Video examples

We provide same examples of compressed videos for a direct visual comparison in the folder "Video_examples" in the *Supplementary Material*. The files and the corresponding methods/models are listed in Table 2. The subfolder "Examples" include the video examples of the proposed PLVC approach, HM 16.20 and the MS-SSIM-optimized RLVC [Yang *et al.* 2021]. The subfolder "Examples (ablation)" includes the results of the ablation models on the same video as "Examples", so the ablation results should be compared with the result of our PLVC approach in "Examples".

Table 2: The files and corresponding methods/models in video examples.

Examples	
1. Our PLVC bpp=xxx.mkv	The proposed PLVC method
2. RLVC (SSIM) bpp=xxx.mkv	The MS-SSIM-optimized RLVC method [Yang *et al.* 2021]
3. HM16.20 bpp=xxx.bin	The official HEVC test model HM 16.20
Examples (ablation)	
4. PLVC (no hˆD, no m_i) bpp=xxx.mkv	PLVC (w/o $\boldsymbol{h}_i^D$, w/o $\boldsymbol{m}_i$ in D)
5. PLVC (no GAN) bpp=xxx.mkv	PLVC (w/o GAN)

Since the *Supplementary Material* has the size limitation of 50 MB, we only show the first 100 frames of each method, and in the ablation video examples, we only show the results of the two most important models PLVC (w/o $\boldsymbol{h}_i^D$, w/o $\boldsymbol{m}_i$ in D) and PLVC (w/o GAN), which verfies the effectiveness the proposed temporal condition in the discriminator and the effectiveness of the proposed GAN-based approach, respectivel. Besides, since storing the compressed frames in PNG format significantly exceeds the size limitation, we first obtain the compressed frames of each model and then near-losslessly re-compress the frames by x265 as ".mkv" files to reduce the file size. For HM 16.20, we directly provide the bitstream (".bin" file) to save the space.

Note that, due to the near-losslessly re-compression by x265 in the ".mkv" files, **the file sizes of the ".mkv" files do not indicate the bit-rate of the proposed and compared methods. The bit-rates are directly written in the file names.** The ".mkv" files can be displayed by the VLC media player (https://www.videolan.org/index.zh.html). Note that since we store the compressed frames and then near-losslessly compress them by x265, the file sizes of the ".mkv" files do not indicate the bit-rate of the proposed and compared methods. The bit-rates are directly written in the file names. The ".bin" file of HM 16.20 can be viewed by the standard HEVC decoder, *e.g.*, HM decoder.