ISO/IEC JTC 1/SC 29/WG 1
(ITU-T SG16)

Coding of Still Pictures

JBIG                    JPEG
Joint Bi-level Image     Joint Photographic
 Experts Group           Experts Group

TITLE:    Corrections and Additions to the JPEG AIC Common Test Conditions on
Subjective Image Quality Assessment

SOURCE:   WG1

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1. Scope of this document

This document reports corrections and additions identified at the 98th JPEG meeting with respect to the JPEG AIC Common Test Conditions on Subjective Image Quality Assessment, N100334, 97th JPEG meeting, October 2022.

2. Distorted images

Section 2.2 of the Common Test Conditions on Subjective Image Quality Assessment document reports a preliminary list of codecs, which was updated before the final release of the dataset. The final release of the dataset includes images encoded with the following codecs:

- JPEG
- JPEG 2000
- HEVC Intra
- (updated to use screen content coding tool for image 4) VVC Intra
- JPEG XL
- (added) AVIF

In a future release of the dataset, which will be issued after the Call for Contributions submission deadline, distorted images using the JPEG AI codec will be made available.

3. Image coding information

Annex A of the Common Test Conditions on Subjective Image Quality Assessment document reports an incomplete list of command lines used to encode the images of the dataset.

The following setup has been adopted for encoding/decoding the JPEG AIC-3 dataset with AVIF:

- Implementation: https://github.com/AOMediaCodec/libavif
- Version: 0.10.1 (aom [enc/dec]:3.4.0, svt [enc]:v1.2.1)
- Command line example:

```
  avifenc -c aom -y 444 --min 0 --max 63 -s 6 -j 1 -a end=usage=q -a tune=ssim -a cq-level=[QUALITY_PARAMETER] [INPUT].png [ENCODED].avif

  avifdec [ENCODED].avif [DECODED].png
```
4. Selection of images through objective scores

Annex B of the Common Test Conditions on Subjective Image Quality Assessment document reports incomplete information about the selection of the quality levels included in the dataset. Images encoded with AVIF, as well as image 4 encoded with HEVC and VVC were added to the dataset subsequently the subjective expert viewing. The procedure adopted for the selection of the distorted images was therefore different than the one described in the CTC document.

The adopted procedure is the following:

- Two objective metrics, i.e. PSNR and SSIM, were computed on all the images selected through expert viewing. The average metric values over the different codecs were then computed for each image and each of the 10 selected quality levels.
- The closest metric value between the AVIF-encoded images and the average computed as above was found.
- Informal subjective viewing was performed by several JPEG experts to validate the above selection. Based on their assessment, the final set of images was obtained.

5. Anchor methodology for subjective image quality assessment

The Common Test Conditions on Subjective Image Quality Assessment document does not report anchor subjective quality assessment methodology which will be used during the assessment of the contributions. The anchor, identified during the 98th JPEG Meeting, is the AIC-2 Annex A methodology [1], comprising a side-by-side forced-choice assessment with reference images presented to the subjects. The results obtained with this methodology will be used during the assessment of the contributions to the CfC. Additionally, test results collected using BT.500 methodology, i.e. DSIS/DSCQS [2], and Flicker test, i.e. AIC-2 Annex B [1], might be used during the assessment of the contributions.

6. Test material

Section 2 of the Common Test Conditions on Subjective Image Quality Assessment document reports the instructions to download the dataset, without reporting the specific folder where the latest version of the dataset is stored. The updated credentials are the following:

```
Protocol: FTP
FTP address: tremplin.epfl.ch
Username: jpegaic@mmspgddata.epfl.ch
Password: .L:p*O
FTP port: 21
(added) Folder name: 2023-01
```
Bibliography
