Source	**Poznań University of Technology, Chair of Multimedia Telecommunications and Microelectronics**
Status	**Contribution**
Title	**Poznań Multiview Video Test Sequences and Camera Parameters**
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1   Introduction

This contribution is in response to call for contributions on 3DV test material in MPEG2008/N9468 and presents a variety of test data suitable for coding experiments, produced by Poznań University of Technology. The test materials are provided to MPEG and the scientific community in general for research and standard development purposes. Of course, some words of acknowledgement are appreciated if the materials are to be used in publications. Any commercial use is prohibited unless an explicit permission is given by Poznań University of Technology, Chair of Multimedia Telecommunications and Microelectronics.

The multi-view sequences will be available at *ftp://ftp.multimedia.edu.pl/3DV* FTP server. User credentials will be announced over mail-reflector.
The normalized views will be available until November 15th 2009.
The registered views will be available until December 1st 2009.

2   Specification of Multiview Capturing System

Our multi-view sequences are recorded by 9-view camera rig (Fig. 1) and capturing system (Fig. 2). We use cinematic Canon XH-G1 cameras, synchronized in time with use of gunlock input, which provide HDTV signal via SDI interface. The SDI streams are captured by raid-like PC cluster. The specifications of Canon XH-G1 camera are as follows:

- 3-chip 1/3" CCD sensors
- progressive scan RGB camera
- HDTV resolution (1920 x 1080); 4:3 aspect ratio, squared pixels
- 25 frames / second
- Frame and shutter synchronization by TTL trigger
- Parameter control via LANC interface
- Frame timestamp output
- SDI signal output
- Dimensions (WxHxL) 163 x 189 x 350 mm

Figure 1. Multiview camera rig.

All cameras are arranged equidistantly along a straight line with parallel optical axes. The inter-axial distance between neighboring cameras is approximately **13.75 cm** and the distance between optical centers of outer cameras is **110.0 cm**.

As capture system we use 5 PCs, equipped with DeckLink HD Pro cards (Blackmagic-design), which allow capture of 2 SDI input streams per PC (Figure 2). The raw data streams are recorded on SSD hard drives (one for each incoming video stream).
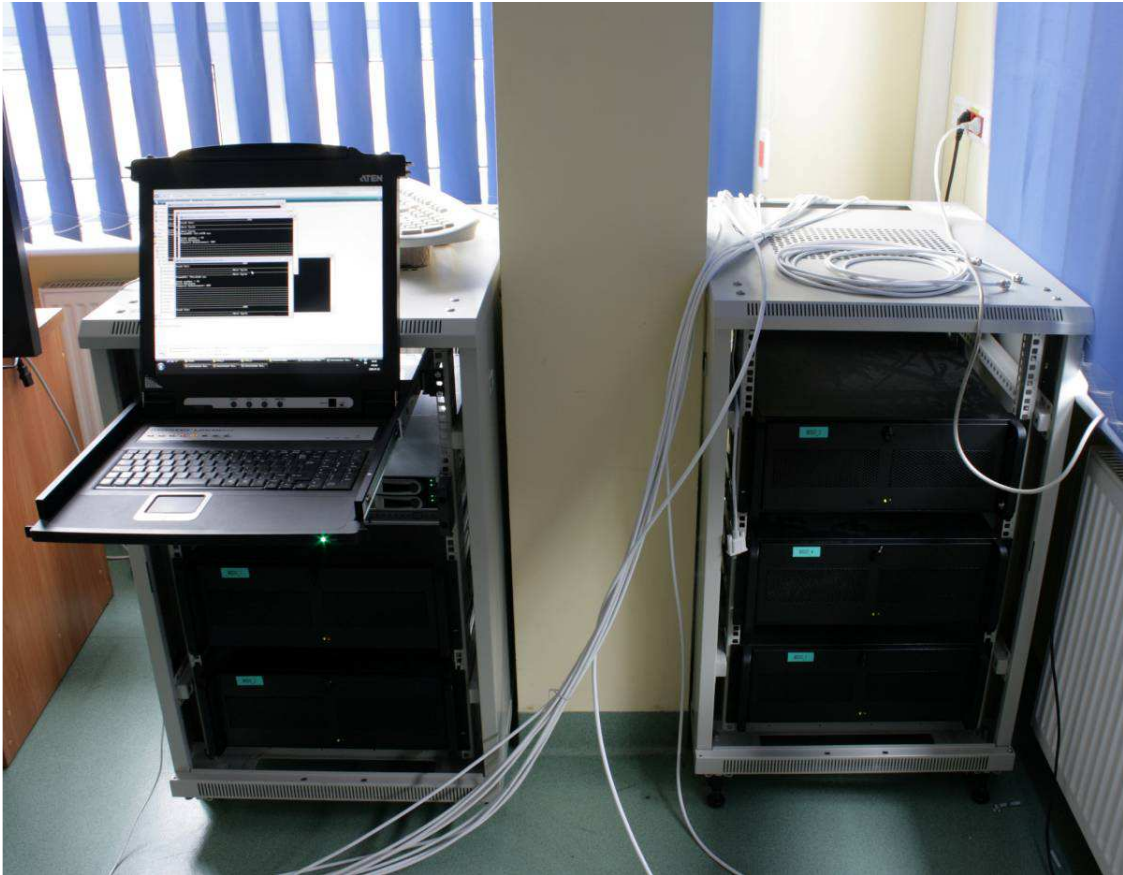
Figure 2. Recording system.

3   Post-Processing of Captured Data

To allow rectification of multiview, calibration screen with checkerboard was captured before each acquisition session. Intrisinc and extrisinc parameters of the system were calculated – these will be available with video sequences on FTP site.

4   Delivery of Test Sequences

Three test sequences has been captured and will be available on the PUT server:

- poznan_hall - Poznan University of Technology Hall
  450 frames, indoor, moving camera
- poznan_carpark - Poznan University of Technology Car Park
  600 frames, outdoor
- poznan_street – Polanka Steet near Poznan University of Technology University
  600 frames, outdoor

Each of test sequences will be delivered in two versions:
- normalized version – calibrated and color corrected
- registered version – rectified and mapped to an idealized parallel set-up with one common baseline

Camera parameters from calibration data for the different sequences and version, respectively, are given in Appendix A.

	Frame #0	Frame #200	Frame #300	Frame #500
Cam0				
Cam2				
Cam4				
Cam6				
Cam8				

Figure 3. Some frames of 'poznan_hall' sequence.

	Frame #0	Frame #300	Frame #400
Cam0			
Cam2			
Cam4			
Cam6			
Cam8			

Figure 4. Some frames of 'poznan_carpark' sequence.

	Frame #0	Frame #120	Frame #200	Frame #260
Cam0				
Cam2				
Cam4				
Cam6				
Cam8				

Figure 5. Some frames of 'poznan_street' sequence.

4   References

[1] "Call for Contributions on 3D Video Test Material", ISO/IEC JTC1/SC29/WG11 N9468, October 2007.

[2] "Call for Contributions on 3D Video Test Material", ISO/IEC JTC1/SC29/WG11 N9595, January 2008.

[3] "Call Call for 3D Test Material: Depth Maps & Supplementary Information", ISO/IEC JTC1/SC29/WG11 N10359, February 2009.