**ISO/IEC JTC 1/SC 29/WG 7  
MPEG 3D Graphics Coding   
Convenorship: AFNOR (France)**

**Document type:** Output Document

**Title:** Corrigendum for CfP for Dynamic Mesh Coding

**Status:** Approved

**Date of document:** 2022-01-31

**Source:** ISO/IEC JTC 1/SC 29/WG 7

**Expected action:** None

**Action due date:** None

**No. of pages:** 8 (with cover page)

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**Committee URL:** [https://isotc.iso.org/livelink/livelink/open/jtc1sc29wg7](https://isotc.iso.org/livelink/livelink/open/jtc1sc29wg3)

**INTERNATIONAL ORGANIZATION FOR STANDARDIZATION**

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**ISO/IEC JTC 1/SC 29/WG 7 MPEG 3D Graphics Coding**

**ISO/IEC JTC 1/SC 29/WG 7 N265**

**Online - January 2022**

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| **Title** | **Corrigendum for CfP for Dynamic Mesh Coding** |
| **Source** | **WG 7, MPEG 3D Graphics Coding** |
| **Status** | **Approved** |
| **Serial Number** | **MDS21150** |

# Abstract

This document contains the corrigendum for the Call for Proposals (CfP) for Dynamic Mesh coding technology [1]. For easy usage, this document follows the same chapter structure as the CfP itself. Text and tables provided in this document shall replace the text and tables in the CfP as described below.

The updated spreadsheet attached to this corrigendum shall replace the spreadsheet that was published with the CfP, so responses to the CfP shall use the updated spreadsheet.

# References

[1] CfP for Dynamic Mesh Coding, ISO/IEC JTC 1/SC 29/WG 7/N00231, Online, October 2021

# Introduction

No change

# Timeline

No change

## Timeline of the calls, deadlines and evaluation of the responses:

The action “Evaluation of responses” in Table 1 shall be replaced as follows:

|  |  |  |
| --- | --- | --- |
| **Action** | **Date** | **Remarks** |
| Evaluation of responses | 2022.04.25  2022.04.29 | Action performed during the MPEG meeting week. Proponents are required to attend the meeting to present their proposals |

Table 1 Timeline

# Definitions

No change

# Requirements

No change

# Test Materials, Categories and Conditions

No change

# Anchors

The following note shall be added at the beginning of this section:

Note: Anchors for dynamic mesh coding evaluation were updated during the 6th meeting of WG7 and shall be downloaded again from the repository mentioned in the CfP. Additional information on the anchors is available in document [16] from the 6th meeting of WG7.

# Evaluation Procedure

## Objective Evaluation of lossy condition

No change

### Software & Usage

The URL to the MPEG GIT for the mmetric software shall be replaced as follows:

<http://mpegx.int-evry.fr/software/MPEG/PCC/mpeg-pcc-mmetric/-/tree/1_0_1>

The note “it is required for Linux systems to compile the metric software with gcc version 9.3.0” shall be removed.

# Submission Requirements

Replace the sentence “Proponents are required to present their proposals in person at MPEG 138” by “Proponents are required to attend the meeting MPEG 138 and present their proposals”.

# IPR

No change

# Contacts

No change

# References

Reference [2] shall be replaced as follows:

1. 3D graphics renderer for the CfP on dynamic mesh compression, ISO/IEC JTC1/SC29 WG7 Doc. N00298, Online, January 2022

Reference [15] is no more valid and shall be deleted

Add a new reference as follows:

1. Anchors for Dynamic Mesh Coding evaluation, ISO/IEC JTC1/SC29 WG7 Doc. N00278, Online, January 2022

# Annex A: Information Form

No change

# Annex B: Objective Evaluation Metrics & Usage of Metric Software

## B.4 Software usage for computing the point cloud and image-based metrics

## B.4.1 Lossless condition

No change

## B.4.2 Lossy condition

Command lines shall be replaced as follows:

./mm \

reindex --sort oriented -i ref.obj -o ID:ref\_reordered END

sample --mode grid --gridSize $gridSize \

--useNormal --useFixedPoint --minPos "$globalMinPos" --maxPos "$globalMaxPos" \

--bilinear -i ID:ref\_reordered -m ref.png -o ID:pcRef END\

reindex --sort oriented -i dis.obj -o ID:dis\_reordered END

sample --mode grid --gridSize $gridSize \

--useNormal --useFixedPoint --minPos "$globalMinPos" --maxPos "$globalMaxPos" \

--bilinear -i ID:dis\_reordered -m dis.png -o ID:pcDis END\

compare --mode pcc --resolution $maxBBLength \

--inputModelA ID:pcRef --inputModelB ID:pcDis \

--outputCsv perFrame.csv > summary.txt

./mm

dequantize --inputModel voxRef.obj --outputModel ID:deqRef --useFixedPoint \

--qp $QP --minPos ”$globalMinPos” --maxPos ”$globalMaxPos” \

--qt $QT --minUv ”0 0” --maxUv ”1.0 1.0” END \

reindex --sort oriented -i ID:deqRef -o ID:ref\_reordered END \

sample --mode grid --gridSize $gridSize \

--useNormal --useFixedPoint --minPos "$globalMinPos" --maxPos "$globalMaxPos" \

--bilinear -i ID:ref\_reordered -m ref.png -o ID:pcRef END \

dequantize --inputModel voxDis.obj --outputModel ID:deqDis --useFixedPoint \

--qp $QP --minPos ”$globalMinPos” --maxPos ”$globalMaxPos” \

--qt $QT --minUv ”0,0” --maxUv ”1.0,1.0” END \

reindex --sort oriented -i ID:deqDis -o ID:ref\_reordered END \

sample --mode grid --gridSize $gridSize \

--useNormal --useFixedPoint --minPos "$globalMinPos" --maxPos "$globalMaxPos" \

--bilinear -i ID:ref\_reordered -m dis.png -o ID:pcDis END \

compare --mode pcc --resolution $maxBBLength \

--inputModelA ID:pcRef --inputModelB ID:pcDis \

--outputCsv perFrame.csv > summary.txt

The grid size for the point-based metric shall be fixed to 1024 via the variable gridSize

## B.5.3 Sequence processing

Command lines shall be replaced as follows:

./mm \

sequence --firstFrame 150 --lastFrame 165 END\

dequantize --inputModel voxRef\_00%3d.obj --outputModel ID:deqRef \

--qp $QP --minPos ”$globalMinPos” --maxPos ”$globalMaxPos” –useFixedPoint \

--qt $QT --minUv ”0 0” --maxUv ”1.0 1.0” END \

reindex --sort oriented -i ID:deqRef -o ID:ref\_reordered END \

sample --mode grid --gridSize $gridSize \

--useNormal --useFixedPoint --minPos "$globalMinPos" --maxPos "$globalMaxPos" \

--bilinear -i ID:ref\_reordered -m ref\_00%3d.png -o ID:pcRef END \

dequantize --inputModel voxDis\_00%3d.obj --outputModel ID:deqDis –useFixedPoint \

--qp $QP --minPos ”$globalMinPos” --maxPos ”$globalMaxPos” \

--qt $QT --minUv ”0,0” --maxUv ”1.0,1.0” END \

reindex --sort oriented -i ID:deqDis -o ID:ref\_reordered END \

sample --mode grid --gridSize $gridSize \

--useNormal --useFixedPoint --minPos "$globalMinPos" --maxPos "$globalMaxPos" \

--bilinear -i ID:ref\_reordered -m dis\_00%3d.png -o ID:pcDis END \

compare --mode pcc --resolution $maxBBLength \

--inputModelA ID:pcRef --inputModelB ID:pcDis \

--outputCsv perFrame.csv > summary.txt

The grid size for the point-based metric shall be fixed to 1024 via the variable gridSize.

# Annex C: Anchor tool usage

Tables 8 and 9 shall be replaced as follows:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Category** | **Test**  **Class** | **Test material**  **dataset filename** | **Rate** | **Draco**  **QP** | **Draco**  **QT** | **Mesh Resolution** | **HM**  **QP** | **Texture**  **Resolution** |
| Dynamic Objects with Texture Mapping | A | Longdress | R1 | **9** | **8** | **10** | **40** | **4** |
| R2 | **10** | **10** | **15** | **38** | **2** |
| R3 | **11** | **10** | **15** | **33** | **2** |
| R4 | **11** | **10** | **25** | **39** | **1** |
| R5 | **12** | **11** | **original** | **37** | **1** |
| Soldier | R1 | **8** | **8** | **10** | **36** | **4** |
| R2 | **10** | **10** | **15** | **35** | **2** |
| R3 | **11** | **10** | **20** | **33** | **2** |
| R4 | **11** | **10** | **25** | **36** | **1** |
| R5 | **12** | **11** | **original** | **32** | **1** |
| B | Basketball\_player | R1 | **10** | **8** | **5** | **43** | **2** |
| R2 | **10** | **9** | **10** | **33** | **4** |
| R3 | **11** | **11** | **15** | **30** | **2** |
| R4 | **12** | **11** | **20** | **33** | **1** |
| R5 | **12** | **13** | **25** | **30** | **1** |
| Dancer | R1 | **9** | **9** | **5** | **36** | **4** |
| R2 | **10** | **9** | **10** | **34** | **4** |
| R3 | **12** | **10** | **15** | **31** | **2** |
| R4 | **12** | **10** | **25** | **30** | **2** |
| R5 | **12** | **13** | **25** | **30** | **1** |
| C | Mitch | R1 | **10** | **10** | **5** | **43** | **2** |
| R2 | **9** | **9** | **10** | **41** | **2** |
| R3 | **12** | **10** | **10** | **38** | **2** |
| R4 | **12** | **10** | **15** | **37** | **2** |
| R5 | **12** | **12** | **20** | **40** | **1** |
| Thomas | R1 | **10** | **11** | **5** | **40** | **2** |
| R2 | **10** | **9** | **10** | **39** | **2** |
| R3 | **12** | **11** | **10** | **35** | **2** |
| R4 | **12** | **11** | **15** | **33** | **2** |
| R5 | **12** | **12** | **20** | **35** | **1** |
| Football | R1 | **6** | **7** | **5** | **50** | **4** |
| R2 | **10** | **9** | **15** | **46** | **4** |
| R3 | **11** | **10** | **25** | **41** | **4** |
| R4 | **12** | **11** | **25** | **41** | **2** |
| R5 | **12** | **11** | **original** | **44** | **1** |
| Levi | R1 | -1 | -1 | -1 | -1 | -1 |
| R2 | **7** | **2** | **25** | **51** | **4** |
| R3 | **7** | **6** | **25** | **48** | **4** |
| R4 | **9** | **8** | **25** | **40** | **4** |
| R5 | **11** | **10** | **original** | **35** | **4** |

Table 8: Coding parameters for random access lossy anchor generation

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Category** | **Test**  **Class** | **Test material**  **dataset filename** | **Rate** | **Draco**  **QP** | **Draco**  **QT** | **Mesh Resolution** | **HM**  **QP** | **Texture**  **Resolution** |
| Dynamic Objects with Texture Mapping | A | Longdress | R1 | **9** | **8** | **10** | **41** | **4** |
| R2 | **11** | **9** | **15** | **37** | **4** |
| R3 | **11** | **10** | **20** | **41** | **2** |
| R4 | **11** | **10** | **25** | **38** | **2** |
| R5 | **12** | **10** | **original** | **36** | **2** |
| Soldier | R1 | **9** | **9** | **10** | **40** | **4** |
| R2 | **10** | **9** | **20** | **41** | **2** |
| R3 | **10** | **10** | **20** | **36** | **2** |
| R4 | **11** | **10** | **25** | **41** | **1** |
| R5 | **12** | **10** | **original** | **37** | **1** |
| B | Basketball\_player | R1 | **10** | **8** | **5** | **49** | **2** |
| R2 | **10** | **9** | **10** | **40** | **4** |
| R3 | **11** | **10** | **15** | **35** | **2** |
| R4 | **12** | **10** | **20** | **31** | **2** |
| R5 | **12** | **11** | **25** | **32** | **1** |
| Dancer | R1 | **9** | **9** | **5** | **43** | **4** |
| R2 | **10** | **9** | **10** | **40** | **4** |
| R3 | **11** | **10** | **15** | **36** | **2** |
| R4 | **12** | **10** | **20** | **32** | **2** |
| R5 | **12** | **11** | **25** | **33** | **1** |
| C | Mitch | R1 | **9** | **9** | **10** | **48** | **4** |
| R2 | **11** | **10** | **10** | **48** | **2** |
| R3 | **12** | **10** | **20** | **45** | **2** |
| R4 | **12** | **11** | **25** | **46** | **1** |
| R5 | **12** | **12** | **25** | **41** | **1** |
| Thomas | R1 | **10** | **8** | **10** | **46** | **4** |
| R2 | **11** | **10** | **10** | **44** | **2** |
| R3 | **12** | **10** | **20** | **40** | **2** |
| R4 | **12** | **12** | **20** | **41** | **1** |
| R5 | **12** | **12** | **25** | **37** | **1** |
| Football | R1 | **6** | **7** | **5** | **51** | **4** |
| R2 | **9** | **9** | **15** | **49** | **4** |
| R3 | **11** | **10** | **20** | **46** | **4** |
| R4 | **12** | **11** | **25** | **48** | **2** |
| R5 | **12** | **11** | **original** | **44** | **2** |
| Levi | R1 | -1 | -1 | -1 | -1 | -1 |
| R2 | **6** | **2** | **25** | **50** | **4** |
| R3 | **5** | **6** | **25** | **49** | **4** |
| R4 | **8** | **8** | **25** | **48** | **4** |
| R5 | **11** | **9** | **original** | **49** | **2** |

Table 9: Coding parameters for all-intra lossy anchor generation

Annex D: Details on subjective testing

## D.1 Generation of video sequences

The text

“

The Mesh renderer software can be found in the MPEG GIT:

<http://mpegx.int-evry.fr/software/MPEG/PCC/mpeg-pcc-renderer.git>

For producing the videos, the first step is to generate a camera path for each sequence. The generation of camera paths is described in [15] section 3.2.3 and the resulting path is stored in a .txt file.

“

shall be replaced by

“

The Mesh renderer software can be found in the MPEG GIT:

<http://mpegx.int-evry.fr/software/MPEG/PCC/mpeg-pcc-renderer>

The master branch contains the latest version of this software (tag. V7.0) and will be used for subjective evaluation.

For producing the videos, the first step is to generate a camera path for each sequence. The generation of camera paths is described in [2] section 2.2 and the resulting path is stored in a .txt file.

“

Annex E: Visualization of voxelized mesh content

The text string globalPosMax shall be replaced by globalMaxPos

The text string globalPosMin shall be replaced by globalMinPos

Table 10 shall be replaced as follows:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test material**  **dataset filename** | **globalMinPos** | | | **globalMaxPos** | | | **maxBBLength** |
| **(x)** | **(y)** | **(z)** | **(x)** | **(y)** | **(z)** |
| Longdress | -0.475553989 | -1.4576 | -0.284981996 | 481.324005 | 1023.37 | 659.137024 | 1024.8276 |
| Soldier | -0.366236001 | 1.10722005 | 0.224947006 | 508.764008 | 1023.37 | 637.421997 | 1022.26277995 |
| Basketball\_player | -725.812988 | -483.908997 | -586.02002 | 1252.02002 | 1411.98999 | 1025.34998 | 1977.833008 |
| Dancer | -902.244995 | -486.196991 | -670.518005 | 621.093994 | 1576.04004 | 738.028992 | 2062.237031 |
| Mitch | -588.255981 | 5.80515003 | -469.799011 | 734.567993 | 1829.69995 | 697.179016 | 1823.89479997 |
| Thomas | -265.006989 | -4.04448986 | -248.710999 | 320.546997 | 1820.93005 | 400.225006 | 1824.97453986 |
| Football | 0.00728459982 | -0.00232295995 | -0.0394272991 | 1023.96997 | 980.596008 | 966.742004 | 1023.96268540018 |
| Levi | -0.780686975 | -0.0424938016 | -0.594317973 | 0.857237995 | 1.90897 | 0.687259018 | 1.9514638016 |

Table 10 Conversion parameters for the Mesh sequences