the Recommendation will be published and distributed.

5.2.1.3 Blue Book Corrigendum Control Procedure

The BB Corrigendum control procedure applies to minor updates to existing BBs and is intended to avoid the lengthy and expensive formal Agency review process necessary when progressing a BB to a new issue. It is used to correct

- errors in a BB that should be corrected as soon as possible;

- errors in a BB which do not affect its technical accuracy as a stand-alone document, but which arise when a new related BB is issued and the relation of the new BB needs to be made clear and correct in the original BB.

In such instances, the following procedure shall apply:

- a) Material relative to any minor changes to a BB shall be processed within a panel as a WB. It shall be iterated until consensus is reached among panel experts as now happens with material made ready for Red or Pink status. Special emphasis shall be placed on assuring that the Corrigendum fixes errors in the associated BB, whether or not the errors appeared by mistake or resulted from the need to clarify relations to subsequently produced BBs. The phrase “Draft Corrigendum to . . .” shall be included in its title to make clear its association with the existing BB.
- b) Following panel consensus, the panel chair shall petition the MC for approval to publish the WB Corrigendum as a BB Corrigendum. Justification for the Corrigendum shall also be provided by the panel chair.
- c) Following analysis and approval by the MC, the Secretariat shall issue the Corrigendum via the corrigendum cover form (see annex E) with a document identifier assigned in accordance with 6.1 of this Manual.

Because the existence of published corrigenda against existing Blue Books greatly increases the complexity and expense of document management, the following restrictions are placed on the use of corrigenda:

- a) No more than two corrigenda to a published Blue Book may be issued; need for a third corrigendum results in automatic revision of the Blue Book.
- b) No Blue Book against which corrigenda have been issued may be reaffirmed at the end of its five-year cycle; i.e., the Blue Book must be revised to incorporate corrigendum changes.

5.2.1.4 External Standards

When the originating organization of any external standard that has been incorporated into the CCSDS suite of Recommendations deems that a change to that standard is necessary, relevant members of the CCSDS will participate in the modification to the document in accordance with the originating organization's internal document maintenance procedures.

5.2.2 CHANGES TO CCSDS GREEN BOOKS

Since GBs are considered Reports issued by a panel and do not require Agency review, panels are free to adopt appropriate procedures for revisions to their GBs; however, before such a GB is reissued, the approval of the MC is required.

Occasionally, drafts of revisions to Green Books may need to be distributed in order to facilitate review of a RB. If the MC determines there is a need to distribute a draft revision to a Report, the cover color of the printed draft shall be white; the words “DRAFT REPORT” and “DRAFT GREEN BOOK” shall be printed on the cover above and below the title, respectively; and the words “DRAFT REPORT” shall be printed in the page header on every page. The normal procedure, however, is for the MC to approve publication of a revised Green Book at the same time as it approves distribution of the Pink Book/Pink Sheets supported by the Report.

5.2.3 CHANGES TO CCSDS YELLOW BOOKS

Yellow Books are not subject to the CCSDS change control process.

6 DOCUMENT MANAGEMENT

The Secretariat shall be responsible for the publication, distribution, and maintenance of all documents officially approved and adopted by the CCSDS, including Recommendations and Reports developed by the panels.

6.1 DOCUMENT IDENTIFICATION

6.1.1 DOCUMENT NUMBERING SYSTEM

CCSDS documents shall be numbered in accordance with the following system:

CCSDS PXX.V-C-I.r

where

P is a single character identifier designating a specific topic area. P-assignments are made by the MC. Normally, a specific topic area is addressed by one CCSDS technical panel. Currently assigned P-designators are given in annex F.

XX is a double character identifier designating a related major sub-topic. XX-assignments are made by the panel chairperson.

EXCEPTION – The designation P00 is reserved in every instance for an Overview type of documentation which describes in some detail the considerations that obtain in this given domain of interest.

V is a single character identifier designating a related minor sub-topic. V-assignments are made by the panel chairperson.

C is a single character designating the status and nature of the document. It must be one of the following.

W	White Book	—	Technical Document under development
R	Red Book	—	Draft Recommendation
B	Blue Book	—	Final Recommendation
G	Green Book	—	Technical Report
Y	Yellow Book	—	Administrative or Meeting Report
P	Pink Sheets <i>or</i> Pink Book	—	Proposed Revised Recommendation

Panels may develop White Books, draft Pink Sheets, or draft Pink Books under their own authority; however, the MC must authorize the publication of any Red, Green, or Blue Books, Pink Sheets or Pink Books, or Blue Book corrigenda.

- I** is an integer designating the issue number of the document. The issue numbers for WBs, GBs, RBs, and BBs are independent of one another. When a Recommendation is initially released as a Blue Book, the I-value shall be 1; for the subsequent approved revisions of a Blue Book, the previous I-value shall be incremented by one.
- r** is a CCSDS-internal control mechanism for tracking document revisions which occur between issue numbers (see 5.2.1.1 and 5.2.1.2). Here, as applied to the iterative process of finalizing a document under review, the “r” is incremented for successive versions.

An example of this numbering system is shown in annex F.

6.1.2 IDENTIFICATION OF EXTERNAL STANDARDS

The Document Identification of any externally developed standard that has been incorporated into the CCSDS suite of Recommendations shall retain that identification assigned by the originating organization.

6.1.3 CORRIGENDUM IDENTIFICATION

Blue Book Corrigenda are identified by the document number of the Blue Book issue to which the corrigendum applies. A space and the phrase “Cor. ‘N’” follow the Blue Book document number, where ‘N’ is an integer value indicating the corrigendum number. The corrigendum number is either ‘1’, for the first corrigendum to a given Blue Book, or ‘2’, for the second corrigendum to a given Blue Book.

An example of corrigendum identification is shown in annex E.

6.2 DOCUMENT DISTRIBUTION

Procedures governing the distribution of documents differ in accordance with both the type and status of the document in question and the distribution mechanism. Only electronic copies of draft and released documents are made available on the CCSDS web site. Camera-ready copies of draft and final Recommendations for local reproduction may be requested from the Secretariat.

6.2.1 WHITE BOOKS

Distribution of White Books is outside the scope of the CCSDS Procedures Manual. Since White Books are panel-internal developmental documents, their distribution remains under the control of the panel chairperson. However, as these documents progress, unofficial

distribution to other relevant panel-external experts is encouraged. Their contributions will not only increase the merit of the CCSDS documents but should improve the subsequent review and approval process of the document.

6.2.2 RED BOOKS

When authorized by the MC, the Secretariat, through the services of a Document Manager, shall prepare an electronic version of the RB suitable for on-line distribution and place the electronic version, together with information necessary for the receiving Agencies to properly handle the document (see 5.1.4), on-line in an HTTP-accessible location. When review materials are available on-line, the Secretariat shall announce their availability, via e-mail or facsimile, to the CCSDS Member and Observer Agency Principal Delegates or their designated agents, the CCSDS Panel/Subpanel Chairs, and the CCSDS Liaison Organization Principal Delegates. Agency Document Managers shall be responsible for assuring that their Agency's reviewers, including Associates sponsored by their Agency, are made aware of the review and have access to the review document and associated review materials.

6.2.3 BLUE BOOKS

When authorized by the MC, the Secretariat, through the services of a Document Manager, shall prepare an electronic version of the Recommendation suitable for on-line distribution and place the electronic version, together with information necessary for the receiving Agencies to properly handle the document (see 5.1.5), on-line in an HTTP-accessible location. When Recommendations are available on-line, the Secretariat shall announce their availability, via e-mail or facsimile, to the CCSDS Member and Observer Agency Principal Delegates or their designated agents, the CCSDS Panel/Subpanel Chairs, and the CCSDS Liaison Organization Principal Delegates. Agency Document Managers shall be responsible for assuring that these documents are made available as appropriate within their respective Agencies.

6.2.4 GREEN BOOKS

When authorized by the MC, the Secretariat, through the services of a Document Manager, shall produce and distribute the bulk quantities of the GB. When GBs are the companion document to a RB which is being distributed for official Agency review, the two documents should be shipped together. On occasions when a mature GB is not available for release with its companion RB, the Document Editor and the appropriate Panel Chairman shall determine when a Draft Report can provide useful information and may release it to accompany the companion RB.

6.2.5 PINK SHEETS/PINK BOOKS

When authorized by the MC, the Secretariat, through the services of a Document Manager, shall produce an electronic version for on line distribution of the Pink Sheets/Pink Books. This distribution shall be the same as that for RBs.

6.2.6 BLUE BOOK CORRIGENDA

When authorized by the MC, the Secretariat, through the services of a Document Manager, shall produce an electronic version of the corrigenda and also incorporate the changes into the BB. The corrigenda and updated BB will be posted to the CCSDS web site.

6.3 ON-LINE DOCUMENTATION

6.3.1 BLUE BOOKS

The Secretariat, through the services of a Document Manager, shall retain copies of all current BBs and GBs in an on-line data base, accessible via File Transfer Protocol (FTP) or HyperText Transfer Protocol (HTTP).

6.3.2 WHITE BOOKS, RED BOOKS, PINK BOOKS, AND PINK SHEETS

The Secretariat, through the services of a Document Manager, shall retain copies of all documents currently under development in an on-line data base accessible via FTP or HTTP. In these instances, however, access control shall be enforced to assure that only permitted reviewers may obtain access to the document for their review and comments. Agencies shall establish their own internal procedures for conducting reviews using the materials provided on line.

NOTE – Paper copies of the Recommendations can be reproduced from the on-line version of the document.

6.3.3 BLUE BOOK CORRIGENDA

When authorized by the MC, the Secretariat, through the services of a Document Manager, shall assure the following:

- specified changes are made in the electronic files for the changed document;
- changes are marked with change bars and a marginal notation indicating the corrigendum number, e.g., ‘TC 1’;

- the footer for the changed page reflects the corrigendum number and the issue date of the corrigendum;
- a notation is made on the cover of the on-line document (without otherwise altering the cover) indicating the number of the latest corrigendum;
- at the end of the document citation on the Web, lines are added for each corrigendum with hyperlinks to an electronic version of the corrigendum.

6.4 CCSDS DOCUMENT MANAGER FUNCTIONS

The CCSDS Document Manager functions are assigned to the Secretariat. The Secretariat shall

- maintain up-to-date list of documents and electronic files on the CCSDS web site;
- produce and distribute CD-ROMs when new documents are approved and published (nominally on a semi-annual basis);
- ensure that the CCSDS web site is kept current by introducing to it all new material received from the MC.

ANNEX A

SECRETARIAT OF THE CCSDS

(July 2002)

Secretariat of the CCSDS
Program Integration Division, Code M-3
National Aeronautics and Space Administration
Washington, DC 20546 USA.

ANNEX B

CCSDS CHARTER¹

The current CCSDS Charter is contained in the *Strategic Plan of the Consultative Committee for Space Data Systems* (CCSDS A01.1-Y-1).

¹ The CCSDS Charter was originally approved in 1982. It was updated in May 1999.

ANNEX C

TECHNICAL PANEL CHARTERS

The current charters for the CCSDS Technical Panels are contained in the *CCSDS Operating Plan for Standards Development* (CCSDS A01.2-Y-1).

ANNEX D

CCSDS TECHNICAL STEERING GROUP

CHARTER

(Terms of Reference)

(June 1998)

Purpose

To report to the MC and act upon the instructions of the MC and guide and coordinate the overall activities of the technical panels.

Scope

Identify and maintain the overall technical requirements for CCSDS activities derived from the needs of future space projects and technology programs.

Perform periodic review of the technical work of the CCSDS panels.

Develop an architecture model to ensure the harmonization of CCSDS Recommendations.

Assure that all active CCSDS Recommendations and Reports are consistent with the architecture model as well as with each other.

Prepare technical presentations of CCSDS activities for presentation to the outside world.

Organization

Membership of the TSG includes all panel chairmen and working group/subpanel chairmen. At the invitation of the TSG Chairman, agencies will send experts for clarification of technical subjects as required.

The TSG Chairman will be appointed by the Management Council. The operating procedures shall be in accordance with the CCSDS Procedures Manual.

ANNEX E

FORWARDING FORMS

(July 2002)

This annex presents various forms used by the Secretariat in the distribution of CCSDS documentation. The forms presented are baseline forms intended to illustrate by example the actual forms used. For a given distribution, the Secretariat may prepare various versions of a particular form, since the Secretariat routinely distributes documents to a variety of recipient categories.

The forms presented in this annex are

- a Red Book review request form;
- a Blue Book Corrigendum form;
- a RID Initiation form.

E1 RED BOOK FORWARDING FORM

A standard Red Book forwarding form is shown on the facing page. A variation of this form may be used to distribute other types of review documents, e.g., a draft Yellow Book. Variables to be filled in at the time of distribution are as follows:

- [CtrlNo] is an internal distribution control number assigned by the Secretariat;
- [RevBegins] is the beginning date for review of the attached document;
- [RevEnds] is the ending date for the review, by which time all comments should be forwarded to the review coordinator;
- [Citation] is a brief citation for the document, giving title, issue, issue date, and document identifying number;
- [Document Description] is a brief description of the review document in terms of the problem it proposes to solve;
- [Review Coordinator] is the name and contact information for an individual responsible for receiving review comments.



REQUEST FOR REVIEW OF CCSDS DOCUMENT

Control number: [CtrlNo] Distribution: **On Line**
Review begins [RevBegins] Review ends: **[RevEnds]**

The Management Council of the Consultative Committee for Space Data Systems (CCSDS) has authorized the publication, and requests Agency review, of the following:

[Citation]

Click here to access a Portable Document Format (PDF) version of the review document.
(File:[]. Requires Acrobat™ 3.0 or later version.)

Notes on printing

DOCUMENT DESCRIPTION: [Document Description]

REVIEW INSTRUCTIONS: Member and Observer Agencies are requested to send their sets of review comments to the Review Coordinator with a copy to the CCSDS Secretariat. Each review comment should be submitted on a separate Review Item Disposition (RID) form. Submission of RIDs in electronic form is preferred. The following ASCII RID forms are available (click on form name for access):

Standard RID form for reviewer use.

Agency RID form (includes approval and concurrence fields).

REVIEW COORDINATOR:

[Review Coordinator]

A copy of the set of Agency review comments should be forwarded to the Secretariat at the following address:

CCSDS Secretariat
NASA Headquarters, Code M3
Washington, DC 20506, USA

Fax: +1 202 358 2830
E-mail: ccsds@lists.hq.nasa.gov

E2 BLUE BOOK CORRIGENDUM FORM

The standard Blue Book Corrigendum form is shown on the facing page. Variables to be filled in at the time of distribution are as follows:

- [DocNumber] is the document identifying number of the Blue Book against which the corrigendum is being issued;
- [CorNumber] is an integer indicating the number of the corrigendum;
- [CorIssueDate] is the date when the corrigendum was approved by the MC;
- [Title of Published Recommendation] is the title of the Blue Book against which the corrigendum is being issued;
- [DocIssueDate] is the original issue date of the Blue Book against which the corrigendum is being issued;
- [Internal Ctrl Number] is an internal distribution control number assigned by the Secretariat.



**RECOMMENDATION [DocNumber]
TECHNICAL CORRIGENDUM [CorNumber]**

Issue Date: [CorIssueDate]

[Title of Published Recommendation]

TECHNICAL CORRIGENDUM [CorNumber]

The Management Council of the Consultative Committee for Space Data Systems (CCSDS) has authorized the publication of corrigendum [CorNumber] to [DocNumber], issued [DocIssueDate].

[Page (Range) Reference]

[Instructions for Making Change]

[Rationale for Change]

Control Number: [Internal Ctrl Number]Corrigendum Identifying Number: [DocNumber] Cor. [CorNumber]

Correspondence regarding CCSDS documents should be addressed to

CCSDS Secretariat
NASA Headquarters, Code M3
Washington, DC 20506, USA

Fax: +1 202 358 2830
E-mail: ccsds@lists.hq.nasa.gov

E3 REVIEW ITEM DISPOSITION FORM

The standard Review Item Disposition (RID) initiation form for CCSDS Red Book reviews is shown on the facing page. The variables to be filled in at the time of distribution are the standard citation information for the document being distributed for review.

REVIEW ITEM DISPOSITION (RID):
RED BOOK RID INITIATION FORM

AGENCY RID NUMBER:
SUBMITTING ORGANIZATION (Agency, Center):

REVIEWER'S NAME:
CODE:
E-MAIL ADDRESS
TELEPHONE:

DOCUMENT NUMBER: [DocNumber] [Color Book], [Issue Number]
DOCUMENT NAME: [Title]
DATE ISSUED: [Issue Date]
PAGE NUMBER: PARAGRAPH NUMBER:
RID SHORT TITLE:

___ APPROVE (MEMBER) ___ CONCUR (OBSERVER) ___ COMMENTS

DESCRIPTION OF REQUESTED CHANGE: (Use From: "... " To "... " format)

CATEGORY OF REQUESTED CHANGE:
Technical Fact ___ Recommended: ___ Editorial: ___

NOTES:
TECHNICAL FACT: Major technical change of sufficient magnitude as to render the Recommendation inaccurate and unacceptable if not corrected. (Supporting analysis/rationale is essential)
RECOMMENDED: Change of a nature that would, if incorporated, produce a marked improvement in document quality and acceptance
EDITORIAL: Typographical or other factual error needing correction. (This type of change will be made without feedback to submitter.)

SUPPORTING ANALYSIS:

DISPOSITION:

ANNEX F

CCSDS DOCUMENT NUMBERING SYSTEM

(August 1996)

F1 THE CURRENTLY ASSIGNED P-IDENTIFIERS ARE:

- 1 - Telemetry Systems
- 2 - Telecommand Systems
- 3 - Ancillary Data
- 4 - RF and Modulation Systems
- 5 - Tracking and Navigation Systems
- 6 - Information Access and Interchange Systems
- 7 - Advanced Orbiting Systems
- 8 - Ground Network and Communications Systems
- 9 - Cross Support Concepts, Services and Architecture

- A - Administrative and Organizational Reports
- B - Meeting Reports and Summaries
- C - Panel Workshop Reports and Summaries
- D - Technical Planning Reports and Summaries

F2 EXAMPLE OF DOCUMENT NUMBERING SYSTEM

F2.1 For the initial development of a RECOMMENDATION:

White Book Development

	Title	Number
Revision #1 ----	Draft Recommendation	CCSDS 101.0-W-1
Revision #n ----	Draft Recommendation	CCSDS 101.0-W-n

Red Book Development

	Title	Number
Revision #1 ----	Draft Recommendation	CCSDS 101.0-R-1
Revision #n ----	Draft Recommendation	CCSDS 101.0-R-n

Blue Book Development

	Title	Number
	Recommendation	CCSDS 101.0-B-1

F2.2 For subsequent changes to a RECOMMENDATION:

Pink Sheet/Pink Book Development

	Title	Number
Revision #1 ----	Draft Recommendation	CCSDS 101.0-P-1.1
Revision #n ----	Draft Recommendation	CCSDS 101.0-P-1.n

NOTE – The numbering system does not distinguish between a set of Pink Sheets and a Pink Book.

Blue Book Development

	Title	Number
	Recommendation	CCSDS 101.0-B-2
	Corrigendum	CCSDS 101.0-B-2 Cor. 1

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