Annex 12
Overlays

Presentation summary

- Recall on how ISO 16505 covers overlays
- Status on how UN R46 Annex 12 deals with overlays vs ISO 16505
- OICA new proposal

Recall of ISO 16505 on Overlays

- **4.5.13 Definition:**
  - any driving-related visual information added to the original image (such as icons, labels, colored areas, etc.) that modifies it in a way that part of the original information is hidden. Overlays can be partially transparent or totally opaque. Overlays can be displayed temporary or permanently
- **6.2.5 Requirements**
  - Overlays, according to subclause 4.5.13, are generally allowed. Within the required field of vision only temporary transparent overlays are allowed.
- **7.2.5 Test method**
  - Verify by visual inspection that overlays which are displayed within the required field of view as defined in subclause 6.4 are temporal and transparent (not opaque).

Status of UN R46 vs ISO 16505 on Overlays

- **ISO 4.5.13 Definition is taken over**
- **ISO 6.2.5 Requirements is <u>replaced by</u> :**
  - **2.4 Overlays**
- **ISO 7.2.5 Test method is <u>replaced by</u> :**
  - **Appendix 1**

Status of Annex 12 on Overlays

- **2.4 Overlays**
  - Overlays, according to subclause 4.5.13 of ISO 16505:[201x], are generally allowed. The maximum total obstruction and overlays shall not exceed the values in paragraph 15.2.4.9.1 and 15.2.4.9.2 of ISO 16505:[201x]
  - The test method of Appendix 1 shall be applied.

Problems faced so far:

What information shall an overlay provide?

When shall we consider an overlay is an obstruction?

Transparency, surface…

Where overlays shall be regulated?

Required FOV, Monitor defined size,…

Status of Annex 12 Appendix 1

TEST METHOD FOR THE OVERLAY AND TRANSPARENCY

1. Luminance measurements are made perpendicular onto the monitor at a portion where the overlay is displayed. Use a 1 degree measurement field within the luminance meter (if necessary the manufacturer shall provide for testing purpose a sufficient large test pattern).

1.1. Step 1: Determination of the luminance of the overlay

Measure the luminance L1 of the monitor with the overlay switched on whereas the camera captures a black object in that area.

1.2. Step 2: Determination of the luminance without overlay

Measure the luminance L2 of the monitor with the overlay switched off whereas the camera captures a white object in that area.

1.3. Step 3: Determination of the transparency

Measure the luminance L3 of the monitor with the overlay switched on whereas the camera captures a white object in that area. The following relation has to be fulfilled:

$$L3 \geq 0{,}6 * L2 + L1$$

New OICA proposal

- **ISO 4.5.13 Definition is taken over**
- **ISO 6.2.5 Requirements is replaced by :**
  - **2.4 Overlay requirements**
    1. Overlays shall display safety driving-related visual information.
    2. Overlay surface: Overlay surface shall be measured according to #1.2 Appendix 1 of Annex 12.
    3. Overlay transparency: Overlay transparency shall be measured according to #1.3 Appendix 1 of Annex 12. The following relation has to be fulfilled: $L3 \geq 0{,}6 * L2 + L1$
    4. Overlay obstruction:
       1. Only overlay under [60%] transparency shall be considered.
       2. Each overlay shall not exceed [2,5%] of the required FOV displayed surface of the corresponding class
       3. The [total surface of overlays] shall not exceed at the same time provision of # 15.2.9.4.1 or 15.2.9.4.2 in the minimum required FOV

New OICA proposal on Annex 12 Appendix 1

TEST METHOD FOR THE OVERLAY AND TRANSPARENCY

1. Luminance measurements are made perpendicular onto the monitor at a portion where the overlay is displayed. Use a 1 degree measurement field within the luminance meter (if necessary the manufacturer shall provide for testing purpose a sufficient large test pattern).

1.1. Step 1: Determination of the luminance of the overlay

Measure the luminance L1 of the monitor with the overlay switched on whereas the camera captures a black object in that area.

1.2. Step 2: Determination of the luminance without overlay

Measure the luminance L2 of the monitor with the overlay switched off whereas the camera captures a white object in that area.

1.3. Step 3: Determination of the transparency

Measure the luminance L3 of the monitor with the overlay switched on whereas the camera captures a white object in that area.

2. Overlay surface shall be calculated on screenshots provided by [car manufacturer] displaying all worst cases.