

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

Coding of Still Pictures

JBIG

Joint Bi-level Image
Experts Group

JPEG

Joint Photographic
Experts Group

TITLE: Corrections and Additions to the JPEG AI Common Training
and Testing Conditions

SOURCE: ICQ Group

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REQUESTED ACTION: Distribute

DISTRIBUTION: Public

Contact:

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1 Purpose of this Document

This document reports corrections and additions identified at the 95th JPEG meeting with respect to the JPEG AI Common Training and Test Conditions, N100106, 94th JPEG meeting, January 2022.

2 JPEG 2000 Anchor Generation

In Section 8.1, the CTTC document includes incorrect command line parameter for the encoding of the JPEG 2000 anchors. The evidence is from the Kakadu Software documentation, where parameter “-no_weights” corresponds to MSE optimization. Therefore, the following JPEG2000 configuration is the following:

- Encoder command line for the visually weighted configuration:

```
kdu_compress -i [INPUTFILE_PPM].ppm -o [FILE_BITS].bits -rate <TARGET_BPP>  
Qstep=0.001 -tolerance 0 -full -precise -num_threads 1
```

- Encoder command line for the MSE weighted configuration:

```
kdu_compress -i [INPUTFILE_PPM].ppm -o [FILE_BITS].bits -rate <TARGET_BPP>  
Qstep=0.001 -tolerance 0 -full -precise -no_weights -num_threads 1
```

3 VVC Anchor Generation for Screen Content Encoding

The following VVC configuration will be used for images classified as screen content.

- Encoder command line:

```
EncoderAppStatic -c cfg/encoder_intra_vtm.cfg -c cfg/classSCC.cfg -i  
[INPUTFILE_YUV].yuv -wdt <WIDTH> -hgt <HEIGHT> -b [FILE_BITS].bits -f 1 -fr 10 -q <QP>  
--InputBitDepth=10 --InputChromaFormat=444 --ChromaFormatIDC=444 --  
TemporalSubsampleRatio=1 --Level=6.2
```

4 JPEG AI Naming Conventions for Super-Resolution

The following is mandatory for bitstreams and reconstructed images and should be honored.

- for bit-streams (in bit folder)

<TEAMID>_<IMGID>_TE_
.bits

- for bit-reconstructed images (in rec folder)

<TEAMID>_<IMGID>_TE_<RES>_<ORIGINAL BIT DEPTH>bit_sRGB_
.png

Here is RES resolution of up-sampled to full size ground truth image (not resolution of image encoded); BR takes values 006, 012, 025, 050, 075.

Same streams must be decodable by decoder in standard reconstruction task submitted by same team, to produce reconstructed image for further decoded anchor computation.

5 JPEG AI Naming Conventions for Denoising

The following is mandatory for bitstreams and reconstructed images and should be honored.

- for bit-streams (in `bit` folder)

`<TEAMID>_<IMGID>_<NOISE LEVEL>_TE_
.bits`

- for bit-reconstructed images (in `rec` folder)

`<TEAMID>_<IMGID>_<NOISE LEVEL>_TE_<RES>_<ORIGINAL BIT`

`DEPTH>bit_sRGB_
.png`

Here `NOISE LEVEL` indicates noise level of encoded image; `BR` takes values 012, 025, 050, 075.

Same streams must be decodable by decoder in standard reconstruction task submitted by same team, to produce reconstructed image for further decoded anchor computation.

6 JPEG AI Naming Conventions of Image Classification

The following is mandatory for bitstreams and should be honored.

- for bit-streams (in `bit` folder)

`<TEAMID>_<IMGID>_TE_
.bits`

Same streams must be decodable by decoder in standard reconstruction task submitted by same team, in order to produce reconstructed image for further decoded anchor computation.

Here `BR` takes values 012, 025, 050, 075. Top-1 and Top-5 accuracy for each bit-rate should be computed by the sub-task decoder. Examples for Top-1 and Top-5 accuracy computation can be found [here](#).

In this task `IMGID` is image name in of [ILSVRC 2012](#).

For example, names of input images are

[DATASET DIRECTORY](#)

```
n01440764
  ILSVRC2012_val_00000293.JPEG
  ILSVRC2012_val_00002138.JPEG
  ...
```

```
n01443537
  ILSVRC2012_val_00000236.JPEG
  ILSVRC2012_val_00000262.JPEG
  ...
```

...

Corresponding names for bitstreams are

`_Classification/bit`

```
n01440764
  <TEAMID>_00000293_TE_<BR>.bits
  <TEAMID>_00002138_TE_<BR>.bits
  ...
```

```
n01443537
  <TEAMID>_00000236_TE_<BR>.bits
  <TEAMID>_00000262_TE_<BR>.bits
```