Digital Imaging Standards and Best Practices

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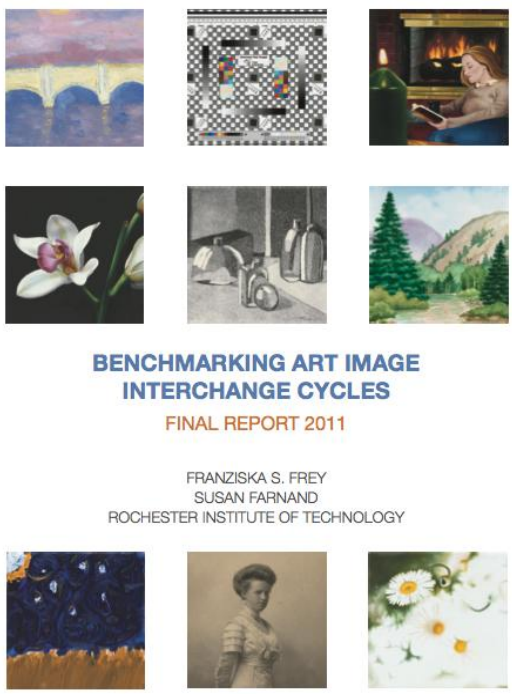

Table 1-1. Cultural heritage institutions that participated in this project[7]

Participating Institutions	
The Metropolitan Museum of Art	Art Institute of Chicago
MoMA - The Museum of Modern Art	Minneapolis Institute of Arts
The Guggenheim Museum	The National Gallery, London
Harvard Art Museum	Victoria & Albert Museum
Harvard College Library	Berkeley Art Museum and Pacific Film Archive
Northeast Document Conservation Center	The Getty Center
Museum of Fine Arts, Boston	The National Gallery of Art, Washington
The Beinecke Rare Book and Manuscript Library at Yale University	Yale University Art Gallery
	Yale Center for British Art

Section 3: Experiments

Table 3-4. Summarized results for each piece of artwork by each of the participating institutions[34]

Workflow	Mean	Still Life	Bridge	Daisies	Firelight	Mountain	Photograph
W1	Better	Better	Average	Average	Better	Better	Better
W2	Worse	Worse	Worse	Worse	Worse	Worse	Worse
W3	Worse	Average	Worse	Better	Average	Worse	Worse
W4	Average	Better	Worse	Worse	Worse	Worse	Worse
W5	Worse	Average	Worse	Worse	Worse	Worse	Worse
W6	**Better**	**Worse**	**Better**	**Worse**	**Better**	**Better**	**Average**
W7	Average	Worse	Worse	Better	Average	Worse	Worse
W8	**Better**	**Worse**	**Better**	**Average**	**Better**	**Better**	**Average**
W9	**Better**	**Worse**	**Better**	**Average**	**Better**	**Better**	**Worse**
W10	Average	Worse	Better	Better	Worse	Better	Worse
W11	**Better**	**Better**	**Average**	**Better**	**Average**	**Worse**	**Better**
W12	Worse	Worse	Worse	Worse	Worse	Worse	Better
W13	**Better**	**Better**	**Better**	**Better**	**Better**	**Better**	**Better**
W14	**Better**	**Better**	**Worse**	**Better**	**Better**	**Better**	**Better**
W15	Average	Better	Better	Worse	Worse	Better	Better
W16	Better	Better	Better	Better	Worse	Better	Better
W17	Worse	Better	Average	Worse	Worse	Worse	Worse
W18	Average	Average	Worse	Better	Better	Worse	Worse

The Issues

- Light
- Environmental conditions
- Cameras and scanners
- Monitor
- ICC color management
- File formats
- Archiving

Light Sources

- Qualities of light sources
  - Intensity
  - Point source
  - Diffused
  - Polarized
  - Direction

Color Rendering Index

- The Myth: Color rendering index (CRI) is an accurate measure of the suitability of a light source for imaging.
- The truth: CRI is calculated by measuring color at only a few points in the spectrum.

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ISO 3664

FADGI:

Provides specifications governing viewing images on reflective and transmissive media, as well as images displayed on a computer monitor without direct comparison to any form of the originals

ISO 12646

FADGI:

Provides specific requirements for monitors and their surrounds for direct comparison of images on a computer monitor with originals (known as soft proofing).

Also provides specific room color and illumination levels.

Environmental Conditions

FADGI:

ISO 3664 provides two luminance levels for viewing originals, ISO 12646 recommends using the lower levels (P2 and T2) when comparing to the image on screen.

The actual illumination level on originals should be adjusted so the perceived brightness of white in the originals matches the brightness of white on the monitor.

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Differences

- Radically different imaging technologies
  - PMT
  - Tri-linear CCD
  - CMOS
  - CCD

Cameras and Scanners

- 7 ISO standards

FADGI:

Even when digitization equipment is assessed as described below, it is still necessary to have knowledgeable and experienced staff to evaluate images visually. At this time, it is not possible to rely entirely on the objective test measurements to ensure optimum image quality. It is still necessary to have staff with the visual literacy and technical expertise to do a good job with digitization and to perform quality control for digital images. This is true for the digitization of all types of original materials, but very critical for the digitization of photographic images in particular.

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Monitors

- Calibrated
- Reference

Monitors

FADGI:

Using a photosensor-based monitor calibrator, however, does not always ensure monitors are calibrated well. Ten years of practical experience has shown calibrators and calibration software may not work accurately or consistently.

The Issues

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ICC Color Management

FADGI:

Not all hardware and software combinations produce the same color and tonal conversion, and even this workflow will not always produce the best results possible for a particular device or original. Different scanning, image processing and printing applications have their own interpretation of the ICC color management system, and have varying controls that produce different levels of quality.

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Master File Formats

- Tiff
- JPEG 2000

Derivitive File Formats

- Jpeg
- JPEG 2000
- PDF

The Issues

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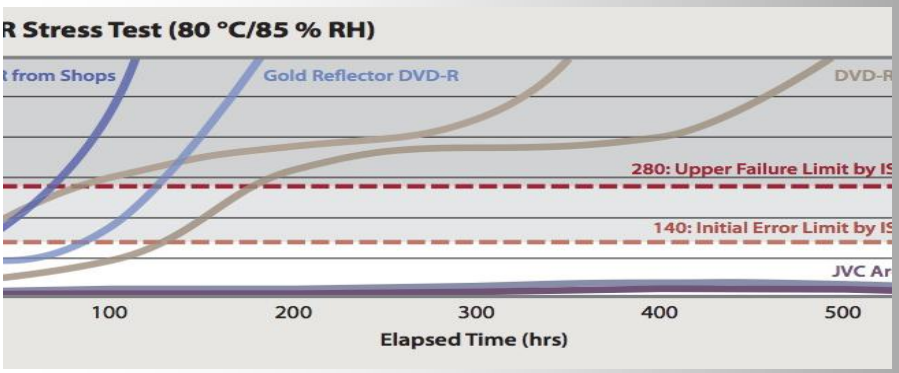
Archiving

- CD/DVD
- Hard Disk
- LTO Tape
- Digital Repository
- Cloud

JVC DVD Stress Test



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