# Immersive Media Group

- Mission: Quality assessment of immersive media, including virtual reality, augmented reality, stereoscopic 3DTV, multiview…

- Goals: Baseline quality assessment of today's systems
  - Using repurposed traditional content for virtual reality
  - **New content** captured specifically for virtual reality,
  - **Subjective test methods, presentation requirements, QoE guidelines**
  - Virtual reality gaming

- Technologies:
  - **Light field** processing also called plenoptic
  - Systems **with and without feedback** in response to the viewer's
  - **Multiview** technologies, including full parallax
  - Displays ranging from small devices to theater screens

- Email reflector: img@vqeg.org

Contributions in the last meeting
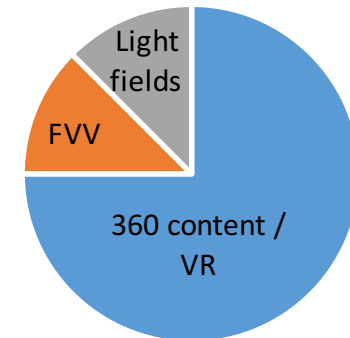
Members from academia and industry:
Université de Nantes (France) (co-chair), Wuhan University (China) (co-chair), Intel (US) (co-chair), Nokia Bell Labs (Spain), Universidad Politécnica de Madrid (Spain), Google (US), TU Ilmenau (Germany), Ghent University (Belgium), etc.

Quality assessment for 360 content

- Points of interest: https://docs.google.com/document/d/1xLxVeXYCegRHfPMWyiIo0ELvR00pUsHGdLE6IWYhJOM/edit?usp=sharing
  - **Content:** Identify and gather images and videos for subjective and objective testing
    - 1.1. Review of available datasets of images and videos.
    - 1.2. Content Characterization
    - 1.3. Possible contributors providing new content.
    - 1.4. Work towards a common dataset.
  - **2. Subjective assessment:** Provide guidelines/recommendations for subjective experiments
    - 2.1. Factors to evaluate and scales to use: Image quality, Immersiveness, discomfort, sickness, …
    - 2.2. Methodology: presenting the content, duration of stimuli, rating, duration of the sessions, …
    - 2.3. Testing environment settings.
    - 2.4. Equipment: HMDs, browsers/normal displays, mobile, Tracking devices, …
  - **3. Objective assessment:** Identify useful metrics and provide guidelines to use them
    - 3.1. Possible existing metrics to use.
    - 3.2. Guidelines to apply them: Projections, ground truth, weighting according to head/eye tracking, …
  - **4. Use cases:** Identify use cases to facilitate the design of tests
    - 4.1. Distortions to take into account: coding artifacts, adaptive streaming, …

Quality assessment for 360 content

- Expecting contributions on any of those topics, especially:
  - Datasets: identify datasets, possibility of sharing content, detailed content characterization, …
  - Subjective assessment issues: methodologies, factors to evaluate, …
  - Objective metrics: possible metrics to use, how to use them, …
  - Use cases.

- For the moment, available here: https://drive.google.com/drive/folders/0B4K5KVGJNKEpOHd3cUZRRnppSDQ?usp=sharing

- Discussion of the contributions in future audio calls/meetings.

Quality assessment for 360 content

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  - Contribution from Pablo Pérez and Jaime Ruiz (Nokia Bell Labs):
    - Proposal for VQEG IMG Work plan: Use cases, subjective metrics & test plan.
  - Contribution from Zhenzhong Chen (Wuhan University) at VQEG Meeting in London
    - Test Plan for Subjective Assessment of VR Video Quality.
  - Google doc with a list of possible 360 image/video datasets (contributions are welcome)
    - Looking for high-quality content:
      - Nokia Bell Labs → Some own sequences can be shared. Checking possibility to share content from Nokia (Ozo camera).
      - EBU → Some partners willing to share (or check the possibility) content for VQEG IMG (e.g., RTVE, NTR, etc.).
- Future steps:
  - Discuss specific contributions
  - Get content
  - Provide guidelines? Test plan?

Immersive Media Group

- Edition of the VQEG eLetter → To be released soon.

Presentations at Krakow Meeting

- HVEI special-session preview:

1. "Quality of Experience for a Virtual Reality simulator", Kjell Brunnström (RISE Acreo AB)
2. "Towards Subjective Quality Assessment for Panoramic Video", Zhenzhong Chen and Grace Zhang (Wuhan University)
3. "A framework for adaptive delivery of omnidirectional video", Christian Timmerer (University of Klagenfurt)
4. "Exploring the effects of subjective methodology on assessing visual discomfort in immersive multimedia", Jing Li and Patrick Le Callet (Univerity of Nantes)

- Others:

1. "Monitoring app of video quality experience in real time", Narciso García (Universidad Politécnica de Madrid)
2. "QoE of Omnidirectional (360°) Videos", Ashutosh Singla and Stephan Fremerey (TU Ilmenau and Telekom Innovation Laboratories, Berlin)
3. "IEEE standard working group HFVE (Human Factors for Visual Experiences) reaching out VQEG", Patrick Le Callet (University of Nantes)
4. "Salient360! IEEE ICME 2018 edition", Patrick Le Callet (University of Nantes)