Overview

Style guides are used by organizations to help writers and editors keep a consistent writing and documentation style in their documents. CCSDS currently has a limited “official” style guide, which is presented here as “CCSDS Style Guide Part 1” and includes stylistic items addressed in the Technical Editor’s Boot Camp. A forthcoming “CCSDS Style Guide Part 2” is under development. When complete, it should include “unofficial” CCSDS-stylistic guidelines, including hyphenation rules, use of numbers, and capitalization. In the meantime, if you wish to defer to a particular style guide, two in particular are recommended: The Chicago Manual of Style, and the U.S. Government Printing Office Style Manual. Additionally, any recent edition of Webster’s New Collegiate Dictionary is a good starting place for spelling, capitalization, and limited grammar rules.

Official Style Requirements from the CCSDS Publications Manual

Language Conventions

Publication Language, Diction, and Spelling

— All CCSDS documents shall be published in English.
— Webster’s New Collegiate Dictionary and The Shorter Oxford English Dictionary official CCSDS dictionaries for American and British English, respectively.
— After the American or British English style has been selected for a given CCSDS document, it shall be used throughout (without mixing).
— All words for which there may appear to be a choice in the use of ‘z’ or ‘s’, e.g., ‘standardize’ or ‘standardise’, ‘utilize’ or ‘utilise’, etc., are uniformly spelled with ‘z’.

Preferred CCSDS Style

— The single most important element of style is consistency

Prose Style

— CCSDS Documents shall be written in the third person. [See the next page for what this looks like.]
— The prose style shall be simple and straightforward enough to be easily understood by persons for whom English is a second language.
— Sentences shall be complete and as short as possible. [General technical writing guidance is try to keep to ≤20 words.]
— Unnecessary repetition shall be avoided (particularly using different words to express the same idea many times).
— Use of obscure words and informal constructions shall be avoided.
— Contractions (e.g., it’s, they’re) shall not be used.

Acronyms and Abbreviations

— Excessive use of acronyms and abbreviations shall be avoided.

Calling Out Acronyms and Abbreviations

— Acronyms and abbreviations shall be ‘called out’ in the document text the first time they are used.
— The style for calling out acronyms and abbreviations shall be to state the complete term first followed by its acronym or abbreviation in parentheses.

— Acronyms and abbreviations should not be called out in titles and headings.

— Acronyms and abbreviations shall not be called out repeatedly:
  ▪ after an acronym or abbreviation has been called out, that acronym or abbreviation shall be used in place of the expanded term for which the acronym or abbreviation stands;
  ▪ in titles and subsection headings, however, the expanded term should normally be used instead of its acronym or abbreviation.

**General Guidance for Acronyms and Abbreviations**

— In the case of acronyms or initials, the letters of the term used to form the acronym or initials shall be capitalized.

— Acronyms and abbreviations used in text should be defined in an acronyms and terminology annex. Definitions appearing in the annex shall agree with those in the text. [You may want to refer to either the SANA registry of terms of CCSDS Acronym List and Variations Excel spreadsheet that is in the Author’s Toolkit.]

— Plurals of acronyms and abbreviations shall be formed in the same ways as for real words:
  ▪ for abbreviations that are not pronounced as words, an ‘s’ shall be added to the abbreviation;
  ▪ for acronyms, ‘s’ or ‘es’ shall be added depending on whether the acronym ends in a sibilant.

— The indefinite article used with an acronym or abbreviation depends on the pronunciation of the acronym or abbreviation. If the acronym or first letter of the abbreviation is pronounced with an English vowel sound, the indefinite article should be ‘an’; otherwise it should be ‘a’; for example, ‘a VCDU-ID’, ‘an MSB’, ‘a TDRS’, ‘an EOS’.

**Mathematical Style**

— Equations shall be expressed in correct mathematical form with letter symbols as the equation parameters.

— A list explaining the letter symbols and their units shall follow the equation, unless the letter symbols used are defined in the acronyms and terminology annex.

— Descriptive names or names of quantities shall not be arranged in the form of an equation.

— The style used shall be based upon the following example:

\[
I \geq \frac{R}{S}
\]

where

\[
I \quad \text{is the number of convolutional encoders;}
\]
\[
R \quad \text{is the effective user data rate;}
\]
\[
S \quad \text{is the effective decoder rate.}
\]

— Equations may be numbered, if necessary, with Arabic numerals in parentheses on the right margin, as in the following example:

\[
g(x) = \prod_{j=12}^{143} (x - a^{12}) = \sum_{j=0}^{32} G_j x^j \tag{1}
\]

— The numbering shall be independent of the numbering of sections, subsections, figures, and tables.

**Quantities, Units, and Symbols**

— The International System of units (SI) as set out in ISO 31 […] shall be used. If non-SI units are necessary (e.g., inches), the values shall be expressed first in SI units followed by the non-SI equivalent in parentheses.
Terse Style and Normative Specifications

From sections 3.4.3.3 or 1.6.:

<table>
<thead>
<tr>
<th>For normative-track documents:</th>
<th>The following conventions apply for the normative specifications[...]:</th>
</tr>
</thead>
<tbody>
<tr>
<td>— each specification shall be</td>
<td>a) the words ‘shall’ and ‘must’ imply a binding and verifiable specification;</td>
</tr>
<tr>
<td>explicitly identified by a</td>
<td>b) the word ‘should’ implies an optional, but desirable, specification;</td>
</tr>
<tr>
<td>unique subsection or</td>
<td>c) the word ‘may’ implies an optional specification;</td>
</tr>
<tr>
<td>paragraph number.</td>
<td>d) the words ‘is’, ‘are’, and ‘will’ imply statements of fact.</td>
</tr>
<tr>
<td>— text shall be written in terse style</td>
<td>Those normative specifications conventions listed above are = terse style; however, the official CCSDS definition of terse style is as follows:</td>
</tr>
<tr>
<td></td>
<td>terse style: style of specification in which normal text is limited to concise statements of requirements. Discussions concerning rationale, background, and other ancillary topics are constrained to be brief and are set off from normal text, usually in a note, or sometimes in a subsection that is clearly labeled as being non-normative.</td>
</tr>
</tbody>
</table>

Additional Rule: Start each normative specification with clearly-defined subjects; too many documents come through the editing cycle with the normative specifications beginning with "This" being used as a catch-all pronoun. (Reference the "Pitfalls" portion of the April 2013 Boot Camp Slides.)

Guidelines from Boot Camp Slides

— Use third-person discourse:

1st person plural: To convert the normalized time values (τcorr, τseq-tr, and τseq-tot) to time measured in chips of the probing sequence, we need to multiply . . .

Changed to 3rd person: To convert the normalized time values (τcorr, τseq-tr, and τseq-tot) to time measured in chips of the probing sequence, it is necessary to multiply . . .

2nd person imperative: The frequency error will in general have contributions due to both spacecraft oscillator frequency drift and imperfect uplink Doppler predicts. Note that the range bias error is proportional . . .

Changed to 3rd person: The frequency error will in general have contributions due to both spacecraft oscillator frequency drift and imperfect uplink Doppler predicts. The range bias error is proportional . . .

Changed to 3rd person: The frequency error will in general have contributions due to both spacecraft oscillator frequency drift and imperfect uplink Doppler predicts. It should be noted that the range bias error is proportional . . .

— Use the “Oxford Comma” (This is also referenced in the Editing Checklist. The “Oxford Comma” is also known as a serial comma; it’s the comma that precedes the last item in a list—i.e., we had x, y, and z actions to take. It’s the comma after the “y”.)

— Lowercase figure, table, section, and annex references
— Single quotes (this is a CCSDS-specific style of the Chief Technical Editor)
— Use bookmarks for cross references to figures and tables
— Use TC tags for figure and table table-of-contents entries (the Chief Technical Editor can address this)