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Title Poznan Blocks - a multiview video test sequence and camera parameters for Free Viewpoint Television

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1 Introduction

During 106th MPEG meeting in Geneva, ad-hoc group on Free Viewpoint Television has identified a need for new video test material. This document present a test sequence provided in response to that need.

The test material is provided to MPEG (and the scientific community in general) for research and standards development purposes. Of course, some words of acknowledgement are appreciated if the material is to be used in research and are required if the material is 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 multiview sequence is available at <ftp://multimedia.edu.pl/ftv> ftp server. User credential will be provided upon request.

2 Multi-camera Acquisition System

Our sequence have been recorded by 10 Full-HD cameras placed on an arc around the scene. The cameras have been mounted on special mobile camera units (fig 1) developed at Poznań University of Technology. Each mobile camera unit is equipped with:

- high resolution digital camera (Canon XH-G1),
- power supply (battery),
- wireless synchronization receiver (fig 2),
- remote control receiver,
- HDD recorder (Seagate Momentus 500GB).

All cameras are precisely synchronised with use of wireless signal, broadcasted at dedicated 869MHz link. Each captured frame is signed with time-code for error resilience. This also allows for miss-synchronization detection.

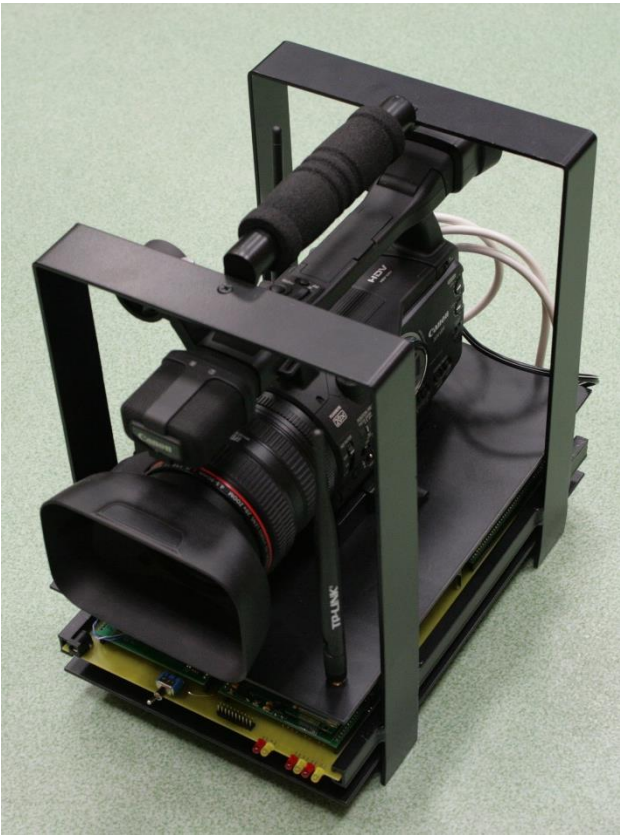


Figure 1. Camera unit.



Figure 2. Wireless synchronization module.



Figure 3. Multi-camera system used in production of the presented test sequence.

3 Sequence Specification

Resolution:	1920x1080 - Full HD
Frame rate:	25 frames per second
Number of views:	10
Camera arrangement:	about 100 degree of the circle around the scene
Length:	1000 frames (40 seconds)
Description:	Two persons play with bricks on a table

The post-processing applied to the sequence is as follows:

1. Lens radial distortion has been removed.
2. All views have been color corrected.
3. Additionally, a version of the sequence with algorithmically reduced noise is provided.

Distortion and color corrected sequence is recommended as a base version for experimentation. Noise-reduced version is recommended for depth estimation only.

Camera parameters are provided along with the sequence.



Figure 4. Exemplary frame from Poznan Blocks sequence.

4 Acknowledgement

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