



MC-IF PROFILING WG: 4TH MEETING

Jill Boyce 27 August 2019

Agenda

- Public availability of documents
- Update on JVET profiling-related activities
- Review of minutes of June 2019 meeting
- Discussion about MCIF sub-profile definition process
- Future plans

STATEMENT ON PARTICIPATION OF BIS “ENTITY LIST” COMPANIES IN MC-IF (TO BE PROVIDED AT MC-IF MEETINGS)

- All Media Coding Industry Forum, Inc. (“MC-IF”) activities are subject to compliance with applicable laws, including U.S. Export Administration Regulations (“EAR”). EAR itself defines what is and is not considered “subject to EAR.” In particular, Section 734.7(a) contains various exclusions, including for technology that is considered “published,” and for information distributed at a conference, meeting, [or] seminar... generally accessible to the interested public (the “EAR Exclusions”)
- In reliance on EAR Exclusions and other applicable authority in the EAR, MC-IF has determined that companies on the Entity List may attend and participate in MC-IF Member Work Group meetings and Member Meetings.
- MC-IF conditions the participation of companies on the Entity List on the ability of the MC-IF Work Groups to exclude non-public technical information from its meetings and any communications forum. Therefore, it is important for all Work Groups and closed Member Meeting sessions to limit the discussions to non-technical matters or public technical information.
- Specifically, the Profiling Work Group will post from each meeting, the agenda, input documents and output documents as quickly as possible to ensure all information is publicly available.
- Any private or personal discussions with Entity List companies are outside the scope of the MC-IF official meetings are beyond the scope of MC-IF’s meeting guidance and Members and other attendees should seek the advice of their company’s legal department to receive guidance about such discussions.

Profiling work group documents will be public

- **“Profiling Work Group will post from each meeting, the agenda, input documents and output documents as quickly as possible to ensure all information is publicly available.”**
- **Public website:** <https://www.mc-if.org/profiling-work-group>
- **Profiling WG participants should be aware that input and output documents will be made public**
 - **Meeting minutes will be part of the output documents**
 - **Will note participants, but not attribute discussion to individuals, except as associated with an input document**

Update on JVET profiling-related activities

- April 2019 meeting:
 - Sub-profile indicator syntax element: 3 bytes
 - Constraint flags
- July 2019 meeting:
 - [JVET-O0044](#)
 - Signal zero or more sub-profile indicators
 - Allow a bitstream to avoid indicating conformance to a sub-profile, or to signal conformance to multiple sub-profiles
 - Increase Sub-profile indicator syntax element to 4 bytes (from 3)

MCIF sub-profile definition process

- The profile WG should begin work to recommend a process for MC-IF to define and register sub-profiles, starting with VVC
- Issues to define a process for sub-profile registration
 - Mechanism for sub-profile definition
 - Requirements for applications
 - Decision-making process
 - Publication of defined sub-profiles

BOARD MEETING REVIEW

Profiling Work Group

Chair: Jill Boyce

- Identify need for profiling, sub-profiling, constraint flags, and sets thereof, initially for VVC
- Communicate MC-IF requests or recommendations to relevant bodies, including VCEG, MPEG
- Define a process for MC-IF to use to serve as a registration authority for sub-profiles, initially focusing on VVC

Motivation for MC-IF involvement in VVC sub-profiling

- WG charter includes definition of a process for MC-IF to serve as a registration authority for VVC sub-profiles
 - Allocating code points for an MC-IF-specific terminal provider oriented code
- Benefits for industry
 - Improves VVC implementation interoperability by
 - Ensuring that the sub-profiles registered by MC-IF have been clearly and unambiguously described and have undergone review by technical experts
 - Providing easy access to sub-profile descriptions
- Benefits for MC-IF
 - Will increase visibility of MC-IF in industry
 - Will encourage companies to join MC-IF to participate in review process

VVC design, as of VVC specification Draft 5 (Apr 2019)

- Includes in Profile, Tier, Level syntax structure:
 - List of constraint flags/syntax elements
 - Specified in VVC spec
 - Sub-profile indicator syntax element
 - 3 bytes allocated in VVC spec
 - Contents specified by ITU-T T.35, outside of VVC specification
 - 1 byte for country code
 - 1 byte for terminal provider
 - 1 byte for terminal provider oriented code
- Any organization with an ITU-T T.35 Terminal Provider Code may define a VVC sub-profile

Next steps

- MC-IF to apply for an ITU-T T.35 terminal provider code
 - Probably in United States
 - Designate person to handle application process
- Define a process for allocation of a sub-profile indicator code point
 - Requirements for applications
 - Decision-making process
 - Publication of allocated code points

Additional steps

- Communicate with industry about sub-profiling
 - Should we solicit input from outside MC-IF on definition of process?
- Implement the process. Details will depend on defined process, but may include the following (from strawman process document):
 - Technical expert review of proposals in Profiling WG
 - Voting handled by VTM
 - Publish information on website about allocated sub-profile indicator code points
 - May include descriptions, conformance bitstreams

Discussion

- Next steps?
 - Upcoming JVET meeting
- Scheduling Profiling WG next meeting

BACKUP

STRAWMAN PROPOSAL

First presented at Kickoff Profiling WG meeting 2 April 2019

Strawman proposal for sub-profile indicator code points: Proposal

- MC-IF will request to be assigned an ITU-T T.35 terminal provider code from a country (probably US)
- MC-IF will create a public registry of code points for sub-profiles
 - The code point space will have 8 bits per VVC profile, so 256 sub-profiles per VVC profile may be assigned
- MC-IF will develop a process to register a sub-profile code point

Strawman proposal for sub-profile indicator code points: Code point allocation request process

Organizations may submit a request for allocation of a sub-profile code point by meeting the following requirements for study by the Profiling WG:

1. Document describing the proposed sub-profile, containing:
 - Sub-profile name
 - Name of VVC profile which is being modified
 - List of any further restricted syntax elements and their allowed values
 - Any other restrictions to the bitstream
2. Set of conformance bitstreams for the sub-profile, with associated description
3. Report from two independent organizations confirming ability to properly decode conformance bitstreams, and description of how confirmation was performed

Strawman proposal for sub-profile indicator code points:

Decision process

- Once requirement #1 is met, the submitting organization will be invited to present to a meeting of the Profiling WG
- Once requirements #2 and #3 are met, a majority vote will be held of the Profiling WG participants (one vote per member company) to recommend to allocate a sub-profile code point
- Once the profiling WG recommends allocation of a sub-profile code point, a majority vote of a quorum of the Board of Directors will allocate sub-profile code point

Strawman proposal for sub-profile indicator code points: Publication

- MC-IF will make publicly available on its website:
 - List per VVC profile of MC-IF allocated sub-profile code points
 - For each allocated sub-profile code point:
 - Description document
 - Conformance bitstreams, with associated description

Strawman proposal for sub-profile indicator code points:

Example – Progressive Main sub-profile

- Assume that VVC will define a Main profile
- Request submission example
 1. Document
 - Sub-profile name: Progressive Main
 - Name of VVC profile which is being modified: Main
 - List of any further restricted syntax elements and their allowed values:
 - `general_progressive_source_flag` equal to 1
 - `general_interlaced_source_flag` equal to 0
 - `general_frame_only_constraint_flag` equal to 1
 - Any other restrictions to the bitstream: None

Strawman proposal for sub-profile indicator code points:

Example – Progressive Main sub-profile

2. Conformance bitstreams generated using VTM reference software with appropriate input config to

- Populate `general_sub_profile_idc` 3 bytes as:
 - 1 byte for country code: `United States`
 - 1 byte for terminal provider: `MC-IF`
 - 1 byte for terminal provider oriented code: `allocated code point value`
- Set allowable values for further constrained syntax elements
 - `general_progressive_source_flag` equal to 1
 - `general_interlaced_source_flag` equal to 0
 - `general_frame_only_constraint_flag` equal to 1

3. Confirmation report from two independent organizations, confirming:

- Proper value of `general_sub_profile_idc` in `profile_tier_level()` syntax structure
- Allowable values of `general_progressive_source_flag`, `general_interlaced_source_flag`, and `general_frame_only_constraint_flag` in `general_constraint_info()` syntax structure