

## JEG-Hybrid

Joint Effort Group on the development/research of  
generally applicable hybrid video quality assessment algorithms

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# MISSION

- To develop a generally applicable no reference Hybrid Perceptual/Bit-Stream model.
- Small set of subjective experiments
  - Cause limited training
  - Cause limited validation
- How can we prove validity of a quality metric when it is only trained and validated on a small set of subjective experiments?

# STRATEGY

- What do we have? (Have a look at the state-of-the-art)
  - Existing full-reference metrics
  - Subjective tests
  
- Try to identify shortcomings
  - If there are none, use full-reference metrics as ground truth
  - If there are, what set needs to be subj. evaluated ?

# WHY A LARGE SCALE APPROACH?

- Analyzing the agreement of objective measurements with respect to various application scopes.  
When do FR-metric disagree?
- Identification of insufficient algorithmic modeling precision OR missing perceptual features.
- Reproducible verification is possible, due to fully reproducible testset and standardized performance algorithms

# WHERE TO START?

- <http://vqegjeg.intec.ugent.be/wiki/>



# WHAT WE PROVIDE

- Database with 41 SRCs, slowly being extended
- Different encodings of these SRCs using H.264/AVC and HEVC
- Indicator information from these SRCs:
  - pixel based feature calculators
  - bitstream based feature calculators

# AVAILABLE TOOLSET

- Virtual machine for QoE research including:
  - Available encoders (HM, x264, x265)
- Packet loss simulation:
  - Robust reference decoder (AVC and HEVC) (Enrico Masala)
  - HEVC processing tool chain (open source) (Marie-Neige Garcia)
- Bitstream to machine readable XML
- FR metrics/indicators:
  - Continuous updates of NR video indicators (MOAVI) (Mikołaj Leszczuk, Steve Sciandra)
  - Python implementation of P.1201.2 (Marie-Neige Garcia)

# ORGANIZATION OF REPRODUCIBLE RESEARCH

- The intention is that every publication can be rerun easily
  - <http://vqegjeg.intec.ugent.be/wiki/>
  - Data, scripts, and virtualbox integration in order to redo all publications
- A Virtualbox image is updated weekly at:
  - <ftp://ftp.ivc.polytech.univ-nantes.fr/>
  - Accessible through TeamViewer  
(ask credentials to Marcus Barkowsky)
- Git repository (software versioning environment)
- Identification of HRCs using a MySQL database



# ONGOING WORK

- Biweekly meetings will continue
- Further statistics on the large scale database:
  - Performance estimation of objective measurements
  - Determining subset for subjective testing

# FUTURE WORK

- Extending SRC variety drastically
- Integrate VMAF functionality
- Increased focus on pooling strategies

# WHERE CAN I GET MORE INFORMATION?

- <http://vqegjeg.intec.ugent.be/wiki/>

(notably section resources, constantly updated, volunteers welcome!)

How may I get involved?

- Subscribe to the VQEG-JEG mailing list

<http://www.its.bldrdoc.gov/vqeg/email-reflectors.aspx>

- Join our biweekly conference call

# PRESENTATIONS

- Enrico Masala - Enlarging the JEG-Hybrid large database of video sequences
  
- Ahmed Aldahdooh - From Large-scale to small-scale databases

# EXTRA INFORMATION