**INTERNATIONAL ORGANISATION FOR STANDARDISATION**

**ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC1/SC29/WG11**

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC1/SC29/WG11 MPEG2016/N16731**

**January 2017, Geneva, CH**

|  |  |
| --- | --- |
| **Source** | Requirements |
| **Status** | Approved |
| **Title** | MPEG-I visual test material summary |
| **Editors** | Takanori Senoh, Arianne Hinds, Krzysztof Wegner, Gauthier Lafruit, Masayuki Tanimoto  |

# Introduction

This document summarizes updated test materials which can be used for MPEG-I phase 2 explorations.

# Test material

Currently four type of test material are available: Dense 1D without the depth, Sparse 1D with depth, Full parallax, 360 convergent multicamera and 360 divergent multicamera. Test materials for each of them are listed below.

## Dense 1D without the depth

Table 1 lists available dense 1D test sequences without depth data included. Inter-view distance of Champagne Tower2 is 2.5cm. Inter-view distance of Champagne Tower is 5cm. Champagne Tower2 provides smoother motion parallax for the subjective test than Champagne Tower.

Table 1. Available dense 1D test sequences without the depth data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Source | Seq. Name | Numberof Views | Resolution(pel) | Frame rate(fps) | Length | Cam Arrangement(1D parallel, 1D arc,) | conditionto use(if any) | URL of sequence(ID, PW) |
| 1 | Nagoya UniversityModified by NICT | Champagne Tower2 | 80 | 1280 x 960 | 29.4114 | 10 sec300 frames | linear1D parallel | See M15378, M38977 and provider webpage | <http://www.fujii.nuee.nagoya-u.ac.jp/NICT/Champ2.htm>no password required |
| 2 | Nagoya University | Champagne Tower | 80 | 1280 x 960 | 29.4114 | 10 sec300 frames | linear1D parallel | See M15378 and provider webpage | <http://fujii.nuee.nagoya-u.ac.jp/multiview-data/>no password required |
| 3 | Nagoya University | Pantomime | 80 | 1280 x 960 | 29.4114 | 10 sec300 frames | linear1D parallel  | See M15378and provider webpage | <http://fujii.nuee.nagoya-u.ac.jp/multiview-data/>no password required |
| 4 | Holografika | Big Buck Bunny flowers, Arc | 91 | 1280x768 | 24 | 5 sec121 frames | 45 degree arc convergent | See M36500  | http://mpeg3dvideo.holografika.com/BigBuckBunny\_Flowers/Arc/Login: mpegftvPassword: lf3dvideo |
| 5 | Holografika | Big Buck Bunny butterfly, Arc | 91 | 1280x768 | 24 | 5 sec120 frames | 45 degree arc convergent  | See M36500  | http://mpeg3dvideo.holografika.com/BigBuckBunny\_Butterfly/Arc/Login: mpegftvPassword: lf3dvideo |

## Sparse 1D with depth

Table 2 lists available sparse 1D test sequences with the depth data included.

Table 2. Available sparse test sequences with the depth data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Source | Seq. Name | Numberof Views | Resolution(pel) | Frame rate(fps) | Length | Camera Arrangement | Depth Data Available | URL of sequence(ID, PW) |
| 1 | U Hasselt | Soccer-Linear 2 | 8 | 1392x1136 | 60 | 10 sec600 frames | 1D parallel | Yes | ftp://mpegvideo@wg11.sc29.org:2121/FTV\_AhG\_CfE/Login: mpegvideoPassword: zuAx9Hg\_#7kRq2K |
| 2 | Poznan University of Technology | Poznan Blocks2 | 10 | 1920x1080 | 25 | 10 sec250 frames | 100 deg. Arc around the scene | Yes | ftp://ftv@multimedia.edu.pl/PoznanBlocks2/Login: ftvPassword: ftvftv  |
| 3 | Poznan University of Technology | Poznan Fencing2 | 10 | 1920x1080 | 25 | 10 sec250 frames | 100 deg. Arc around the scene | Yes | ftp://ftv@multimedia.edu.pl/PoznanFencing2/Login: ftvPassword: ftvftv  |
| 4 | Holografika | Big Buck BunnyFlowersnoBlur | 91 | 1280x768 | 24 | 5 sec121 frames | 45 deg, arc | Yes, ground truth depth | <http://mpeg3dvideo.holografika.com/BigBuckBunny_Flowers_noblur/Arc/>Login: mpegftvPassword: lf3dvideo |
| 5 | Nagoya University | Soccer Arc | 12 | 1920x1080 | 30 | 10 sec300 frames | 180 deg. Arc  | No | <http://fujii.nuee.nagoya-u.ac.jp/multiview-data/>Login: FNPasspword: cHt\_SG#z4g%7ky |
| 6 | Nagoya University | Soccer Goal Side | 10 | 1920x1080 | 30 | 10 sec300 frames | Arc | No | <http://fujii.nuee.nagoya-u.ac.jp/multiview-data/>No ID/Password required. |
| 7 | Nagoya University | Soccer Goal Side | 10 | 1920x1080 | 30 | 10 sec300 frames | Linear | No | <http://fujii.nuee.nagoya-u.ac.jp/multiview-data/>No ID/Password required. |

## Full parallax

Table 3 lists available test sequence with full parallax

Table 3. Available test sequences with the full parallax.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Source | Seq. Name | Numberof Views | Resolution(pel) | Frame rate(fps) | Length | Camera Arrangement | Depth Data Available | URL of sequence(ID, PW) |
| 1 | Ostendo | Burger delivered at Light-Field Speed | 1280x720(number of lens) | 40x40(pel/lens)RGBA x8bit | 30 | 300 frames | 2D parallel | Yes32bit float | <http://157.159.160.118/m1st> Username: sc29wg111st Password : MPEG password2nd Username: mpegcontent2nd Password: gEpM93#\_k0sanEE3!Location: /mpegcontent/content/Explorations/FTV /Ostendo2DSMV\_Movie |
| 2 | Technicolorm40010 | TechnicolorPainter | 4 x 4 | 2048x1088 | 30 | 360 frames | 2D parallel70mm spacing | No | <http://157.159.160.118/mpegcontent>Username: sc29wg111st Password : MPEG password2nd Username: mpegcontent2nd Password: gEpM93#\_k0sanEE3!Location: /mpegcontent/content/MPEG-I/Visual\_Test\_Data/Technicolor/TechniColorPainter |
|  | Fraunhofer IISm39896 | Bar | 5x3 |  |  | 200 | 2D parallel120mm x 75mm | No | TBD |
|  | Table Soccer | 5x3 |  |  | 281 | 2D parallel120mm x 75mm | No |
|  | Chess Players | 5x3 |  |  | 250 | 2D parallel120mm x 75mm | No |
|  | News Speaker | 4x4 |  |  | 150 |  | No |
|  | Beergarden | 3x3 |  |  | 398 |  | No |
| 3 | Lytrom40012 | TBD | TBD | TBD | 120 | 1200 frame | TBD | Yes | TBD |
| 2 | Université Libre de Bruxellesm39847 | TBD | TDB | Nikon D5200 RGB, 6000x4000 pixelsKinect2 RGB, 1920x1080  |  | Still image | 2D parallel1cm spacing | YesKinect2 Depth sensing, 512x424 pixelsSoftKinetic DS326 Depth sensing, 320x240 pixelsUNI-T UT 390B Laser ranger, 1 point with +- 1mm depth accuracy per position | TBD |
| 3 | Fraunhofer IISm39896 | TableTop I | 101 x 21 | 7952 x 53043976x2652 ?? |  | Still image | 2D parallel4mm by 6mm spacing | No | TBD |
| 4 | Table in the garden |
| 5 | Books and charts |
| 6 | Plants |
| 7 | TableTop II |
| 8 | Lego City |
| 9 | TableTop III |
| 10 | Lightfield production |
| 11 | Workshop |
| 12 | Poznan University of Technoogym36566 | Poznan Laboratory 1 | 31×31 |  |  | Still Image | 2D parallel10mm spacing | No | ftp://multimedia.edu.pl/ftvUser credential will be provided upon request |
| 13 | Poznan Laboratory 1 | 20×20 |  |  |
| 14 | Poznan Cones 1 | 30×30 |  |  |
| 15 | Poznan Cones 2 | 30×24 |  |  |
| 16 | Poznan Bicycles 1 | 35×30 |  |  |
| 17 | Poznan Bicycles 2 | 35×32 |  |  |
| 18 | OTOY | Charlie Lab |  | 1600 x 1600RGB HDR |  | Still Image | 2D parallel10mm spacing | No |  |

## 360 convergent multicamera

Table 4 lists available 360 convergent test sequence.

Table 4. Available 360 convergent test sequences

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Source | Seq. Name | Numberof Views | Resolution(pel) | Frame rate(fps) | Length | Camera Arrangement | Depth Data Available | URL of sequence(ID, PW) |
| 1 | OTOY | OTOY Office | 72 x 24 views | 4096 x 4096 RGBA 16-bit |  | Still Image | Spherical 5 cm x 5 cm spacing, 5 degrees apart | No | TBD |
| 2 | Skylar | TBD |  |  | 360 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

## 360 divergent multicamera

Table 3 lists available test sequences for 360 degree 3D VR scenario.

Table 3. Recommended test sequence for 360deg. 3D VR scenario.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | No. | Provider's Name | Seq. Name | Numberof Views | Resolution(pel) | Frame rate(fps) | Length | Cam ArrangementOr format | Ground Truth Depth Available | Depth Data Avaiable | Contents | URL of sequence(ID, PW) |
| Multi-view videos | 1 | ETRI | Dancing360 | 10 | 2032x2704 | 30 | 10 sec300 frames | Divergent | No | No | Natural 3D scene for dancing performance | [http://157.159.160.118/mpegcontent/](http://157.159.160.118/mpegcontent/ws-mpegcontent/content/Explorations/360VR) Access: MPEG meeting ID, pass wordMove to: ws-mpegcontent/content/Explorations/360VR,Login: mpegcontentPassword: gEpM93#\_k0sanEE3! |
| 2 | ETRI | Driving360 | 10 | 2032x2704 | 30 | 10 sec300 frames | Divergent | No | No | Natural 3D scene for driving |
| 3 | ETRI | Soccer360 | 10 | 1440x1920 | 60 | 10 sec600 frames | Divergent | No | No | Natural 3D scene for soccer game |
| Stitched videos | 4 | ETRI | Stitched\_Dacing | 2 | 4096x2048 | 30 | 10 sec300 frames | Equirectangular | No | No | Natural 3D scene |
| 5 | ETRI | Stiched\_Driving | 2 | 4096x2048 | 30 | 10 sec300 frames | Equirectangular | No | No | Natural 3D scene |

Contact:

Takanori Senoh by t.senoh@nict.go.jp

Arianne Hinds by a.hinds@cablelabs.com