Video Codec Requirements and Evaluation Methodology

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Contents

- **An overview of applications** ← Minor and editorial changes
- **Requirements** ← Minor and editorial changes
- **Evaluation methodology** ← No changes

An overview of applications

- **Introduction**
  - Editorial changes
- **Video monitoring / surveillance**
  - The list of frame-rate for 3 resolutions was extended:

Resolution	Frame-rate in the previous revision, fps	Frame-rate in the current revision, fps
1080p, 1920x1080	25	25, 30
5Mpixels, 2560x1920	12	12, 25, 30
2160p (4K),3840x2160	12	12, 25, 30

Requirements

- **General requirements** ← Minor and editorial changes
  - 3.1.1:The most basic requirement is coding efficiency, i.e. compression performance **on both "easy" and "difficult" natural content as well as screen sharing content (both static and dynamic)**. The codec should provide higher coding efficiency over state-of-the-art video codecs such as HEVC/H.265 and VP9, at least by 25% in accordance with the methodology described in Section 4.1 of this document. For higher resolutions, the coding efficiency improvements are expected to be higher than for lower resolutions.

  - 3.1.3: **Bitstream** syntax should allow extensibility **and backward compatibility**. New features can be supported easily by using metadata (e.g., such as SEI messages, VUI, headers) **without affecting the bitstream compatibility with legacy decoders. A newer version of the decoder shall be able to play bitstreams of an older version of the same or lower profile and level.**

Requirements

- **Basic requirements** ← Minor and editorial changes
  - Minor changes were only made in 3.2.2. “Coding delay”: **Support of efficient random access point encoding (such as intra coding and resetting of context variables) as well as efficient switching between multiple quality representations.**
  - 3.2.3. Complexity: Feasible real-time implementation of both an encoder and a decoder supporting a chosen subset of tools for hardware and software implementation on a wide range of state-of-the-art platforms. The real-time encoder tools subset should provide **meaningful** improvement in compression efficiency **at reasonable complexity of hardware and software encoder implementations as compared to current real-time implementations of state-of-the-art video compression technologies such as HEVC/H.265 and VP9.**
- **Optional requirements** ← No changes

Conclusions

- No comments were received on the previous revision
- **We recommend to adopt this document as an RFC**

Thank You