



M17613 - Results of 3DV/FTV Exploration Experiment 1.

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Input and output views for MVD representation (2-view)

- The depths have been estimated basing on guidelines in W11095

| Data set | Original Pair OL-OR | Synthesized Pair SL-OR (OL-SR) | Frame Range for EE1 |
|----------------|------------------------|-----------------------------------|---|
| Poznan_Hall1 | 1-2 | 1.5-2 | 0~199 (0~199 from original <i>Poznan_Hall</i>) |
| Poznan_Hall2 | 6-7 | 6.5-7 | 0~199 (350~549 from original <i>Poznan_Hall</i>) |
| Poznan_Street | 3-4 | 3.5-4 | 150 ~349 |
| Poznan_Carpark | 3-4 | 3.5-4 | 200~399 |



Input and output views for MVD representation format (3-view)

| Data set | Original Views OL-OC-OR | Views to Synthesize for stereo viewing ¹ | Views to Synthesize for 9-view display ² |
|----------------|----------------------------|--|--|
| Poznan_Hall1 | 1-2-3 | 1.875, 2.125 | 1.5, 1.625, 1.75, 1.875, 2.125, 2.25, 2.375, 2.5 |
| Poznan_Hall2 | 5-6-7 | 5.875, 6.125 | 5.5, 5.625, 5.75, 5.875, 6.125, 6.25, 6.375, 6.5 |
| Poznan_Street | 3-4-5 | 3.875, 4.125 | 3.5, 3.625, 3.75, 3.875, 4.125, 4.25, 4.375, 4.5 |
| Poznan_Carpark | 3-4-5 | 3.875, 4.125 | 3.5, 3.625, 3.75, 3.875, 4.125, 4.25, 4.375, 4.5 |



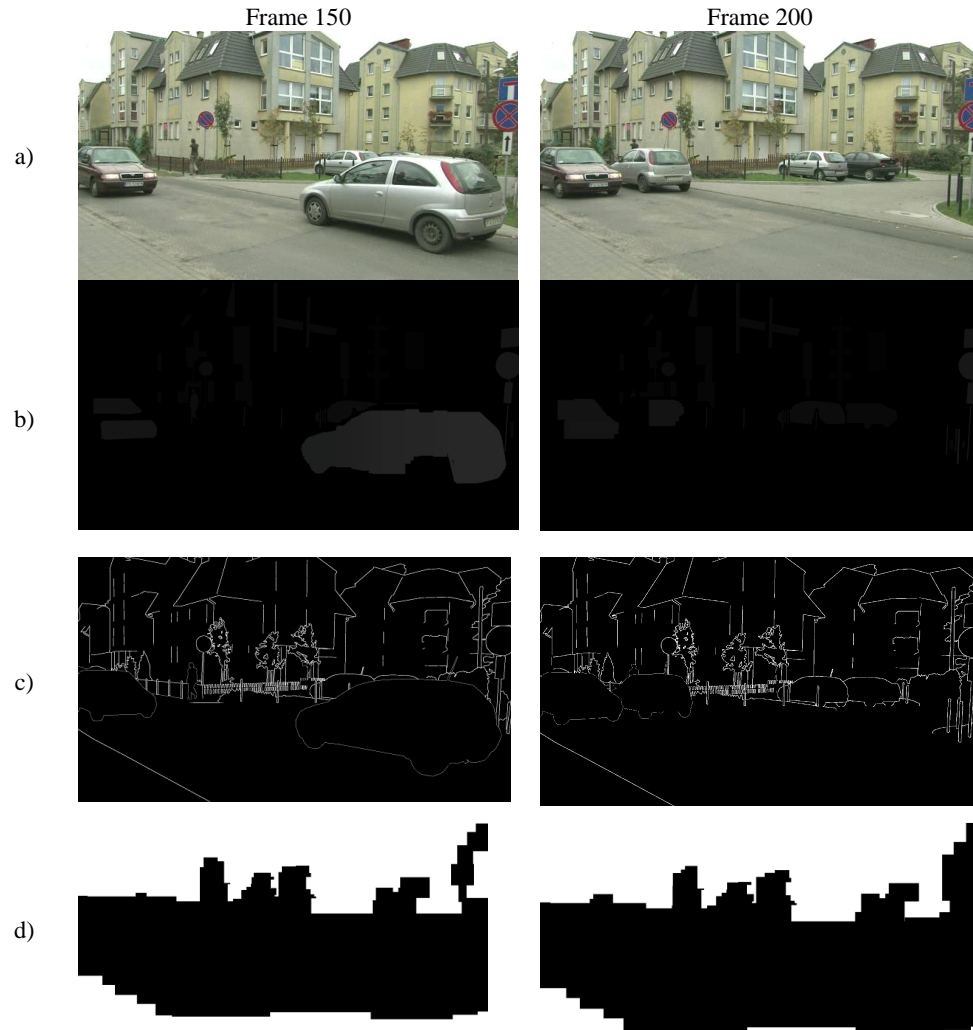
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- Various techniques have been used:
 - DERS automatic mode.
 - DERS in semi-automatic mode with manual data.
 - Depth map generated by PUTv1, PUTv3.
 - Middle level hypothesis
 - Additional use of temporal denoising tool.
 - Background depth map, generated with DERS from background images



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- Finally depth maps have been manually merged into one final depth map by copy&paste method.



Poznan_Street - manual





Poznan_Street view 3





Poznan_Street previous depth map





Poznan_Street background depth map





Poznan_Street new depth map





Poznan_Street new depth map



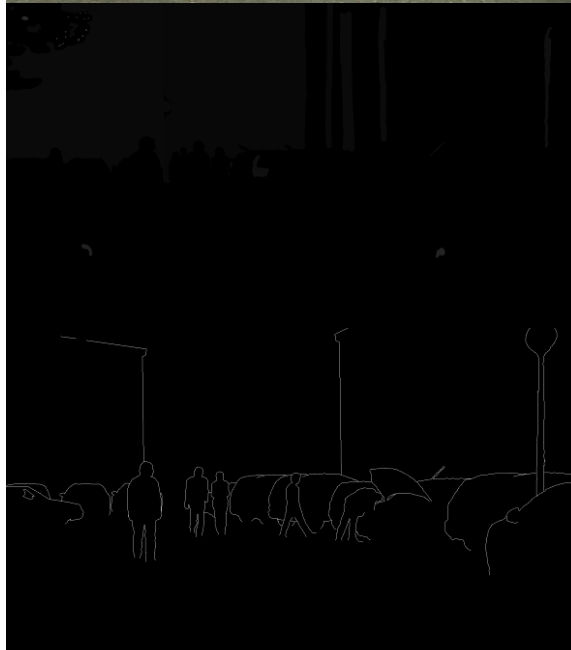


Poznan_Carpark - manual

View 3



a)



b)

c)

View 5





Poznan_Carpark – view 3



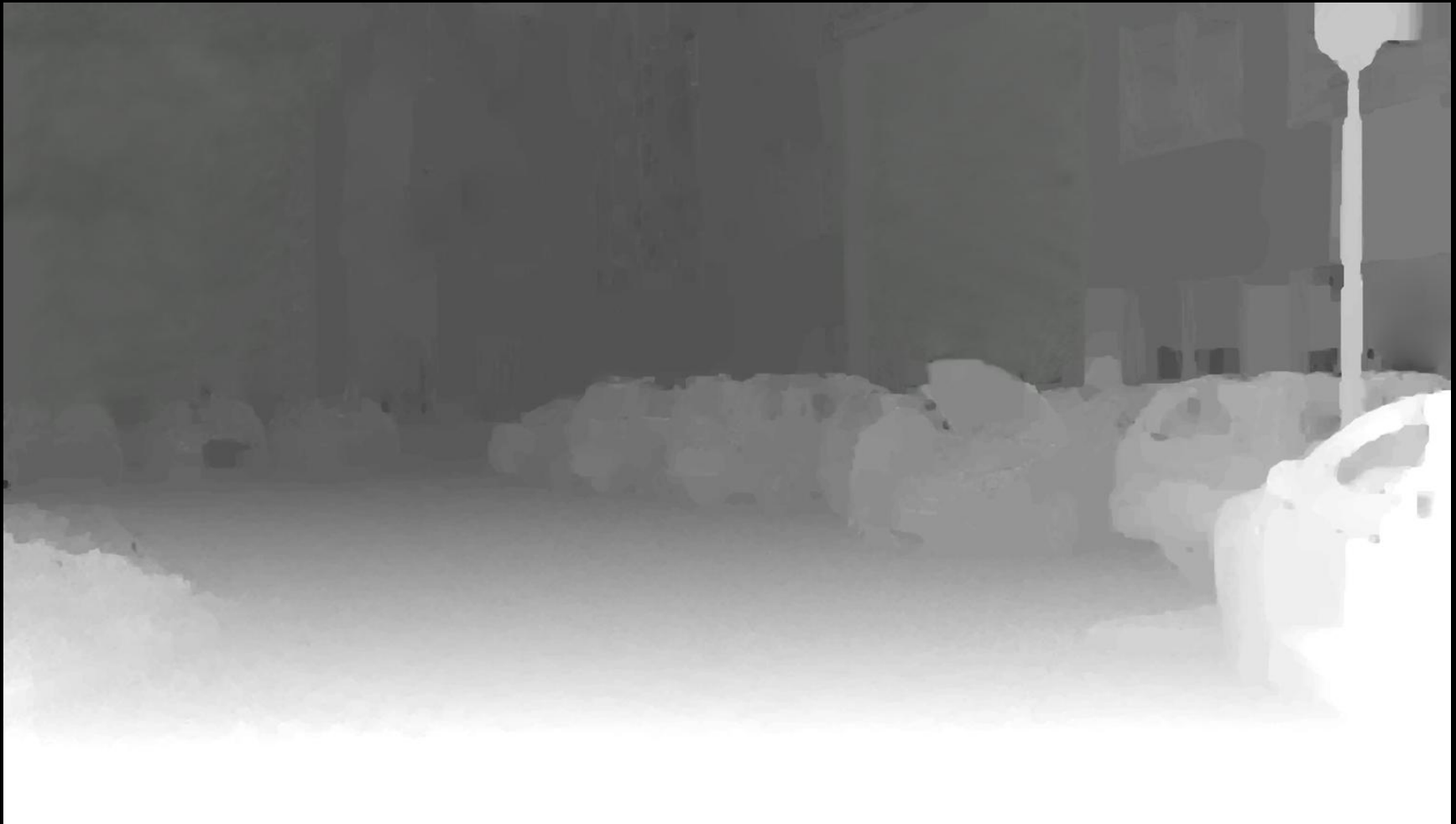


Poznan_Carpark previous depth map





Poznan_Carpark background depth map





Poznan_Carpark background depth map





Poznan_Carpark background depth map





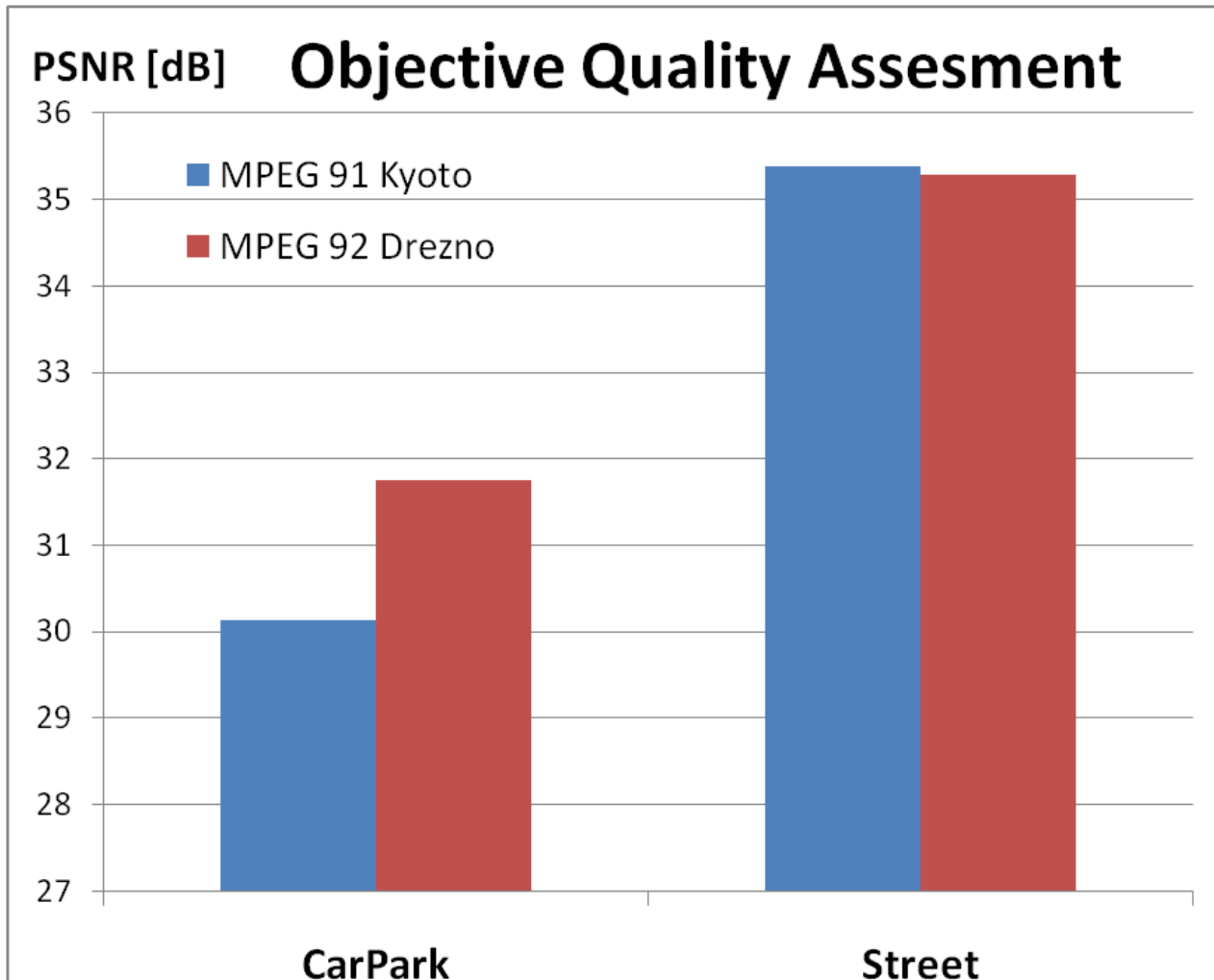
Objective evaluation

- View configuration for synthesis-based objective quality assessment.

| Data set | Original Pair | Synthesized View |
|----------------|---------------|------------------|
| Poznan_Street | 3-5 | 4 |
| Poznan_Carpark | 3-5 | 4 |



Synthesis quality





Synthesis quality

**Subjective quality
improved**



Conclusions

- Quality of the depth maps have been improved.
- New technique for estimation of depth maps have been developed.
- New depth maps are available on FTP site:
 - <ftp://multimedia.edu.pl/3DV/>