**INTERNATIONAL ORGANISATION FOR STANDARDISATION**

**ORGANISATION INTERNATIONALE DE NORMALISATION**

**ISO/IEC JTC1/SC29/WG11**

**CODING OF MOVING PICTURES AND AUDIO**

**ISO/IEC JTC1/SC29/WG11 N17539**

**February 2016, San José, CA, US**

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| **Source** | **Requirements** |
| **Status** | **Approved** |
| **Title** | **Draft Requirements for a New Video Coding Standard** |
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1. **Introduction**

There is a constant demand for more efficient video coding technologies, however coding efficiency not the only factor which determines the industry choice of video coding technology for products and services.

1. **Objectives**

The objectives for a potential new video coding project are to develop a video compression standard that industry can use in a broad range of applications in a timely fashion, by encouraging the timely publication of licensing terms and by improving upon the existing MPEG process of standard development.

1. **Suggested Processes**

It is believed that the following improvements to the MPEG process will lead to the achievement of the objectives above:

* A brief statement of requirements
* A call for proposals
* A testing of the responses received
* Identification of functionalities, each of which provides a specific benefit in terms of efficiency, complexity or operation
* Definition of a test model, test sequences and test conditions
* Adoption of only one proposal (from one or more organizations) per functionality wherever possible
  + The proponent(s) may improve their own proposal, subject to the agreement of the group
  + Other participants may offer an alternative solution, intended to fully replace the existing one. This will replace the existing solution if significant benefits are identified by the group

The standard should be written so that tools can be cleanly switched off wherever possible and practical.

Proponents are encouraged to make voluntary commitments on timely (e.g. within 2 years of FDIS stage) publication of licensing terms.

1. **Requirements**
   1. **Compression Performance**

For 10 bit operation, the baseline profile should have a compression performance that is no worse than that of HEVC Main 10. A higher profile should have a compression performance for 10 bit operation that is at least 30% better than HEVC Main 10.

* 1. **Complexity**

For the baseline profile, the decoder complexity should be no more than twice as complex as HEVC Main 10 across key metrics at comparable bit depths and resolutions. A higher profile, giving at least 30% better compression performance than HEVC, should be no more than three times as complex across key metrics at comparable bit depths and resolutions as HEVC Main 10.

Key hardware and software metrics may include memory bandwidth, maximum block sizes, decoder runtime, power consumption, etc.

1. **Profiles and Levels**

The standard shall define profiles and levels targeted at different application scenarios that are of interest to industry. In particular, it is envisaged that there will be a Baseline profile that is either Option 1 (with second sub-bullet not checked) or for which a published license is understood to exist. In addition, the standard shall facilitate the creation of defined subsets of the standard by external bodies, e.g. by making the standard’s tools as switchable as possible.

1. **Timeline**

The tentative timeline targets FDIS of the first version of this video coding specification by the end of 2020.