Augmented and Virtual Reality Standards Preliminary Organizational Meeting

Wednesday, February 1, 2017

Howard Room, Intercontinental Hotel, 888 Howard Street, San Francisco, CA

CALL TO ORDER at 3:30pm

Allen Krisiloff called the meeting to order and served as facilitator.

Welcome and Introductions

3M, Erin McDowell	3M, Susan Kent
3M, Timothy Wong	ColorLink Japan, Yoshitaka Sato
Google, James Dunphy	Greenlight Optics, Michael O'Keefe
Jabil Optics Germany, Frank Bretschneider	Meta, Jie Xiang
Microsoft, Bernard Kress	Microsoft, David Bohn
Microsoft, Keita Oka	Microsoft, Yarh Chee Poon
Moxtek, Alex Gao	Moxtek, Shaun Ogden
Oculus-Facebook, Edgar Auslander	Triptar and OEOSC, Allen Krisiloff

Appointment of Recording Secretary

Allen Krisiloff assisted by Shaun Ogden

Approval of the Agenda

Susan Kent moved for adoption/Shaun Ogden provided the second/100% approval.

Overview of this Initiative to Develop Standards for AR and VR

Erin McDowell identified the value of standards as their utility in creating inter-operability, enhancing creativity, and improving communications up and down the supply chain and with customers. She reviewed some of the specifications currently used to compare AR and VR products. She observed that many sets of specifications did not really characterize an entire product or a user's experience. In some cases, specifications, like resolution, are poorly defined and of limited utility.

Erin's presentation set the stage for a wide ranging discussion in which the following topics were raised: hardware vs. software; scope of a standard is important; measures of performance and techniques of measurement important for both systems and components; projection or digital eyepiece standards might be particularly relevant; some standards work has been performed on helmet mounted displays which should be directly relevant to the larger set of AR and VR products; there are probably important differences between AR and VR when it comes to standards; terminology and definitions for specifications are important to ensure comparability of spec sheets by consumers and engineers; standards for safety are important (heat generation, intensity projected into eyes, impact resistance, etc) and general health (vertigo, nausea, etc.); ergonomics and human form factors (ophthalmics; interpupillary distance, facial features, etc); there already exists a number of standards that are applicable to AR-VR, we just need to use them; we don't know where to find all the relevant standards, nor do we know how to help develop them.

Overview of Standards Development

Allen Krisiloff described how standards organizations are structured and managed by using the Optics and Electro-Optics Standards Council (OEOSC), American National Standards Institute (ANSI), the Accredited Standards Committee in Optics (ASCOP), and the International Standards Organization's Technical Committee 172 (ISO TC172) as examples. He also talked about how individuals and organizations interact with each other during the development of a standard.

Scope of an AR-VR Standards Committee

The International Electrotechnical Commission (IEC) has a number of standing committees that might be relevant to AR-VR. TC110 deals with displays.

Possible names of a standards committee that would imply the right scope for our interests: "Helmet Mounted Display" (HMD) is too military; "wearable" is too broad (we wear shirts); "near eye"; "near to eye displays"; "near to eye wearable technology"; "eyewear technology". No conclusions reached.

There was a general concern about adoption. How do we promote adoption after we expend significant effort to rationalize and publish a set of standards? We must educate journalists and consumer associations. It is a very difficult challenge.

There was repeated concern about focus on language and measurable quantities.

Erin McDowell presented some more ideas for concepts that might need standard definitions and measuring techniques, for example, field of view and resolution. Perhaps we could develop a smart phone app that would help a consumer test her visual acuity or to quantify her perception of the quality of an AR system.

The group decided that we need to understand what standards are under development in other organizations, for example, SID, IEC, and companies, like Rockwell-Collins and Airbus that have been active in helmet mounted displays for a long time.

Next Steps

We must start to develop a statement of scope that can aid in the review of other standards and serve as an organizing document if we create a new standards committee. Let's gather input for the four or five highest priority items for standardization.

Next Meeting

SID in May in Los Angeles. Allen will investigate.

Summary of Action Items

>>Allen: look into ANSI, IEC, ISO, and SID to find groups active with AR and VR applicable standards.

>>Allen: contact SID about meeting space and time.

>>Everyone: think of people who might be involved in relevant standards. Send their names and contact info to Allen.

>>Everyone: start conversations in your organizations. Discuss prominent issues that need attention. Identify individuals who will be able to participate in the standards writing process.

>>Bernard Kress: identify four or five highest priority candidates for standardization. They can serve as a nucleus for a new standard's statement of scope.

ADJOURNED at 5:35pm

Tim Wong/Susan Kelly/100%.