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**{SJTU sequences evaluation}**

JVET 2<sup>nd</sup> meeting, San Diego, February 20, 2016

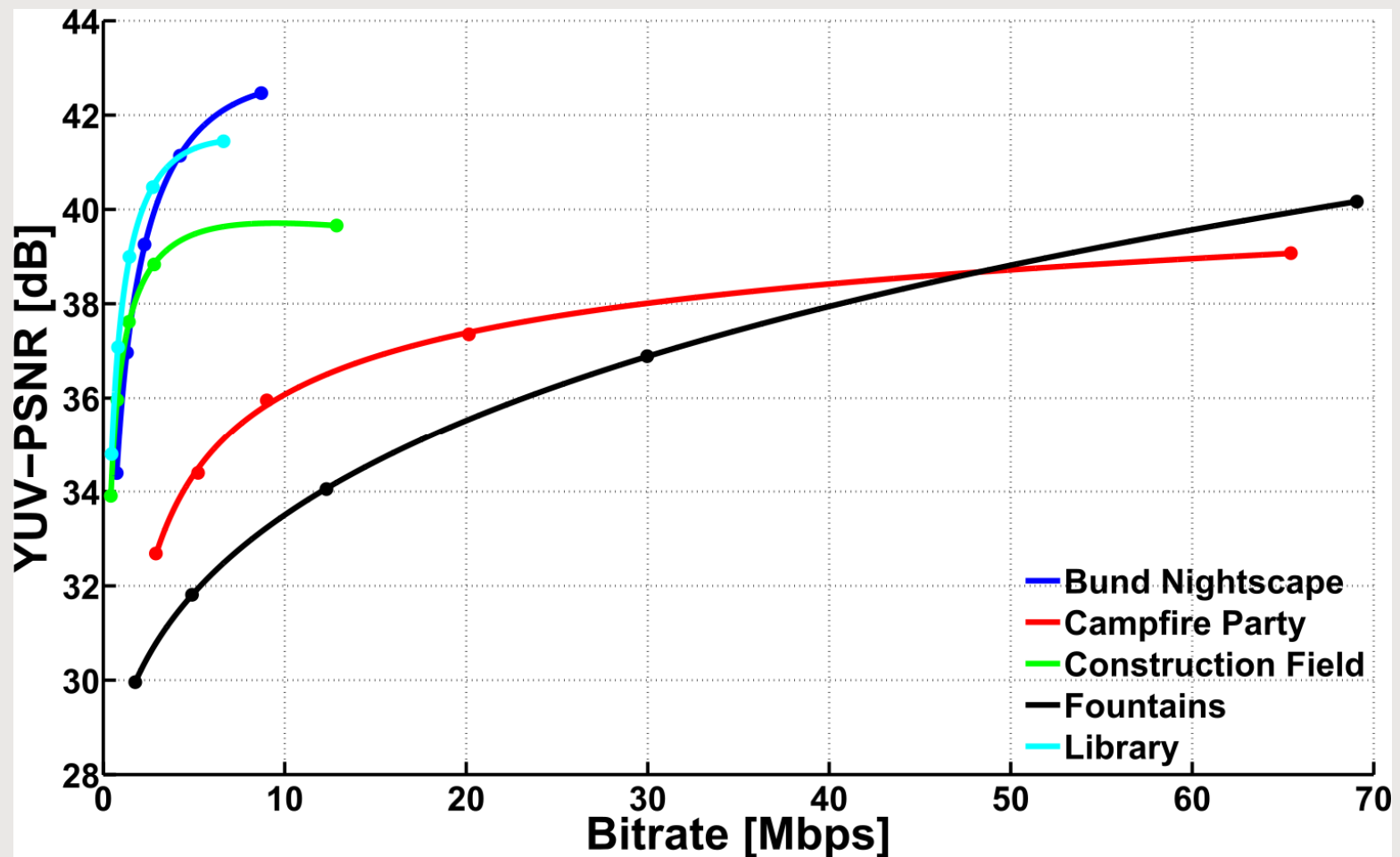
Xavier Ducloux

## › Five UltraHD (3840x2160, 30fps, BT.709, 4:4:4, 10 bits)

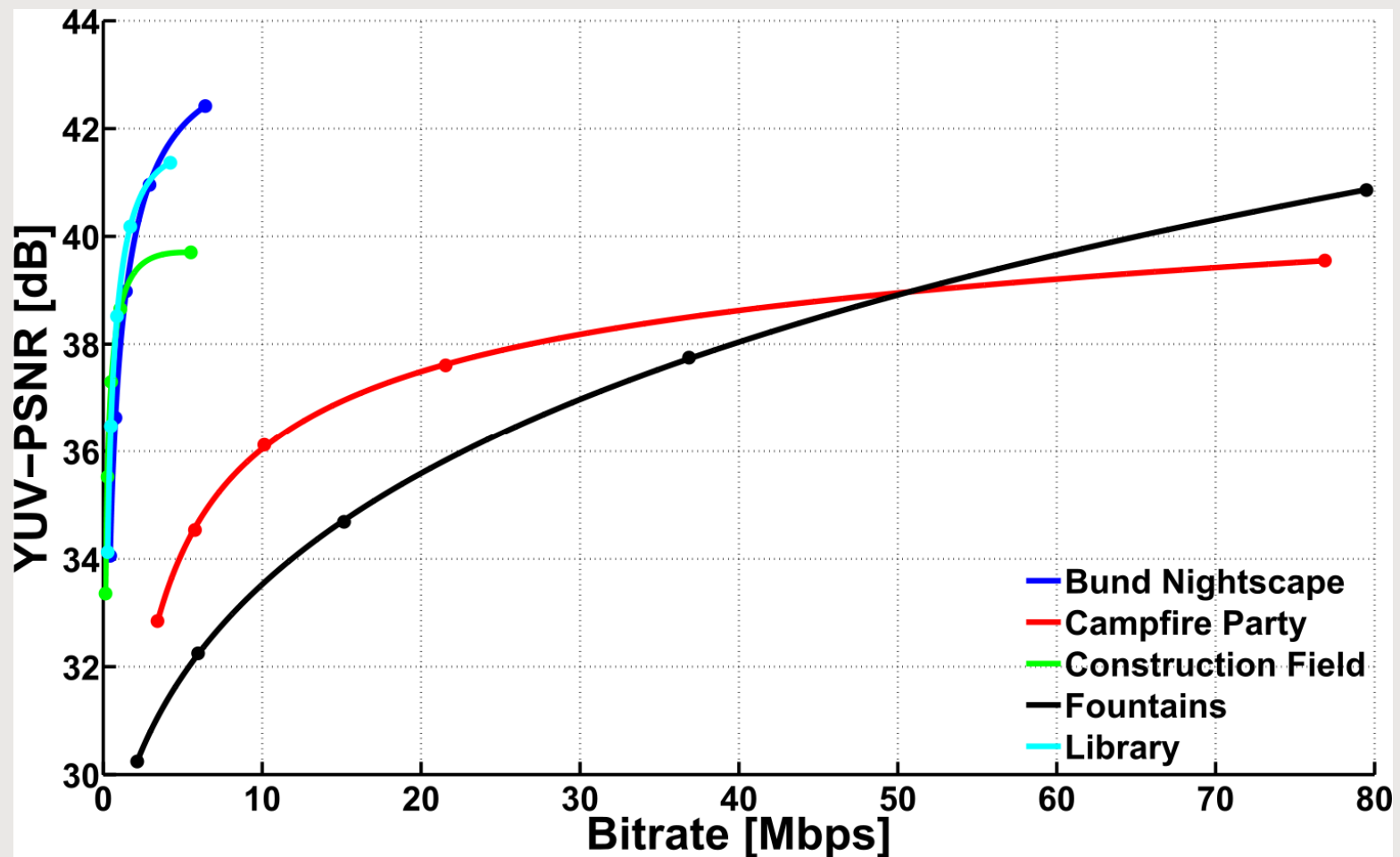
- Proposed for Future Video Coding standardization/development

Sequence	Description	Thumbnail
Bund Nightscape	The nightscape of the gallery of International Architecture in Bund	
Campfire Party	The flames before the crew of the NERC-DTV in a campfire party	
Construction Field	The excavator arms in a construction area	
Fountains	The artificial fountains jetting water into the air in front of a tall building	
Library	The sparsely moving students in the front of the new library	

HM 16.6 – QP : 22 – 27 – 32 – 37 - 42



HM 16.6 – QP : 22 – 27 – 32 – 37 - 42








## › Viewing equipment

- JVCPS-840UD 84" ProVerite 4K LCD Monitor

## › Evaluation of the original sequences

- NERC-DTV logo inserted on all the sequences
- Low frame rate acceptable, except on Library sequence (moving people)

Sequence	Description	Thumbnail	Comments
<b>Bund Nightscape</b>	Static and large shot which is played at a higher speed than reality		Clean sequence, interesting for contrast
<b>Campfire Party</b>	Static shot, except a zoom at the end. Light variation		Interesting light variation, but saturation on fire. High level of noise
<b>Construction Field</b>	Small camera motion and slight panning at the end		Interesting textures and thin elements
<b>Fountains</b>	Static shot on artificial fountains jetting water into the air in front of a tall building		Details on the foreground, but not in the background. Complex motion on water
<b>Library</b>	Slow camera panning with sparsely moving students		Loss of definition, uncomfortable low frame rate on moving people, flickering observed on the building

## › Bund Nightscape

- Very few artifacts can be noticed at QP 32
- Smoothing of vertical structures on buildings facades and on the pier can be observed from QP 37

source



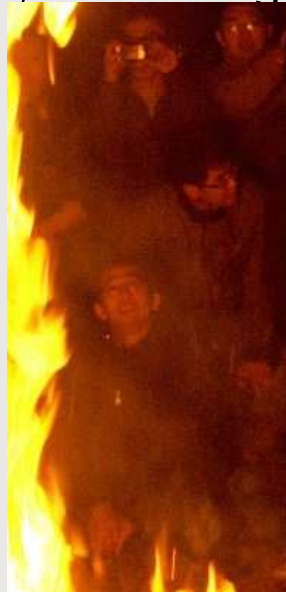
QP 37

- Ideal to promote HEVC compression performance but maybe not to show weaknesses (rather high masking of artifacts)

## › Campfire Party

- Many blocking artifacts and strong smoothing of textures are noticeable at low bitrate from QP 32 (around the flames, in the shadow areas, on the flag)

source



QP 37



- Very complex sequence, because of light variation and sensor noise on dark areas



## › Construction Field

- Textures are smoothed, thin elements disappear, edges are damaged at lower bitrates from QP 32

source



QP 37



- Ringing effect on contours can be observed from QP 37
- This sequence produces a low bitrate in HEVC but shows visual artifacts which leave place for further improvements

## › Fountains

- Many water drops disappear from QP 32

source



QP 32



- Block artifacts appear on the fountains and hazes from QP 37
- Very complex sequence to encode due to the nature of water thin structure and motion

## › Library

- Thin textures such as bricks on the building and the floor disappear at QP from 32
- Ringing artifacts can be observed on people contours at QP 42

source



QP 42



- This sequence suffers from the low frame rate of 30 fps on moving people and on the building due to the camera panning

- › We suggest to include the three sequences (in the order named) as potential test sequence candidates for future video coding standardization:
  - Construction Field
  - Campfire party
  - Fountains

# Merci / Thanks

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