3GPP TSG-SA4 Meeting SA4#113-e S4-210532

April 6th- April 14th 2021

**Source:** Tencent

**Title:** Draft CR updates on Viewport-relative Overlay Configuration

**Document for** Agreement

**Agenda item:** 12.5

# Introduction:

This document proposes additional text for the draft CR. The below updates are proposed to be added in section X.6.4.3.3 of the draft CR.

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| **First Change** |

X.6.4.3.3 Viewport-relative Overlay Configuration

An ITT4RT client supporting the 3gpp\_overlay attribute to configure a viewport-relative overlay shall set parameter type = ‘0’ and additionally include the parameter viewport\_relative\_overlay\_config defined as follows:

**viewport\_relative\_overlay\_config** = Overlay\_rect\_left\_percent "," Overlay\_rect\_top\_percent "," Overlay\_rect\_width\_percent "," Overlay\_rect\_height\_percent "," Relative\_disparity\_flag "," (Disparity\_in\_percent / Disparity\_in\_pixels),” media\_alignment”, ”layering\_order”,”opacity”,”overlay\_priority

* Overlay\_rect\_left\_percent: Specifies the x-coordinate of the left corner of the rectangular region of the overlay to be rendered on the viewport in per cents relative to the width of the viewport. The values are indicated in units of 2-16 in the range of 0 (indicating 0%), inclusive, up to but excluding 65536 (that indicates 100%).
* Overlay\_rect\_top\_percent: Specifies the y-coordinate of the top corner of the rectangular region of the overlay to be rendered on the viewport in per cents relative to the height of the viewport. The values are indicated in units of 2-16 in the range of 0 (indicating 0%), inclusive, up to but excluding 65536 (that indicates 100%).
* Overlay\_rect\_width\_percent: Specifies the width of the rectangular region of the overlay to be rendered on the viewport in per cents relative to the width of the viewport. The values are indicated in units of 2-16 in the range of 0 (indicating 0%), inclusive, up to but excluding 65536 (that indicates 100%).
* Overlay\_rect\_height\_percent: Specifies the height of the rectangular region of the overlay to be rendered on the viewport in per cents relative to the height of the viewport. The values are indicated in units of 2-16 in the range of 0 (indicating 0%), inclusive, up to but excluding 65536 (that indicates 100%).

NOTE: The size of overlay region over the viewport changes according to the viewport resolution and aspect ratio. However, the aspect ratio of the overlaid media is not intended to be changed.

* Relative\_disparity\_flag indicates whether the disparity is provided as a percentage value of the width of the display window for one view (when the value is equal to 1) or as a number of pixels (when the value is equal to 0). This applies for the case when there is a monoscopic overlay.
* Disparity\_in\_percent: Specifies the disparity, in units of 2−16, as a fraction of the width of the display window for one view. The value may be negative, in which case the displacement direction is reversed. This value is used to displace the region to the left on the left eye view and to the right on the right eye view. This applies for the case when there is a monoscopic overlay and stereoscopic background visual media.
* Disparity\_in\_pixels indicates the disparity in pixels. The value may be negative, in which case the displacement direction is reversed. This value is used to displace the region to the left on the left eye view and to the right on the right eye view. This applies for the case when there is a monoscopic overlay and stereoscopic background visual media.
* Media\_alignment: Specifies the default intended scaling of the overlay source depending on the dimensions of the specified rectangular region and the intended placement of the scaled overlay source relative to the specified rectangular region.
* Layering\_order: Indicates the default layering order among the overlays that are relative to the viewport, and separately among each set of overlays that have the same depth. Viewport-relative overlays are overlaid on top of the viewport in descending order of layering\_order, i.e., an overlay with a smaller layering\_order value shall be in front of an overlay with a greater layering\_order value. The layering order for overlays of the 360-degree video should be decided by the ITT4RT-Tx client.
* Opacity: Indicates an integer value that specifies the default opacity that is to be applied for the overlay and assigned by the ITT4RT-Tx client. Value 0 is fully transparent, and value 100 is fully opaque with a linear weighting between the two extremes. Values greater than 100 are reserved.
* Overlay\_priority: Indicates which overlay should be prioritized in the case the ITT4RT-Rx client does not have enough decoding capacity to decode all overlays. A lower overlay\_priority indicates higher priority. The value of overlay\_priority, when present, shall be equal to 0 for overlays that are essential for displaying. More than one overlay may have the same overlay\_priority and an ITT4RT-Rx client that does not support all overlays with the same priority may choose any subset of these.

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| **End of Changes** |

# Proposal

The proposal is to move the agreed changes to the draft CR