HEVC in JEG-Hybrid

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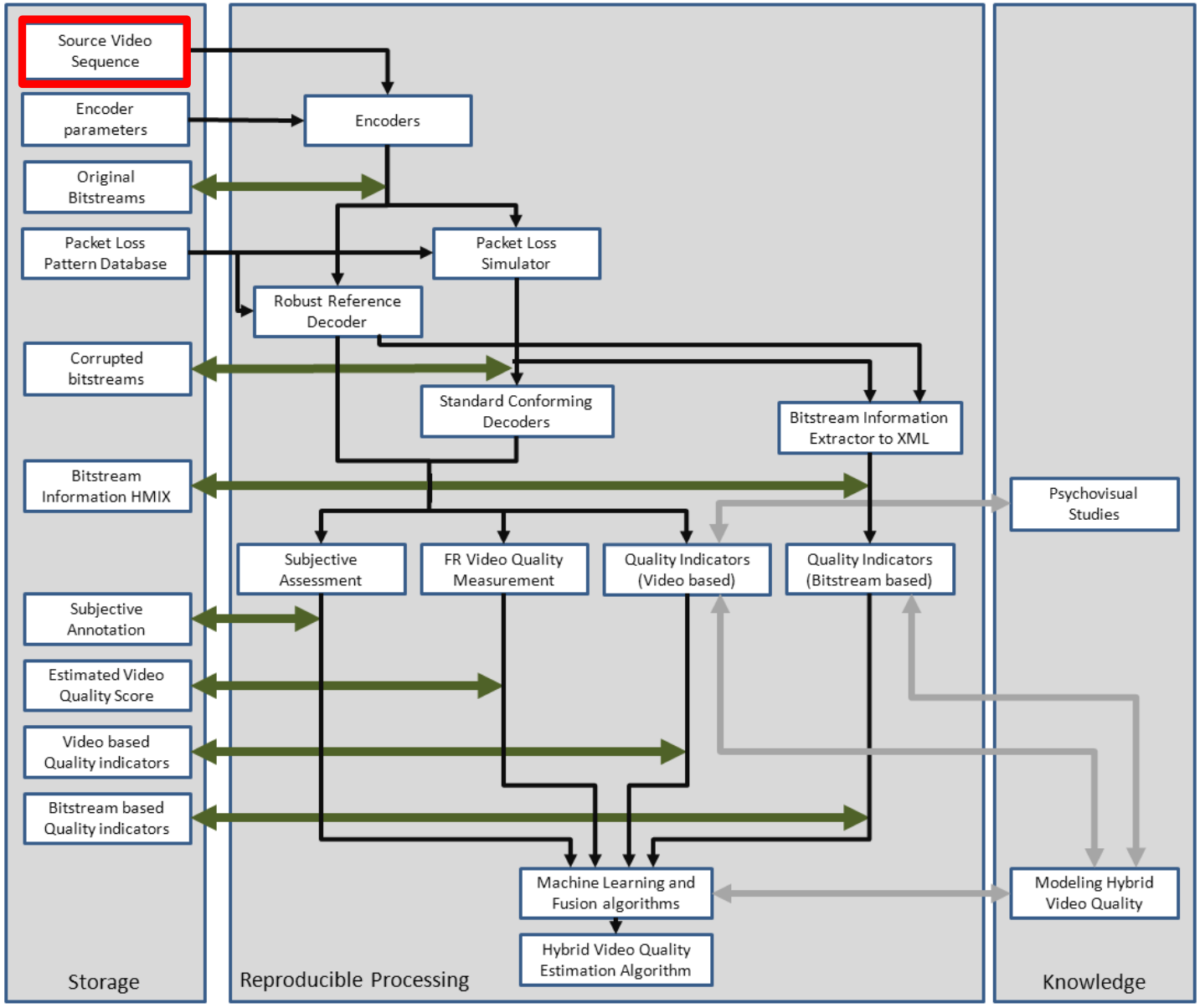
Source Video Sequence
Encoder parameters
Original Bitstreams
Packet Loss Pattern Database
Corrupted bitstreams
Bitstream Information HMIX
Subjective Annotation
Estimated Video Quality Score
Video based Quality indicators
Bitstream based Quality indicators
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Subjective Assessment
FR Video Quality Measurement
Quality Indicators (Video based)
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Psychovisual Studies
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Knowledge

SRC selection

- 10 SRC similar to the AVC experiment within JEG-Hybrid
- ftp://ftp.ivc.polytech.univ-nantes.fr/VQEG/JEG/HYBRID/hevc_database/SRC/

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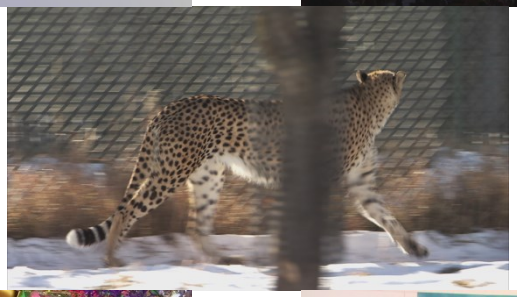
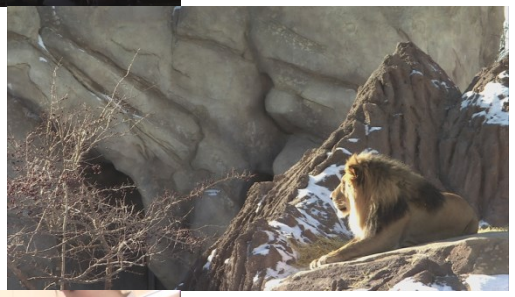

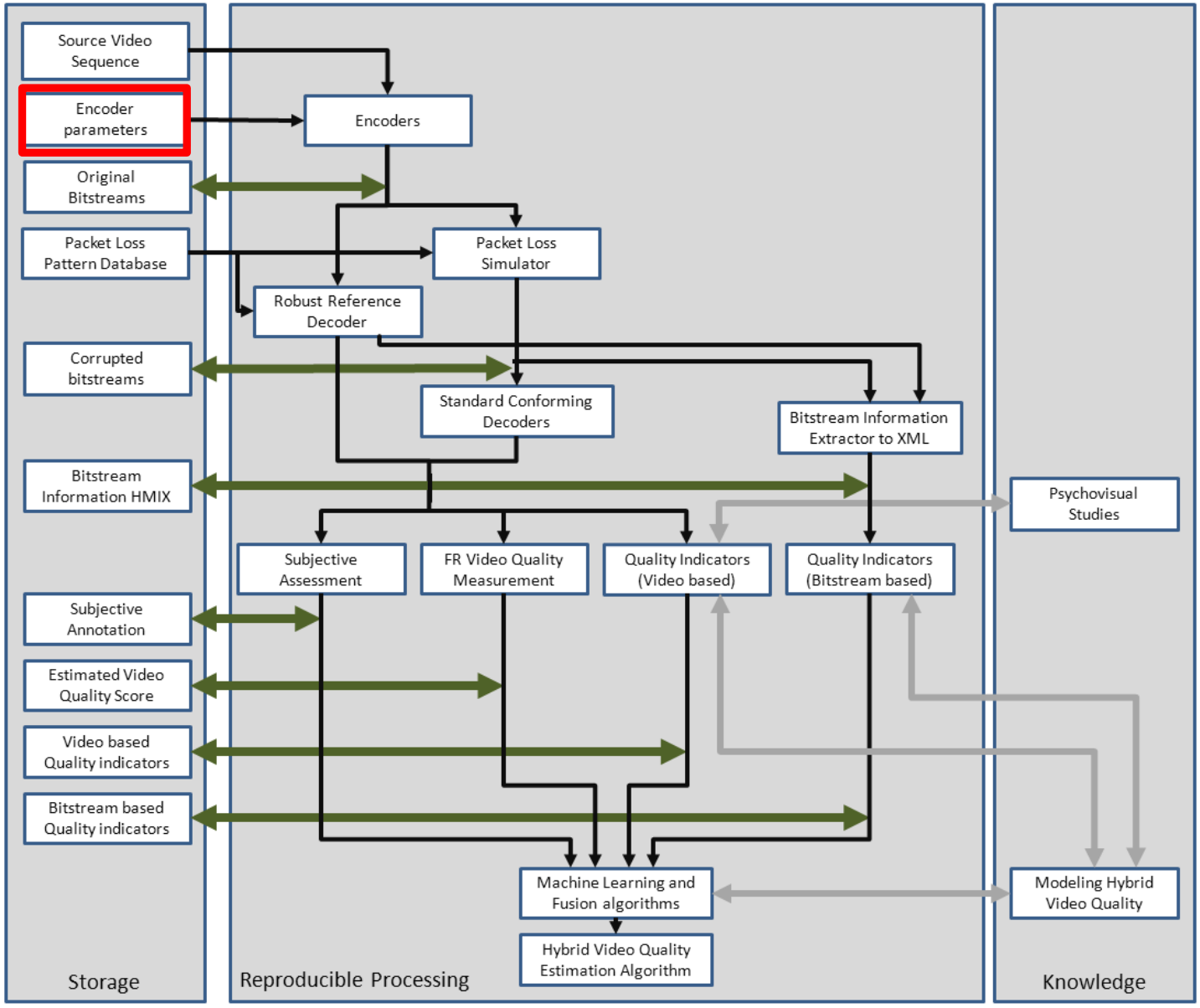
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HRC

- Encoding only
- HEVC: HM11.1

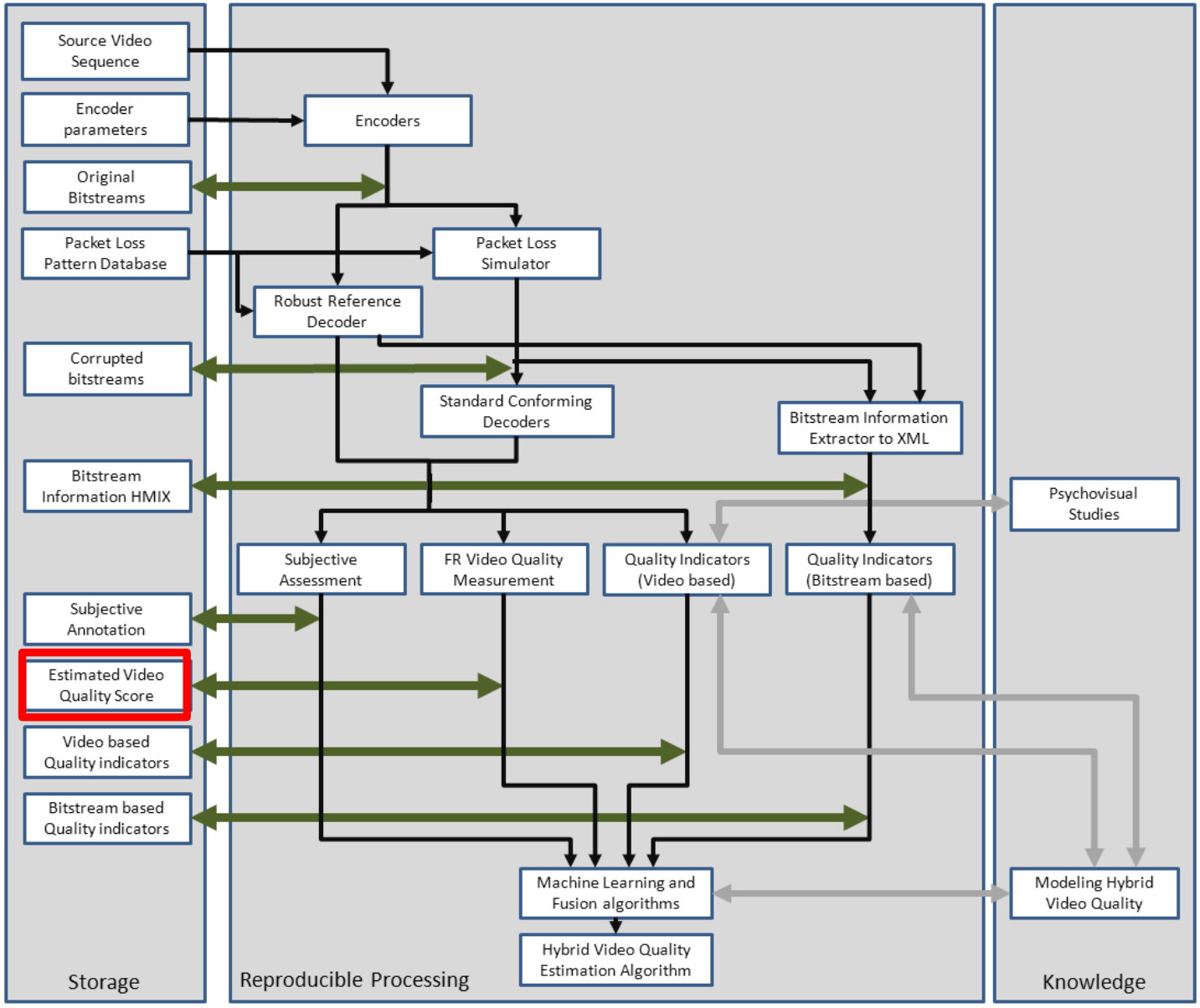
Bitrate	500kbps, 1Mbps, 2Mbps, 4Mbps, 8Mbps, 16Mbps
Rate control	Picture adaptive, CU adaptive
QP	26, 32, 38, 46
GOP	1, 2, 4, 8
Intra period	8, 16, 32, 64
Random access	IDR (closed-GOP intra), CDR (open-GOP intra)
Resolution	1920x1080, 1280x720, 960x544
Slices	0, 2, 4, 1500byte

PVS generation status

- 59520 HEVC sequences generated
- 313165 computing hours

- Corresponds to 295 GB of sequences

- ftp://ftp.ivc.polytech.univ-nantes.fr/VQEG/JEG/HYBRID/hevc_database/ENC/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Full-reference metric calculation

- Available:
  - Peak Signal-to-Noise Ratio (PSNR)
  - Structural Similarity Index (SSIM)
  - Visual Information Fidelity (VIF)
    - ftp://ftp.ivc.polytech.univ-nantes.fr/VQEG/JEG/HYBRID/hevc_database/FR/
  - Video Quality Metric (VQM)
  - Perceptual Video Quality Measure (PVQM)
    - http://media.polito.it/downloads/jeg/

CSV file format

Source, Resolution, Src, Metric, HRC, Avg
src01_1280x720p25.yuv,1280x720,src01,psnr000,GOP2_1000000_1_16_64_8_0,41.135275
src01_1280x720p25.yuv,1280x720,src01,ssim000,GOP2_1000000_1_16_64_8_0,0.978937
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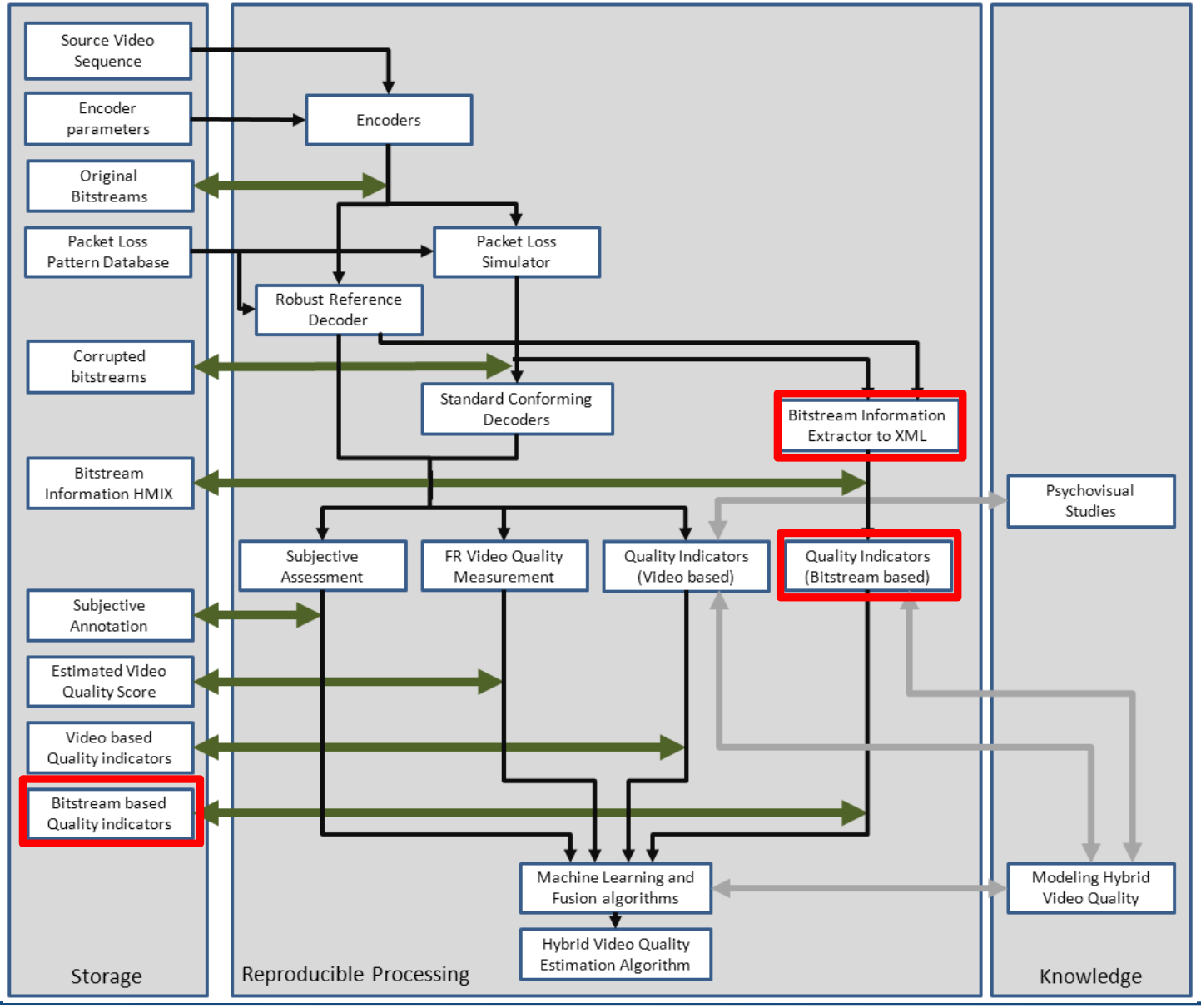
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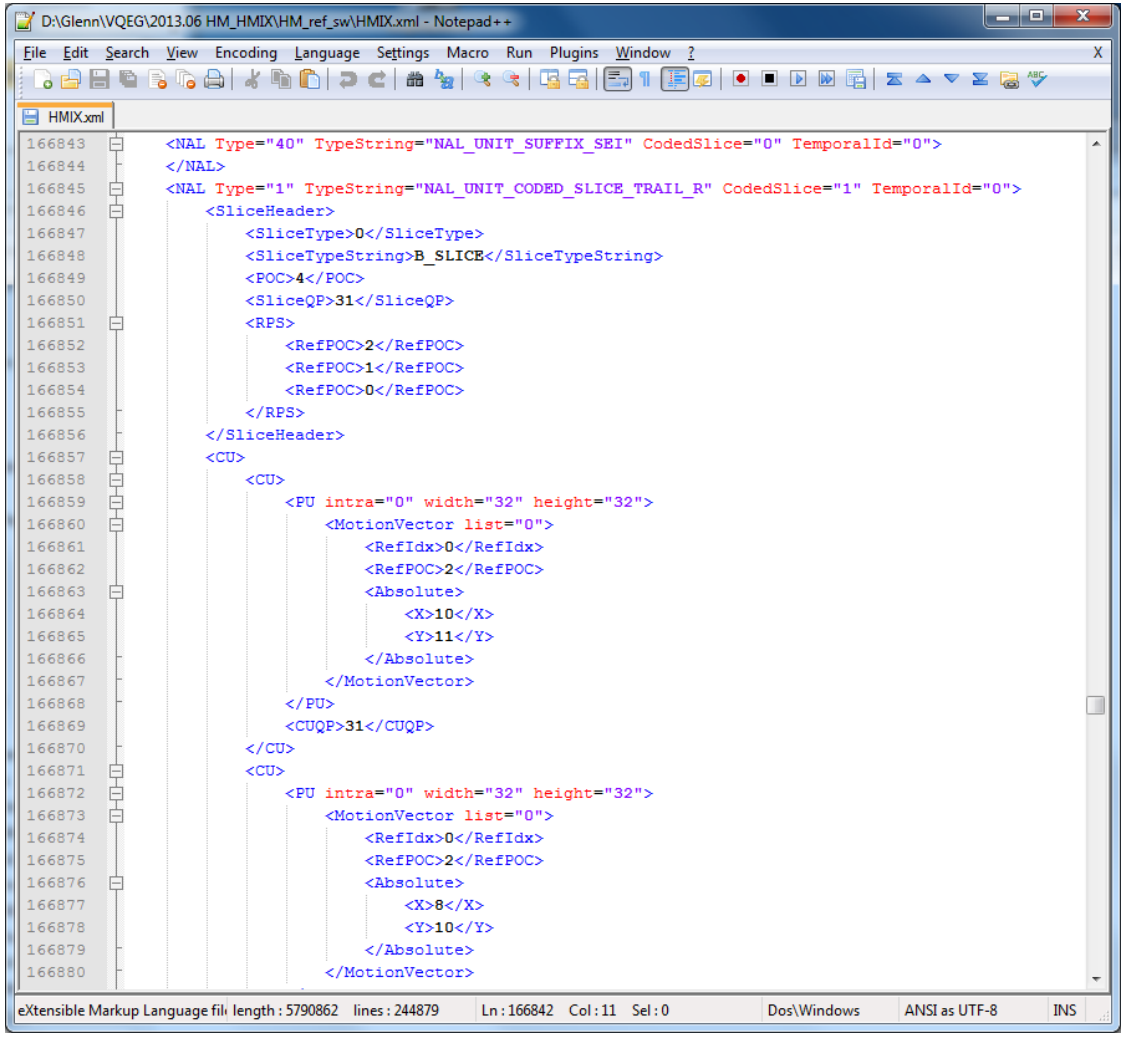
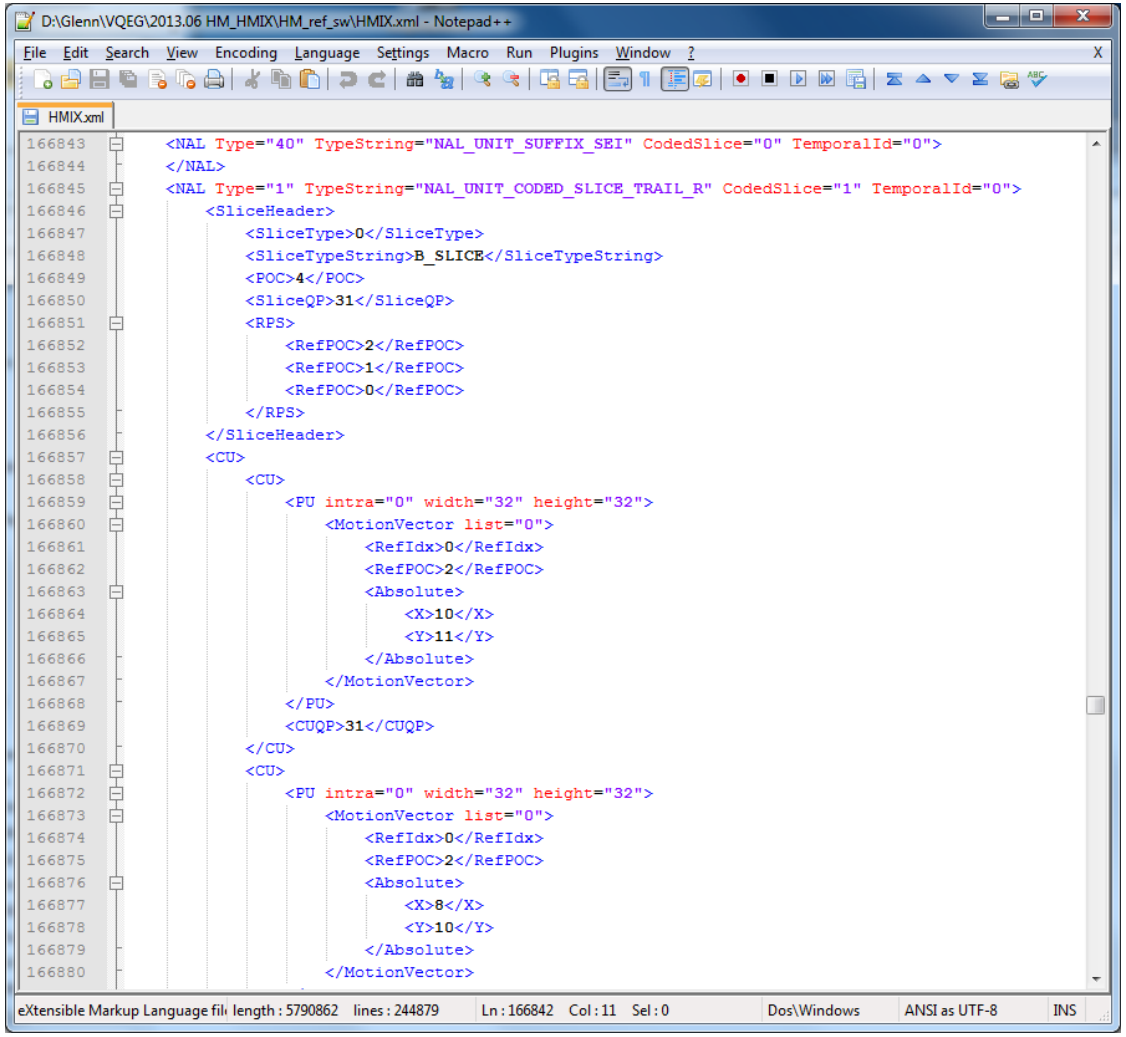
HMIX generation

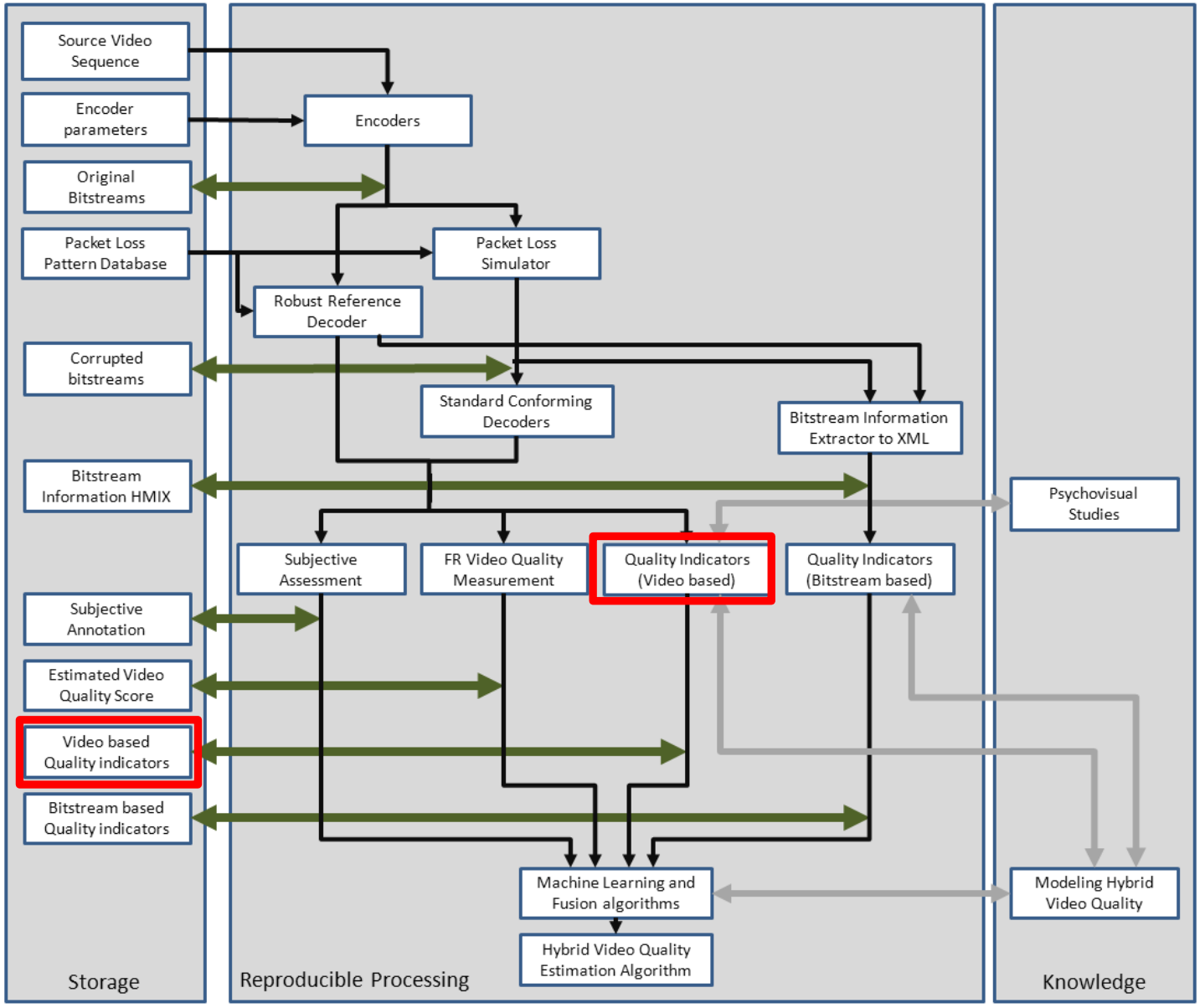
- Convert bitstream information in XML format
- HM 11.1 modified to generate HMIX file



HMIX generation

- NAL type
- SliceHeader
  - SliceType
  - POC
  - SliceQP
  - RPS: RefPOC
- CU
  - CUQP
- PU
  - MV
  - RefPOC
  - IntraDir

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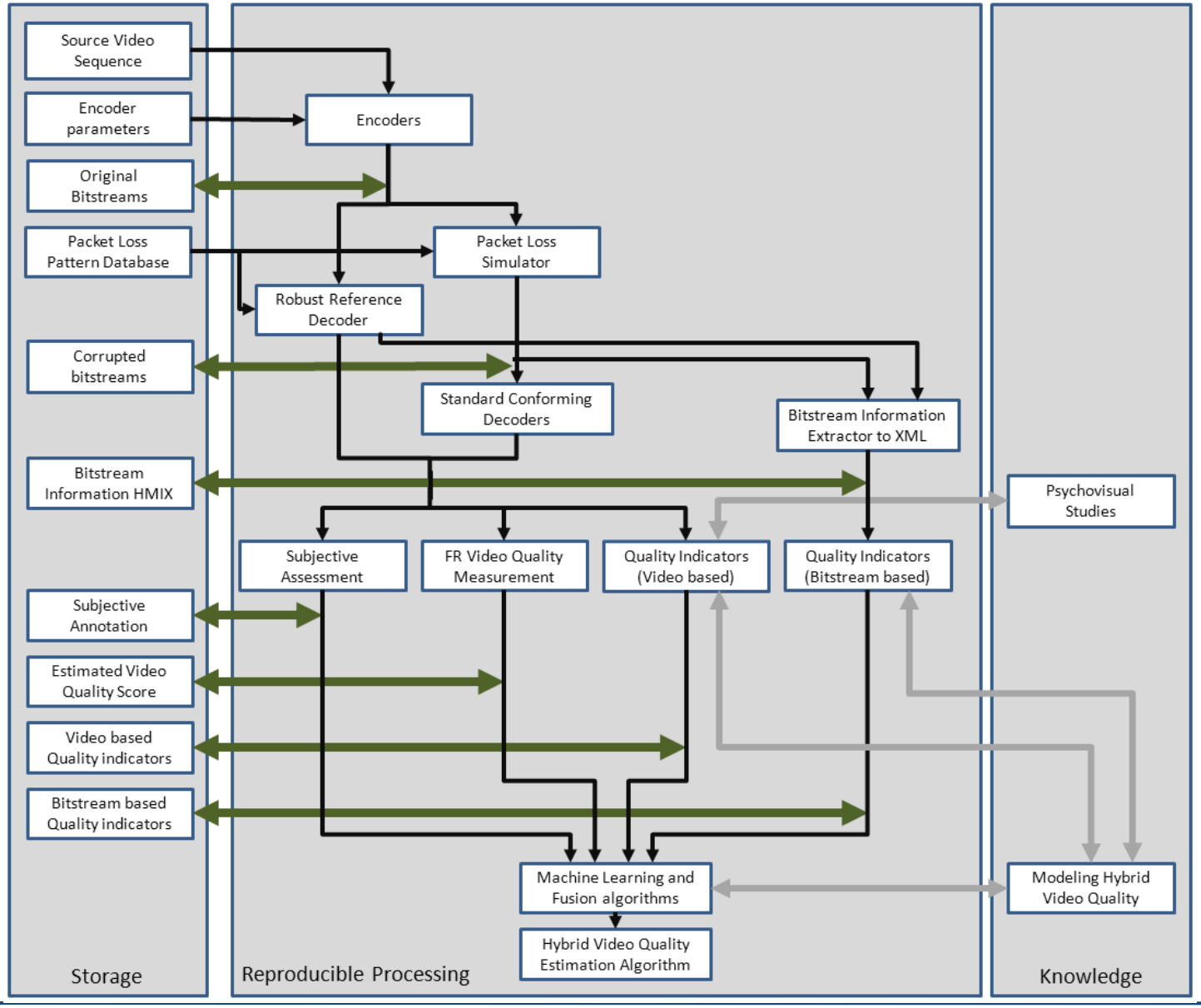
No-reference indicators

- Blockiness
- Blurriness
- Exposure
- Noisiness
- Flickering
- Spatial Activity (Intensity)
- Temporal Activity (Intensity)
- Spatial Correlation
- Energy
- Homogeneity
- Variance
- Contrast
- Colour Layout Descriptor
- Edge Histogram Descriptor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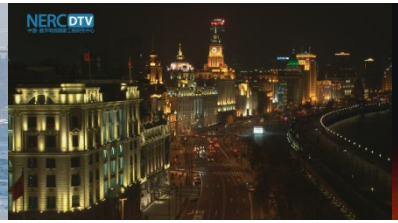
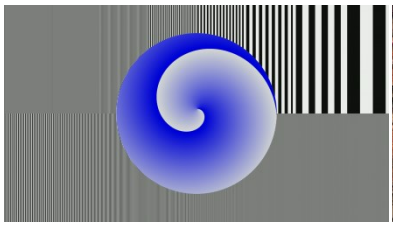
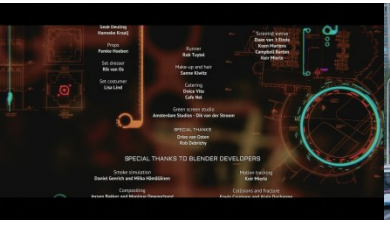
Ultra HD

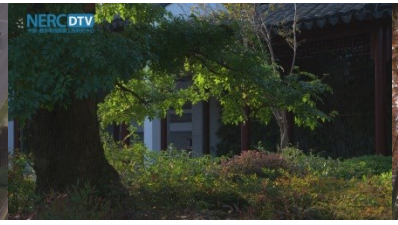
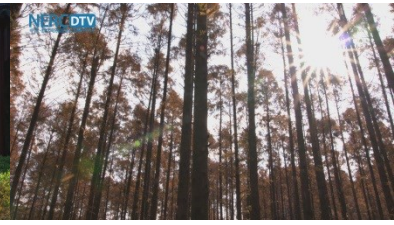
- 31 SRC sequences
- 2160p, 1080p, 720p





Türkiye Joker Kulübü


SPECIAL THANKS TO BLENDER DEVELOPERS

ftp://ftp.ivc.polytech.univ-nantes.fr/VQEG/JEG/HYBRID/hevc_database/SRC/

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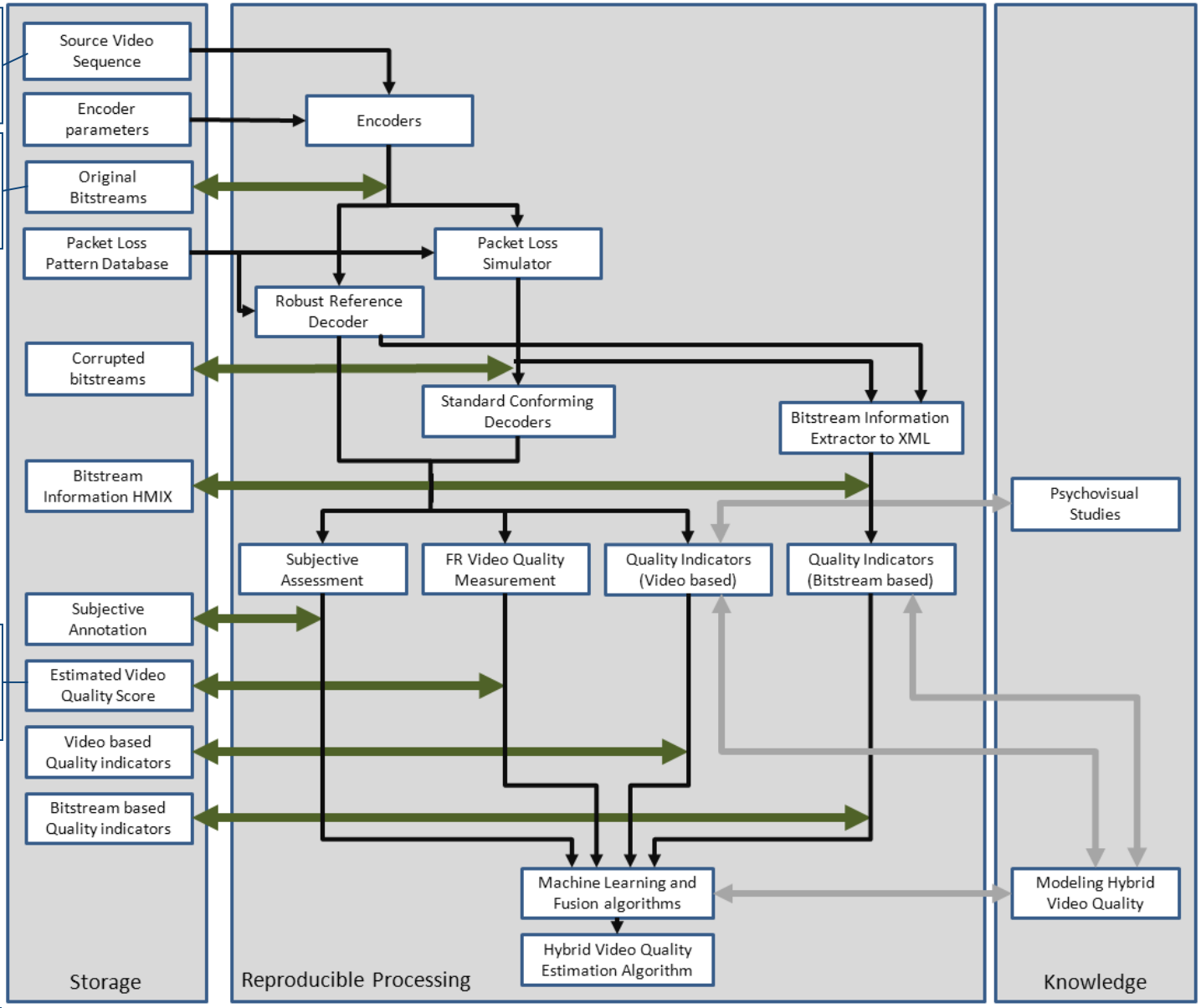
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