**IEEE P4001 Working Group**

**Meeting #32 Meeting Minute [15 February 2022] – [15:00 (UK)] - V00 Virtual Zoom Meeting**

1. Call to Order – John Gilchrist (JG)
   1. Introduction and Affiliation Declarations
      1. Roll call of Individuals
   2. Establishment of Quorum – Report on Membership
      1. Quorum achieved
      2. Attendance: attendees captured by Chris Durell (CD)
   3. Policing of membership (CD)
      1. Members Status Review
         1. 245 Observers / 37 Members
         2. CD to police membership and let people know when they are changing status.
2. Approval of Agenda - JG
   1. Agenda Review for Meeting #32 – (JG)
      1. Not reviewed as this was a workshop that will be lead by the slides and prior input from a questionaire
   2. Approval of Meeting Minutes from meeting #31
      1. Motion by Torbjorn Skauli (TS) / Seconded by Ray Soffer (RS)
3. Overview of IEEE Patent & Copyright Policies - JG
   1. Call for Patents - JG
   2. Copyright Policy - JG
4. Questionaire
   1. What are the problems
   2. How severe are the problems
   3. What change or action is recommended.

**NOTE from Secretary** – minutes below are recorded from the perspective of the slides in the deck and the questionnaire responses provided for the meeting. The minutes record only the salient points for discussion and action.

1. Fair representation and performance for tuneable systems or filter-based systems.
   1. There have been no comments to the group.
   2. Bodkin, Hinlea, and others to be polled.
      1. Hinalea said that the group has made a substantial effort to be inclusive to these technologies without compromising the charter (pushbroom).
2. Constraints and Assumptions - 1
   1. Assumption 7 – not having a common optical system for different ranges is not adequately covered and assumed to be “one imager” that covers the full range. There could be a loophole here that allows people to specify full range performance while not offering separate perforamnce for independent optical channels.
      1. Possible resolution is to provide independent specification for each optical channel for the intended range.
         1. Resolved that the standard should change the language to make sure that the language closes this loophole. Action to John Gilchrist, Philippe Deliot, Andre Fridman, Hannu Holma and Torbjorn Skauli.
            1. Philippe will take an action to look at the language and propose a solution.
3. Constraints and Assumptions – 2
   1. Curved slit allowance limitations vs. the assumption of a rectangular projection onto the detector array.
      1. Should there be a limit of range of curvature (Andre Fridman)
         1. Suggestion to clarify the limit on the language.
4. Constraints and Assumptions – 3
   1. Internal processing chain independence (or dependance) of the recording data values.
      1. Suggestion to provide cases where the data and processing dependance can be excepted.
      2. Action: Address by a NOTE or a formal exception of specific cases.
         1. Sugested that this needs to be reviewed by the D1 group. Andre requested to be part of the review by the D1 at the next meeting.
         2. Action to Jan Makowski to add this to the D1 agenda.
5. Reference Illuminants:
   1. 2855.5K as a standard for QTH-based or blackbody curve as a standard.
      1. Action: This will be adopted.
   2. 6000K is less concrete and may be OK to be theoretical or have a range.
      1. Action to have a side group discussion to determine the correct recommendation.
6. Peak and Centre Width:
   1. SPSF and SRF resolution and lack of definition of band center as defined by DLR
      1. Andrei will circulate the DLR paper for review and CIE 233 to find a good compromise.
      2. Consensus to to stick with x and y scans for now. Could be something to be investigated as we go forward.
7. Threshold values:
   1. Large variances need to be reported as they can affect results – it is good to have a range.
      1. Quantities that need thresholds should be identified and called out
         1. Make these “recommended” versus required.
      2. Action: Needs a through discussion and identification of which quantities are affected and how to handle this.
8. Metadata
   1. Defer - Break this out for the metadata section discussion tomorrow.
9. Accepted Loopholes and Omissions – 1
   1. Addressed in #10 above
10. Accepted Loopholes and Omissions – 2
    1. Straylight deferred to later discussion after the straylight group completes its work.
11. Accepted Loopholes and Omissions – 3
    1. Entrance pupil discussion deferred as it is a secondary effects.
       1. Need to make sure we address this as an assumption or include comment for different optical inputs that are co-boresighted (infinite focus).
    2. Frame transfer device systems can “blur” temporal or spatial edges.
       1. This requires further discussion
12. Accepted Loopholes and Omissions – 4
    1. Definitions for RTS and KTC offered as exceptional cases – no members raised any cases where these apply (readout only).
    2. Make assumptions clear on the noise model set-up.
13. Accepted Loopholes and Omissions – 5
    1. General agreement that that this is OK for now – no objections
14. Accepted Loopholes and Omissions – 6
    1. Section 4.12 omits several second order effects from the standard. They may be explored later.
15. Comments from Other Topics – 1
    1. As written this is clear and the assumption is for square pixels (not rectangular). This could offer some degree of exclusion or problems to framing cameras (snapshot).
       1. This requires more discussion and more opinions on use cases
       2. This could be a place for an “assumption” or “exclusion” regarding pushbroom and other types of cameras.
       3. Possible fallback position is to make the test case “static only” which resolves the issues if there are no objections.
16. Comments from Other Topics – 2
    1. Objection that this particular wording implies resampling as “bad” where it could be either bad or good depending on how it was done and if it was done correctly.
       1. Resampling and processing can be IP-related and a touchy subject.
       2. It may be a solution to not address resampling at this time but simply let the data quality stand as measured.
       3. More discussion is needed to develop agreement on a solution.
17. Comments from Other Topics – 3
    1. Effective pixel count vs. effective channel count.
       1. Bring this up tomorrow due to time constraints.
18. AOB
19. Adjourn General Meeting
    1. (JG) moved / (CD) seconded.
20. Meeting closed.

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