

## Change Log for *Technical Guidelines for Digitizing Cultural Heritage Materials: Third Edition*

This change log documents the revisions made to the *Draft Technical Guidelines for Digitizing Cultural Heritage Materials (Third Edition)*, published for public review and comment on June 2, 2022 and the final version of the *Guidelines (Third Edition)* published on May 10, 2023. This document includes the major revisions to the document and is not comprehensive of every minor grammatical or formatting change. This document is accompanied by a version of the final *Guidelines (Third Edition)* with changes highlighted. Additionally, there is a record of public responses to the *Draft Guidelines* and specific changes made in response to those comments on the Technical Guidelines Revisions [Comments webpage](#).

For more information about revisions to the document or the revision process, please contact [fadgistillimage@loc.gov](mailto:fadgistillimage@loc.gov).

Document Section and Page Number	Revision
Cover, p. i	Changed publication date to “May 2023”; Removed the word “Draft” and version number under the publication date.
Document Information, p. ii	Added Patrick Breen and Matthew Breitbart (Library of Congress) to the list of editors; Changed publication date to “May 2023”
Code of Ethics, p. iv	Added “for the Still Image Working Group” to the section title; Added “of the image area” after “excessive cropping”
Table of Contents, p. 5	The Table of Contents has been updated to accurately reflect new and revised content page numbers.
Section 1.2, p. 9	Additions to the list of major revisions for the 2023 version of the guidelines
Section 2.4, p. 12	Revised to state that count values have been removed from the 2023 version of the guidelines; Clarification that certain evaluation parameters are informative, and that these appear in white rows with lightly-shaded text in the tables in Chapter 3
Section 2.4.2, p. 13	Added clarification that Tone Response (OECF) is a provisional evaluation parameter for transmissive materials
Section 2.4.3, p. 13	Addition of Gain Modulation as an informative evaluation parameter
Section 2.4.4, p. 13	Added clarification that White Balance is a provisional evaluation parameter for transmissive materials
Section 2.4.5, p. 13	Added information on using flat fielding software and matte targets to reduce non-uniformity; Clarification that Lightness Uniformity is a provisional evaluation parameter for transmissive materials
Section 2.4.6, p. 14	Revised parameter name to “Color (Encoding) Accuracy”; Added clarification on terminology and ‘color accuracy’ in relation to color code values, color profiles, and color spaces

Section 2.4.7, p. 14	References to "lens design or aperture choice" have been removed; Additional alternate terms added; A definition of "color encoding accuracy" has been added to previous section for context
Section 2.4.8, p. 14	Minor wording changes throughout section; Replaced "dpi" with "ppi" throughout section; Clarifying language added to information about SFR50; Clarification that SFR Abnormal Behavior is a parameter that's still under development and therefore not included in tables in Chapter 3; Added Figure 2 to illustrate concept related to Sharpening (Max SFR)
Section 2.4.10, p. 16	Minor wording changes for clarification throughout section
Section 2.4.12, p. 18	Revised parameter name to "Skew & Rotation"; Added information on the distinction between skew and rotation; Added Figure 5 to illustrate concepts of skew and rotation; Revised definition of the parameter and note that the guidelines now allow for rotation correction
Section 2.4.15, p. 19	Added context for use of Highlight/Shadow as an evaluation parameter for transmissive materials; Clarification that this is an informational parameter
Section 2.4.16, p. 19	Added definition for Dynamic Range as informative evaluation parameter
Section 2.4.17, p. 20	Removed sentence beginning "Using these large gamut..."
Section 2.5.2, p. 22	Added definitions for the acronyms OCR and HCR; Added "handwritten text recognition (HTR)"
Section 2.5.4, p. 23	Added webpage title for link to Library of Congress Sustainability of Digital Formats site; Added title and link for Library's Recommended Formats page
Section 2.6.1, p. 23	Added definition for the acronym CRI and footnote with link to more information about Color Rendering Index; Added information about environmental data loggers; Corrected link for American Institute for Conservation
Section 2.6.6, p. 25	Changed "spectral distribution" to "spectral power distribution"; Added note to see sections for specific collection types in Chapter 3
Section 2.8, p. 26	Added link to Technical Guidelines Resources webpage
Section 3.1, p. 27	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Removed note regarding the use of gloves during imaging
Section 3.2, p. 30	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI

	conformance; Added footnote regarding the use of automated book scanning technology
Section 3.3, p. 34	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Removed “scanning” from bullet beginning “Single exposure total area...”; Removed bullet stating that no software de-skew is permitted
Section 3.4, p. 38	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Removed bullet stating that no software de-skew is permitted
Section 3.5, p. 41	Added note that U.S. Federal agencies may use up to 20:1 visually lossless compression to evaluation parameters table; Updated value for Tone Response (OECF) evaluation parameter; Updated units and value for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated value for Sharpening evaluation parameter; Removed rows with digital count values in evaluation parameters table; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added information on metrics affected by characteristics of modern textual documents; Added information on JPEG 2000 visually lossless compression to narrative section
Section 3.6, p. 44	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance
Section 3.7, p. 47	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance
Section 3.8, p. 50	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated formatting for footnote regarding resolutions higher than 600 ppi; Updated units and values

	for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Removed sentence regarding 300 ppi minimum from “Not Recommended Technologies” section
Section 3.9, p. 54	Updated section title to “35mm up to 4”x5””; Removed rows with digital count values in evaluation parameters table; Updated units and values for Highlight/Shadow, Tolerance evaluation parameter; Changed Highlight/Shadow, Tolerance to informative evaluation parameter; Added units to Dynamic Range parameter in table; Added Tone Response (OECF) and White Balance as provisional evaluation parameters; Designated Lightness Uniformity as a provisional evaluation parameter; Updated values for Sharpening evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added clarification about the particulars of imaging film content and provisional evaluation parameters; Replaced “APO” with “apochromatic” in Notes section
Section 3.10, p. 57	Updated section title to “Transparencies 4”x5” and Larger””; Updated formatting for footnote regarding large format films; Removed rows with digital count values in evaluation parameters table; Updated units and values for Highlight/Shadow, Tolerance evaluation parameter; Changed Highlight/Shadow, Tolerance to informative evaluation parameter; Added units to Dynamic Range parameter in table; Added Tone Response (OECF) and White Balance as provisional evaluation parameters; Designated Lightness Uniformity as a provisional evaluation parameter; Updated values for Sharpening evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added clarification about the particulars of imaging film content and provisional evaluation parameters; Replaced “APO” with “apochromatic” in Notes section; Revised bullet regarding “stitching”
Section 3.11, p. 60	Updated section title to “35mm up to 4”x5””; Removed rows with digital count values in evaluation parameters table; Updated units and values for Highlight/Shadow, Tolerance evaluation parameter; Changed Highlight/Shadow, Tolerance to informative evaluation parameter; Added units to Dynamic Range parameter in table; Added Tone Response (OECF) and White Balance as provisional evaluation parameters; Designated Lightness Uniformity as a provisional evaluation parameter; Updated values for Sharpening evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added clarification about the particulars of imaging film content and provisional evaluation parameters; Updated link with information on sensitometry in narrative section; Updated link with information on photographic film in narrative section; Added clarifications and recommendations for working with negatives in the narrative section; Added information about imaging with narrow band blue light and antireflective glass in Notes section
Section 3.12, p. 64	Updated section title to “Negatives 4”x5” and Larger””; Updated formatting for footnote regarding large format films; Removed rows with digital count values in evaluation parameters table; Updated units and values for Highlight/Shadow, Tolerance evaluation parameter; Changed Highlight/Shadow, Tolerance to informative evaluation parameter; Added

	units to Dynamic Range parameter in table; Added Tone Response (OECF) and White Balance as provisional evaluation parameters; Designated Lightness Uniformity as a provisional evaluation parameter; Updated values for Sharpening evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added clarification about the particulars of imaging film content and provisional evaluation parameters; Updated link with information on sensitometry in narrative section; Updated link with information on photographic film in narrative section; Added clarifications and recommendations for working with negatives in the narrative section; Added information about imaging with narrow band blue light and antireflective glass in Notes section; Revised bullet regarding “stitching”
Section 3.13, p. 68	Removed rows with digital count values in evaluation parameters table; Added Gain Modulation as informative evaluation parameter; Updated values for Tone Response (OECF) evaluation parameter; Updated units and values for Color Accuracy 90 <sup>th</sup> Percentile evaluation parameter; Updated values for Sharpening evaluation parameter; Changed Noise (Lower Limit) to informative evaluation parameter
Section 3.14, p. 71	Removed rows with digital count values in evaluation parameters table; Updated units and values for Highlight/Shadow, Tolerance evaluation parameter; Changed Highlight/Shadow, Tolerance to informative evaluation parameter; Added units to Dynamic Range parameter in table; Added Tone Response (OECF), White Balance, and Lightness Uniformity as provisional evaluation parameters; Updated values for Sharpening evaluation parameter; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added clarification about the particulars of imaging film content and provisional evaluation parameters; Updated Recommended Technologies for imaging; Defined “HDR” acronym and updated link with information on HDR imaging in narrative section; Updated bullet and link with information on DICOM
Section 3.15, p. 74	Removed rows with digital count values in evaluation parameters table; Updated units and values for Highlight/Shadow, Tolerance evaluation parameter; Changed Highlight/Shadow, Tolerance to informative evaluation parameter; Added units to Dynamic Range parameter in table; Added Tone Response (OECF), White Balance, and Lightness Uniformity as provisional evaluation parameters; Added clarification that white rows with light gray text are informative parameters and not required for FADGI conformance; Added clarification about the particulars of imaging film content and provisional evaluation parameters; Added information about imaging with narrow band blue light and antireflective glass in Notes section
Section 4.1, p. 76	Removed sentence beginning “Each block of four pixels...”
Section 4.2, p. 76	Moved “Lens” section to 4.2 (from 4.5) to be ahead of “Scanner” section in the document
Section 4.3, p. 76	Changed “Scanner” section to 4.3 (from 4.2); Changed the subsequent sections about specific types of scanners to be sub-sections of 4.3 (Planetary Scanner section 4.3.1, Flatbed Scanner section 4.3.2, Film Scanner section 4.3.3, Drum Scanner section 4.3.4)
Section 5.2, p. 79	Updated link with information on collection surveys

Section 5.3.1, p. 84	Created formal subsection for Sample Image Processing Workflow
Section 6.7, p. 89	Replaced “searchable ASCII” with “searchable electronic text”
Section 7.1, p. 89	Removed sentence beginning “When specifying a desired file size...”
Section 10.2, p. 109	Removed link with information about metadata editors
Section 11.1, p. 110	Updated link with information about digital repositories
Appendix A, p. 111	Added note that full definitions for terms in this document may be found in online glossary; Updated definition for “data logger”; Updated definition for “Dynamic range”; Updated definition for “Handprint character recognition”; Updated definition for “Nyquist frequency”; Added definition for “Nyquist principle”; Updated definition for “Optical character recognition”
Throughout Document	Updated formatting for the use of “sRGB”, “Adobe RGB (1998)”, “EXIF”, and other acronyms/terms for accuracy and consistency