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Subjective Methods of Measuring QoE

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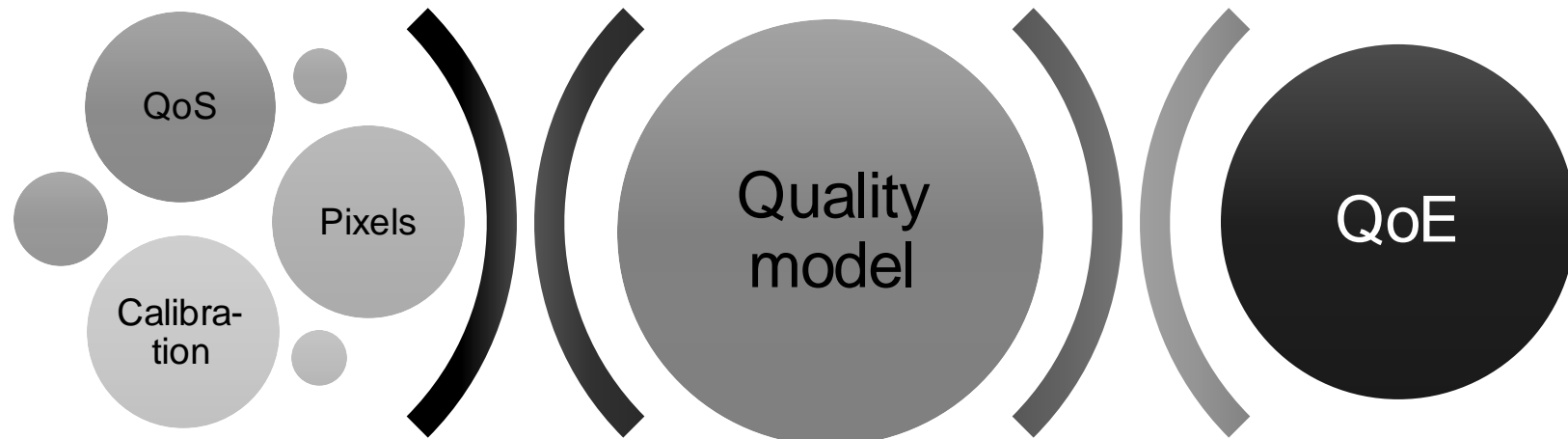
06.06.2024

Quality of Experience (QoE)

- » The degree of delight or annoyance of a person
- » The person experiences an application, service, or system
- » The QoE results from the fulfillment of the person's expectations and needs wrt utility and/or enjoyment
- » All that in the light of person's context, personality and current state



From QoS to QoE



What we know

What we build

What we want

Idea

- Subjective scores (i.e. calibration data) = ground truth
- Vary contents to measure the quality
 - Everything else should stay the same
- Use the scores to improve your predictions about the quality (i.e., build a better-quality model)

Obtaining Calibration Data

- Perform a “subjective test”
- Subjective scores as a result
- Hundreds to thousands needed
- Various contents, qualities, age groups, etc.
- Homogeneous conditions for everyone



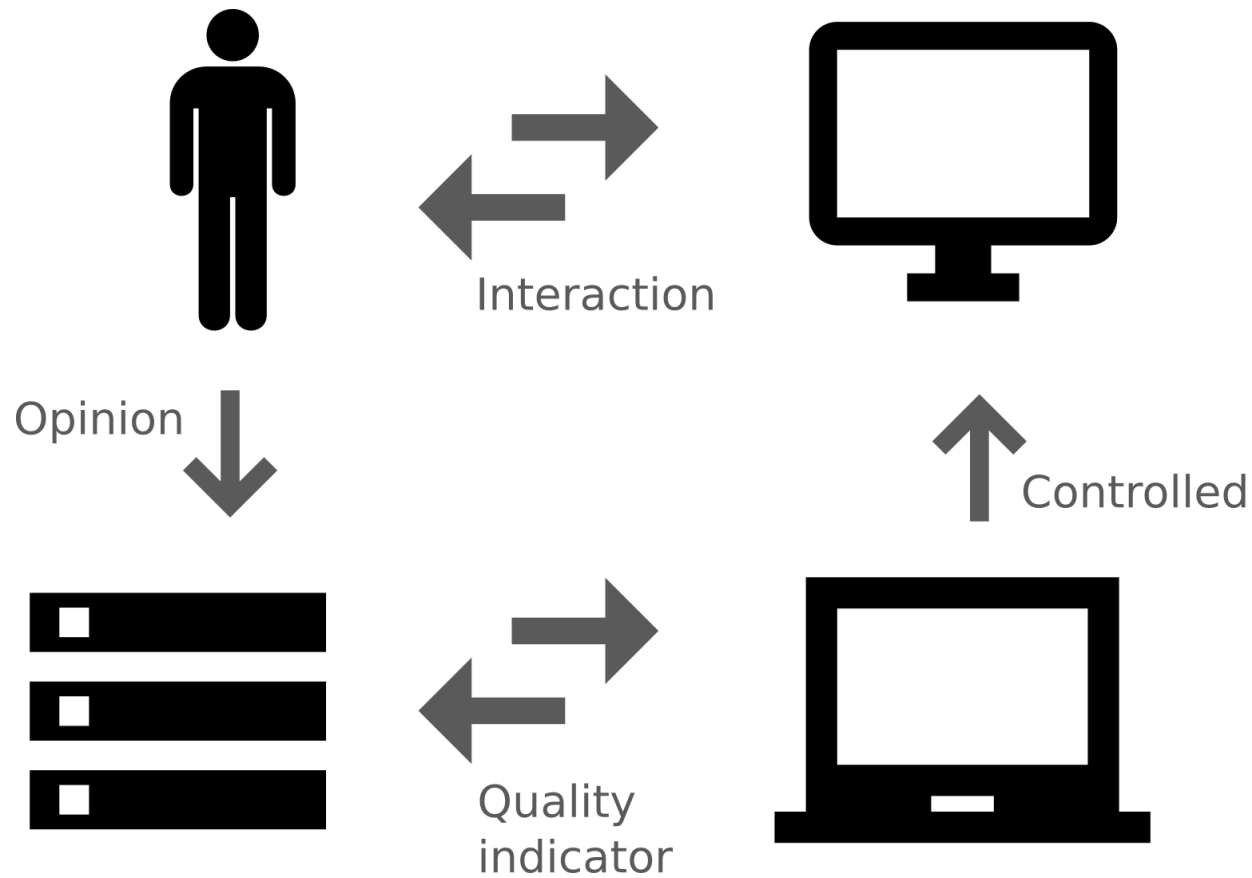
Naming Convention

Sources (SRC)

Hypothetical Reference Circuits
(HRC)

Processed Video Sequences (PVS)

Mean Opinion Scores (MOS)



Practical Realization

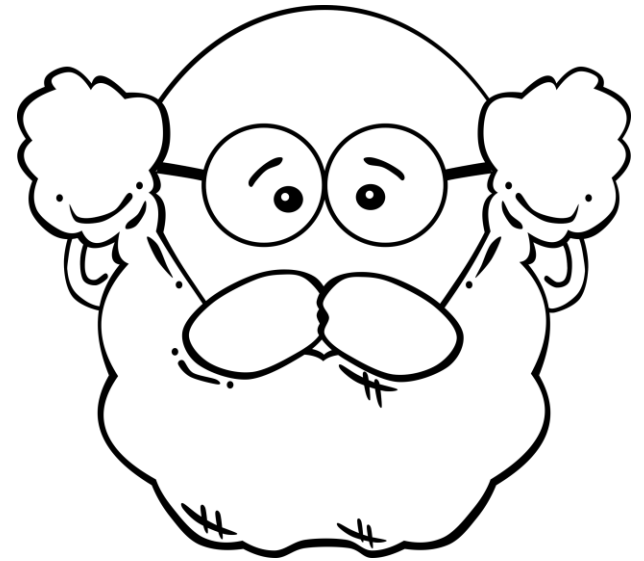
Content is Important

- » Different expectations from different contents
- » Examples:
 - Sport,
 - News,
 - Cartoon.
- » Try to accomodate for the whole scale of qualities



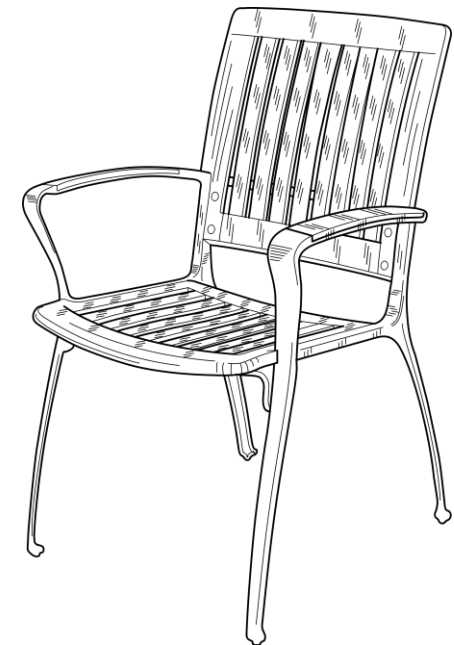
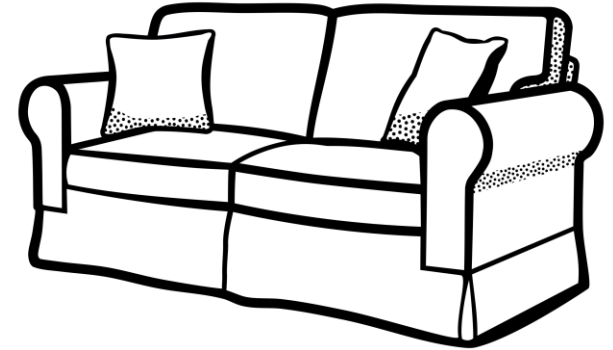
Testers are Important

- Different expectations depending on a social group
- Examples:
 - age groups,
 - ethnic groups,
 - level of advancement groups



Environment is Important

- Lighting conditions
- Display size
- Distance from the display
- Is tester sitting on a chair or a sofa?
- Is there anything that can distract the tester?



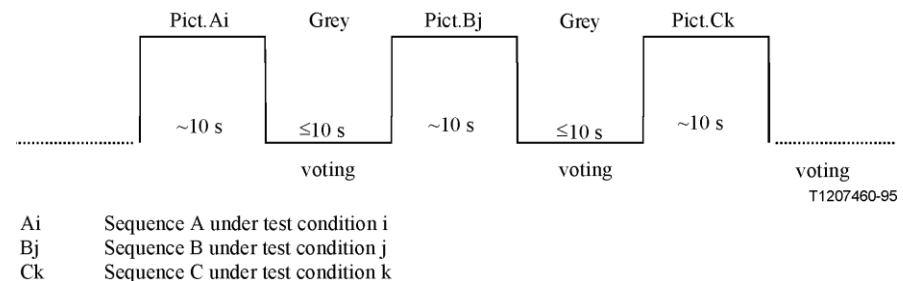
Training is Important

- We want to have the data of good quality
- The tester must know how to use a testing interface



Scale is Important

- How many levels of quality do we differentiate?
- Do we compare PVSs or score them one-by-one?
- Absolute Category Rating (ACR) as the most popular



Why do We Care?

- » We want repeatable results (that can be compared among many laboratories)

Let's do the Test!