

Space Link Services Area

Resolution SLS-R-2018-10-002

Start of CWE Project for “Lossless Data Compression” CCSDS 120.0 Issue 4

Green Book

22nd October 2018

Gian Paolo Calzolari SLS Area Director

Gilles Moury SLS Deputy Area Director

The Space Link services Area,

CONSIDERING that

- the Multispectral and Hyperspectral Data Compression Working Group has been conducting the required reconfirmation review of CCSDS-123.0-B-2 and identified that a new issue of this Blue Book is required (and proposed a separate project for this Blue Book revision)
- The Working Group has also assessed for reconfirmation review the associated Green Book, CCSDS-120.0-G-3 and determined that a corresponding update is warranted for this Green Book

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- a related Concept Paper has been prepared (and is attached)
- the WG produced a draft CWE Project available at <http://cwe.ccsds.org/fm/Lists/projects/DispForm.aspx?ID=666> (and here attached)
- the WG has consensus on the Concept Paper and on the Draft CWE Project

RECOGNISING that required resources have been identified

RESOLVES to request CMC to approve starting the CWE Project identified above

RECOMMENDS that the CMC approve this resolution and, finally

REQUESTS that a CMC poll be conducted to accomplish this.

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Concept Paper for

Issue 4 Revision of

CCSDS-120.0-G Lossless Data Compression

1. Purpose

The Multispectral and Hyperspectral Data Compression Working Group (SLS-MHDC) falling under the Space Link Services (SLS) Areas of the CCSDS, has identified the need to update the Green Book CCSDS-120.0-G-3 “Lossless Data Compression.” This determination has arisen in the course of reconfirmation review.

The update is intended to address an additional feature being added to the corresponding Blue Book CCSDS-121.0-B as part of Issue 3 revision of this Blue Book. The Blue Book update is intended to (a) resolve potential ambiguities, and (b) provide a better mechanism for producing a compressed data set as a “file” rather than as a sequence of packets.

2. Key Technical Features

The proposed Issue 4 revision of the Green Book will provide guidance to users on the new section being added to the Blue Book. It will also make minor clarifications and improvements to the current Issue.

3. Benefits

Users will benefit from new material to provide guidance on the use of the new section being added to the Blue Book on the production of a compressed data set as a file.

4. Requirements of Prospective Missions

Missions requiring a well-established very low complexity one-dimensional compression approach, and wishing to produce output as a file, will benefit from this revision. This revision will also provide some additional clarifications to material in the current Issue.

5. Relationship to Existing Standards

The present Issue 3 Green Book is the parent of the proposed Issue 4 Green Book.

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6. Deficiencies, Flaws, and Limitations in Existing Standards

The present Issue 3 Green Book does not provide any guidance on storing compressed output as a file structure.

7. Resources and Schedule

The Multispectral and Hyperspectral Data Compression Working Group identified the following Candidate Resources and Schedule.

Book Editor	1WM	ESA
Additional Editing/Review	1WM	NASA
Contributing Agencies	ESA, NASA	
Monitor Agencies	CNES	
Start of Work	Jan 2019	
Publication	Dec 2019	

For more details, please refer to the CWE Project at:

<https://cwe.ccsds.org/fm/Lists/Projects/DispFormDraft.aspx?ID=666>

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Overview

















































Project Title	Lossless Data Compression (Issue 4)
Approval	Draft
Document Number	120.0
Charter	5.03 Multispectral and Hyperspectral Data Compression Working Group
Document Type	Green
Description of Document	Issue 3 update to adress new section added in CCSDS-121.0-B-3, other minor revisions.
Applicable Patents	There are no patent issues for this technology that are known by the CCSDS community
Patent Comments	NASA GSFC patent on the subject data compressor has expired.
Survey of Similar Standards Documents or Projects Undertaken in Other Bodies and elsewhere in CCSDS	

Resources

Book Editor	ESA
Book Editor Resources	2 WM (ESA 1 WM, NASA 1 WM)
Prototype 1	Not Required
Prototype 1 Resources	
Prototype 2	Not Required
Prototype 2 Resources	
Prototype 3	Not Required
Prototype 3 Resources	
Contribute	CNES
Monitor Only	
Resource Comments	

Schedule

Legend for Schedule Milestones						Original Completion Date (Date in M/D/YYYY format.)	Comments (Date in M/D/YYYY format.)
 = Required for Orange Books							
 = Required for Green Books							
 = Required for Magenta Books							
 = Required for Blue Books							

Note - Red Books are Draft Blue/Magenta Books						
Schedule Milestones	Orange Book	Green Book	Magenta Book	Blue Book		
Project Approved					11/1/2018	
Project Start Date					1/1/2019	
Internal WG Review						
First Draft Circulated to WG					4/29/2019	
First Draft Comments Due					5/6/2019	
Second draft circulated to WG					6/3/2019	
Second Draft Comments Due					7/8/2019	
Final WB Submitted to AD for Further Processing					8/5/2019	
External Milestones						
Secretariat Document Processing					10/7/2019	
First Agency Review						
RID Resolution						
Secretariat Document Processing 2						
Final Agency Review						
RID Resolution						
First Prototype Development						
Second Prototype Development						
CMC Approval					12/7/2019	
Total Time to Complete (in months)					11	

Version: 41.0

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