**IWG-FVA: Internal Working Group for Field of View Assistant.**
**Expert Group 2 – Technical Requirements.**

Meeting Minutes, 2022, Oct 18th

## 1. Welcome, roll call of attendees

Attendees:
GERMANY (TÜV, Rudolph GERLACH),
JAPAN (AIST, Akinari HIRAO),
Industry (Stellantis, Renault, Nissan, Daimler trucks & cars, Audi, VW, JAMA, Sony, WayRay)

## 2. Adoption of agenda and previous meeting minutes

Industry sub-group preparation 17th Oct 2022, findings

- The Jama guideline provides coverage criteria: questions projection effective obstruction (e.g. not for highlighting projections)
- Contrast cannot be measured directly; matter of criteria on effective brightness of the FVA content (99% is obstruction)

Agenda for the meeting on 18th Oct 2022

- Discuss approach to image obstruction / coverage
- Investigate reuse of existing JAMA guidelines
- Minimum Virtual Image Distance (VID) regulation

## 3. Discussion

**Obstruction**

JAMA guidelines overview (coverage / obstruction criterion):

- Define sub areas (e.g. rectangular) of the FOV, which will be used as a stencil to guide compare the size of the virtual object against
- Further to that, criteria can be applied to define what maximum permissible coverage of such sub area by a virtual object (e.g. 35%)
- Static (all the time in the same position relative to the FOV) and dynamic (used to denote moving objects dynamically) projections

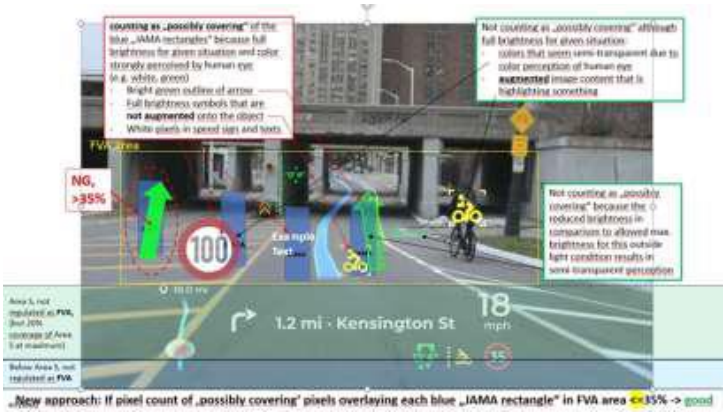
N.B. in group's discussion, terms coverage and obstruction are used interchangeably and were minuted as such.

Further to JAMA guidelines group discussed colour sensitivity (i.e. Human eye is more sensitive to green, white than red, blue) and transparent / untransparent (opaque) content. I.e. Transparent content is that of lowered brightness vs. normal, demanded system brightness in given conditions whereas opaque content is that of the brightness equivalent to system brightness in any given road conditions.

In the course of discussion, the group concluded that the problem can be simplified to the obstruction criterion. Taking into consideration various other factors as above, it should be possible to determine if the image is obstructive or not (some categories of images requesting objective evaluation criteria).

Further graphic content can be accessed via the report **GRSG-IWG-FVA_EG_TR_10-22 Industry input.pdf**

- UN access issue on November 8 review: file could not be checked online.
- Shared figures during session




Including public views,


https://www.continental.com/en/press/press-releases/2018-05-17-digilens/
https://biz.maxell.com/ja/display_equipment/ais_index.html (Japanese)

- Avoidance of misinterpretation of dynamic content needs to be evaluated (ref. to Virginia Tech presentation)
- JAMA: Current definition immature; more work needed before sharing outside the EG2 (Page 61 in the Report)

Current status of the discussion and group's understanding of acceptable (OK) and not acceptable (NOK) combinations ~~of parameters~~ is summarised in the table below

| **Attribute** / **Content** | High contrast colour (green, white) | Low contract colour (red, blue) | Large size, large portion of the sub-area covered (e.g. => 35%) | Small size, small portion of the sub-area covered (e.g. < 35%) | Static (1) projection | Dynamic (1) projection |
|---|---|---|---|---|---|---|
| Transparent | OK | OK | OK | OK | OK | OK |
| Opaque | NOK | OK | NOK | OK | NOK(2) | OK |

(1) Needs clarification (definition) of static vs dynamic projection
(2) Needs clarification on projection area: conventional HUD shall not be prohibited

**Static Evaluation of FVA**

- Evaluation of "effective obstruction"
- Night and day scenario
- Analyse pass / fail of latest vehicles with AR tech (Mercedes S-Class W223, Hyundai Ioniq, Audi Q4, VW ID4) against proposed JAMA Static evaluation criteria

**Virtual Image Distance**

- No grounds to impose restrictions on VID
- Fall back entirely on obstruction and coverage criteria

## 4. Summary next steps and further meetings

- Analyse pass / fail of latest vehicles with AR tech (Mercedes S-Class W223, Hyundai Ioniq, Audi Q4, VW ID4) against proposed JAMA Static evaluation criteria
- Publish meeting minutes
- Publish Virginia Tech report
- Plan next EG2 meeting (doodle?)
- JAMA guideline published (no access on November 8)