**3GPP TSG-SA4 Meeting #131S4-250032**

**Geneva, Switzerland, 17th Feb 2025 - 21st Feb 2025**

**Source: Qualcomm Incorporated, Tencent**

**Title: Pseudo-CR on [VOPS] System Operation Points**

**Spec: 3GPP TS26.265v0.5.0**

**Agenda item: 9.5**

**Document for: Decision**

**1. Introduction**

System Operation points were considered

**2. Reason for Change**

CMAF is defined in 26.511, RTP in 26.114. In Rel-19 let’s keep this and focus on basic mappings. First attempts, more work needed.

**3. Conclusions**

Better something than nothing.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS26.265v0.5.1.

\* \* \* First Change \* \* \* \*

## 4.2 Reference architectures and definitions

In order to define the normative aspects of this specification, reference architectures are defined. The core architecture is provided in Figure 4.2-1. The workflow addresses the generation of a *video bitstream* from a video signal using a *video encoder* as well as the decoding of a video bitstream by a *video decoder* and providing the resulting decoded video as well as associated metadata to a rendering and display process. The video encoder as well as the video decoder may be configured to certain operations indicated by APIs in Figure 4.2-1. These APIs are not normatively specified but serve as an example reference to configure encoders and decoders as documented in Annex [A].



Figure 4.2-1 Reference architecture for video operating points and capabilities

A more system-centric architecture is provided in Figure 4.2-2. The workflow addresses the generation of a *transport stream* from a video signal using a *video encoder* and a *packager*. The package may include for example timing and metadata information. The de-packaging and decoding of the *transport stream* by a de-packager and a *video decoder*, respectively, allows for providing the resulting video signal as well as associated metadata to a rendering and display process. Again, the packager/encoder as well as the de-packager/decoder may be configured to certain operations indicated by APIs in Figure 4.2-2.



Figure 4.2-2 Reference architecture for system operating points and capabilities

Based on this introduction, the following terms are defined:

**- Operating Point:** A collection of different possible video formats including spatial and temporal resolutions, colour mapping, transfer functions, etc. and a video encoding format.

**- Bitstream**: A compressed media representation presented as a sequence of bits that conforms to a particular video coding specification/format and one or more Operating Points.

**- Receiver**: A device that can ingest and decode any bitstream that is conforming to a particular video coding specification and Operating Point, and optionally render it.

In addition, on system level the following terms are defined:

**- System Operating Point:** A collection of different possible video formats including spatial and temporal resolutions, colour mapping, transfer functions, etc., a video encoding and a packaging format.

**- Transport Stream:** A packaged media bitstream that conforms to a particular video coding and packaging specification/format and one or more Operating Points.

**- System Receiver:** A receiver that can de-package and decode any system bitstream that is conforming to a particular System Operating Point, and optionally render it.

NOTE: A reference architecture for multiple decoders is for further study.

System Operating Points are not defined in this specification but are left for mappings to specific delivery protocols such as RTP for MTSI, CMAF/DASH for 5G Media Streaming, or ISO BMFF for Messaging Services. However, this specification provides mapping principles to delivery protocols.

## 4.3 Specification

This specification defines the following capabilities:

- Video Decoding capability: The capability to decode any video bitstream that conforms to an operating point and provides a conforming output video signal and possibly associated metadata.

- Video Encoding capability: The capability to encode any video signal included in the operating point to a bitstream that is decodable by decoder that conforms to the same operating point.

While not explicitly stated in the capabilities, it is a requirement for decoders and receivers to process the data in real-time. For encoder, real-time encoding is typically also a requirement.

\* \* \* Next Change \* \* \* \*

# 7 Common System Integration

7.1 Introduction

This clause documents general functionalities that are relevant for integration of video codecs into delivery systems to support common APIs on encoders and decoders.

7.2 Functional Definitions

### 7.2.1 General

This clause defines functional definitions for system integration.

Editor’s Note:

* See here for guidelines: https://www.w3.org/TR/webcodecs-hevc-codec-registration/
* Codecs String
* Random Access point

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* Chunk
* Decoder Configuration Record

### 7.2.2 AVC

### 7.2.3 HEVC

\* \* \* End of Changes \* \* \* \*