

The IEEE Global Initiative on Ethics of Extended Reality
Industry Connections Activity Initiation Document (ICAID)

Version: 1.0, 19 August 2020

IC20-016-01 Approved by the IE&SS SMDC 8 October 2020

Instructions

- Instructions on how to fill out this form are shown in red. It is recommended to leave the instructions in the final document and simply add the requested information where indicated.
- **Shaded Text** indicates a placeholder that should be replaced with information specific to this ICAID, and the shading removed.
- Completed forms, in Word format, or any questions should be sent to the IEEE Standards Association (IEEE-SA) Industry Connections Committee (ICCom) Administrator at the following address: industryconnections@ieee.org.
- The version number above, along with the date, may be used by the submitter to distinguish successive updates of this document. A separate, unique Industry Connections (IC) Activity Number will be assigned when the document is submitted to the ICCom Administrator.

1. Contact

Provide the name and contact information of the primary contact person for this IC activity. Affiliation is any entity that provides the person financial or other substantive support, for which the person may feel an obligation. If necessary, a second/alternate contact person's information may also be provided.

Name: Monique Morrow

Email Address: monique.morrow223@gmail.com

Employer: Syniverse

Affiliation: Syniverse

2. Participation and Voting Model

Specify whether this activity will be entity-based (participants are entities, which may have multiple representatives, one-entity-one-vote), or individual-based (participants represent themselves, one-person-one-vote).

Individual Based.

3. Purpose

3.1 Motivation and Goal

Briefly explain the context and motivation for starting this IC activity, and the overall purpose or goal to be accomplished.

As an introduction regarding the need of this Initiative, the following is an excerpt from the chapter on Extended Reality in A/IS that is part of *Ethically Aligned Design*, First Edition:

Humans interpret the world through multiple lenses, determined by both culture and environment, which form the basis for human bias and deeply influence how people interpret their relationships and sense of self. The nature of these lenses and how reality is experienced has dramatically evolved with the introduction of digital technologies and easy access to information via the web. Our perspectives are profoundly influenced not only by the cultural values of a global population, but by the underlying tracking technologies fueling the economic underpinnings of the web.

The growing prevalence of augmented and virtual environments is set to extend our collective human cognizance. Our sense of physical identity, time, and agency will become subject to entirely new paradigms, where the gateways to these experiences might be controlled by interests other than that of ordinary citizens. The autonomous and intelligent systems (A/IS) backbone enabling real-time personalization of any end-users' Extended Reality (XR) world raises a host of ethical and philosophical questions about the collection, control, and exploitation of user data within these ecosystems. As these capabilities move from external headsets into much more subtle, integrated sensory enhancements (and embedded or implanted devices) the stakes can become perilous.

The goal of this Industry Connections group is to continue and proliferate the existing efforts of The IEEE Standards Association focused on the ethical issues related to Extended Reality as outlined in the Extended Reality Chapter of *Ethically Aligned Design* while inviting Working Group members from the multiple Standards Working Groups focused on augmented and virtual reality and the spatial web and additional subject matter experts from industry and policy to create white papers, workshops, and PARs related to this work to ensure these technologies move from "perilous" to "purposeful."

3.2 Related Work

Provide a brief comparison of this activity to existing, related efforts or standards of which you are aware (industry associations, consortia, standardization activities, etc.).

The Extended Reality in A/IS chapter featured in *Ethically Aligned Design* was released in June of 2020 and provides direct inspiration for the creation of this ICAID / Initiative.

As noted above, there are currently over forty IEEE Standards Working Groups related to Augmented Reality as outlined on this site. Yu Yuan (Chair, IEEE VR/AR Standards Committee; Chair, IEEE VR/AR Working Group (IEEE P2048 Standards); Chair, IEEE VR/AR Advisory Board) agrees there is a need and an opportunity to harness the expertise from any or all of these Working Groups to join this Initiative if it is formed so that industry and policy experts working in any field related to Extended Reality can benefit from the pragmatic driven focus on applied ethical issues that will decrease harm while increasing innovation and customer / citizen trust.

Executive Committee members being invited to join this Initiative include, among others, thought leaders like Voices of VR podcast host Kent Bye who has created an in-depth ethical framework regarding XR that deeply aligns with the work in *Ethically Aligned Design*. Members from the Extended Reality Committee like Mathana Stender have also proposed specific technology recommendations such as a Universal Escape Key that will be explored or highlighted as part of this work.

IEEE-SA and other IEEE representatives have also been present at major XR Industry events like Augmented World Expo where the work of this Initiative will be promoted if possible to grow IEEE's overall communities focused on AR, VR and the Spatial Web with an entirely new group of experts also focused on the applied ethical aspects of XR.

3.3 Previously Published Material

Provide a list of any known previously published material intended for inclusion in the proposed deliverables of this activity.

- The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems. *Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems*, First Edition. IEEE, 2019.
<https://standards.ieee.org/content/ieee-standards/en/industry->

connections/ec/ autonomous-systems.html - *Extended Reality in A/IS* Chapter accessible here:

https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/ead/EAD1e_extended_reality.pdf

- Slater M, Gonzalez-Liencre C, Haggard P, Vinkers C, Gregory-Clarke R, Jelley S, Watson Z, Breen G, Schwarz R, Steptoe W, Szostak D, Halan S, Fox D and Silver J (2020) *The Ethics of Realism in Virtual and Augmented Reality*. Front. Virtual Real. 1:1. doi: 10.3389/frvir.2020.00001
<https://www.frontiersin.org/articles/10.3389/frvir.2020.00001/full>
- Madary M and Metzinger TK (2016) *Real Virtuality: A Code of Ethical Conduct*. Recommendations for Good Scientific Practice and the Consumers of VR-Technology. Front. Robot. AI 3:3. doi: 10.3389/frobt.2016.00003
<https://www.frontiersin.org/articles/10.3389/frobt.2016.00003/full>
- Hosfelt, Diane (2019) *Making ethical decisions for the immersive web*. Pre-print <https://arxiv.org/abs/1905.06995>
- Bye, Kent (2019) *XR Ethical Manifesto*. Presentation at Greenlight's XR Strategy Conference in San Francisco, CA.
<https://www.youtube.com/watch?v=CXgY3YXxqJ8> &
<https://www.slideshare.net/kentbye/xr-ethics-manifesto-updated-nov-2-2019>
- Bar-Zeev, Avi (2019) *The Eyes Are the Prize: Eye-Tracking Technology Is Advertising's Holy Grail*. Vice,
https://www.vice.com/en_us/article/bj9ygv/the-eyes-are-the-prize-eye-tracking-technology-is-advertisings-holy-grail
- Bailenson J, Bye K, Rosedale P, Outlaw J (2018) *VR Privacy Summit Organizer Highlights & Next Steps*. Voices of VR Podcast.
<https://voicesofvr.com/718-vr-privacy-summit-organizer-highlights-next-steps/>

3.4 Potential Markets Served

Indicate the main beneficiaries of this work, and what the potential impact might be.

- XR Content Creators. XR content will come in many forms (immersive entertainment industry, “EdTech” content, business optimization, and many more), though standardized protocols and ethical best practices have yet to be formally developed at scale. XR content creators will benefit from the development of a community to understand and foster the creation of XR technology that helps to safeguard and improve human well-being within immersive environments. Creators will also get invited to create, utilize and update highly specific and contextual recommendations around ethical issues in their design and manufacturing processes that will not only protect their customers and value chain but increase innovation.
- Policy Makers. This Initiative encompasses a policy perspective for both the public and private sector through thought leadership and the production of resources such as model policies and legislation. As policy implementation at different levels of governance will be predicated upon varying degrees of existing regulatory frameworks, this Initiative will seek to delineate frameworks for policy makers to implement ‘minimum viable protections’ through XR-related policies.
- End Users / Citizens. The ultimate benefit of this initiative will be the end users and citizens of any and all immersive environments who largely may not have comprehended how deeply they will be affected by the growing influence of XR in every aspect of our lives. While this Initiative is not designed to mandate how people live their lives in these environments, the passionate goal of this work is to ensure they have utter disclosure, education and the technological and policy driven means to make agency driven choices for themselves and their families thrive in these brave new worlds.
- XR Hardware Manufactures & Content Platforms. Based on the fact this Initiative will be inviting a broad set of experts from multiple existing IEEE Standards Working Groups focused on XR issues, the deliverables from this Industry Connections group will be highly pragmatic and applicable in business settings versus only principle or ruminative based. As the implementations costs of regulatory compliance under the EU’s GDPR privacy legislation or Germany’s Network Enforcement Act (often referred to as the abbreviated ‘NetzdG’ or the “Facebook Act”) fall on businesses to ensure existing services meet the regulatory threshold of new legislation, this Initiative will provide a new forum to foster multidiscipline dialogue, create

proactive applied ethics and work to synthesize best practices around transparency.

- Likely-XR-adopting industries. The approach will assist industries that are seeking to adopt XR solutions for their respective workflows a way to 'get ahead' of situations that would cause harm to users and hurt a company's reputation based on issues they may not be equipped to handle without the information this Initiative will provide. As a new point of first-instance for industry associations, trade groups and other macro-level, international actors to engage with -and share- best practices of contextual on-the-ground experiences.
- Industries Deploying XR based solutions. As a number of industries will deploy XR products and services to enhance work flows, service delivery and product design, non-XR-specific industries have a stake in the egalitarian and ethical development of XR technologies. Remote training and tooling for industrial manufacturing, physician and health professionals, certified mental health practitioners,, teachers using immersive education in the classroom, and the entertainment industry are just a few of the litany of existing fields that will increasingly take on extended reality to augment workflows.

3.5 How will the activity benefit the IEEE?

This Initiative will further position IEEE as a key leader in the business and policy arenas regarding AR, VR, and the Spatial Web. It provides a natural step to bring together the technical experts already driving thought leadership in these arenas to come to consensus driven principles and applied policy recommendations that will enhance people's lives in immersive settings while ensuring all people have safe and holistically available access to their benefits.

This thought leadership will also translate directly into the pragmatic outcomes featured below (workshops, etc).

4. Estimated Timeframe

Indicate approximately how long you expect this activity to operate to achieve its proposed results (e.g., time to completion of all deliverables).

Expected Completion Date: 09/2022

IC activities are chartered for two years at a time. Activities are eligible for extension upon request and review by ICom and the IEEE-SA Standards Board. Should an extension be required, please notify the ICom Administrator prior to the two-year mark.

5. Proposed Deliverables

Outline the anticipated deliverables and output from this IC activity, such as documents (e.g., white papers, reports), proposals for standards, conferences and workshops, databases, computer code, etc., and indicate the expected timeframe for each.

- White Papers. Subject matter for white papers may include aspects of how Parents should guide their children regarding aspects of XR including identity, data, etc. Papers may also include discussions on time shifting and other benefits of XR that touch on applied ethics or values-driven design.
- Policy Recommendations. A goal here would be to convert any existing guidelines on XR Ethics for policy makers to expedite the design and proliferation of technologies that best inspire long-term human and ecological well-being in regards to the context of immersive realities. As policy implementation at different levels of governance will be predicated upon varying degrees of existing regulatory frameworks, this Initiative will seek to delineate frameworks for policy makers to implement 'minimum viable protections' through XR-related policies.
- Workshops. These may be with corporate, policy, or general citizen audiences as a way to best address specific issues focused on any of XR issues.
- PARs. It is expected that at least one standard or recommended practice will come from this group focused on the Ethics of XR.

Proposed Timeframe:

Based on feedback from the Executive Committee (members listed below along with initial Exec Comm once Initiative is formed), the following is a proposed timeframe for initial deliverables:

- **End of Q1, 2012:** Online webinar / workshop planned to partner XR industry leaders and AIS policy makers to determine what issues both groups feel are most pressing to address in regards to XR Ethics. Goal of content produced will be to inform both documents listed below and grow the overall community.

- **End of Q2, 2021:** Whitepaper focused on summarizing key Ethical Issues and initial recommendations on XR focused on corporate audiences to be released as a Request for Feedback designed to grow the Initiative membership / community.
- **End of Q2, 2021:** Short (under 15 page) document outlining, "Key Issues for Policymakers to consider regarding the Ethics of XR in AIS." This document will not contain formal policy recommendations but rather be written as an overall summarizing document to brief those in policy on key issues in AIS. Material from the whitepaper will be adapted for this work.
- **Beyond Q2, 2021:** TBD, based on the Exec Comm and other Initiative members.

5.1 Open Source Software Development

Indicate whether this IC Activity will develop or incorporate open source software in the deliverables. All contributions of open source software for use in Industry Connections activities shall be accompanied by an approved IEEE Contributor License Agreement (CLA) appropriate for the open source license under which the Work Product will be made available. CLAs, once accepted, are irrevocable.

Will the activity develop or incorporate open source software (either normatively or informatively) in the deliverables? Not expected.

6. Funding Requirements

Outline any contracted services or other expenses that are currently anticipated, beyond the basic support services provided to all IC activities. Indicate how those funds are expected to be obtained (e.g., through participant fees, sponsorships, government or other grants, etc.). Activities needing substantial funding may require additional reviews and approvals beyond ICom.

No, besides the standard support provided by IEEE Standards activities.

7. Management and Procedures

7.1 Activity Oversight Committee

Indicate whether an IEEE committee of some form (e.g., a Standards committee) has agreed to oversee this activity and its procedures.

Has an IEEE committee agreed to oversee this activity? Yes.

If yes, indicate the IEEE committee's name and its chair's contact information.

- IEEE Committee Name: IEEE VR/AR Standards Committee (CTS/VRARSC)
Chair's Name: [Yu Yuan](#)
Chair's Email Address: y.yuan@ieee.org
- IEEE Committee Name: IEEE SSIT Standards Committee
Chair's Name:
Chair's Email Address:
Vice-Chair: [Sara Jordan](#)
Vice-Chair's email Address: sjordan@fpf.org

Additional IEEE committee information, if any. Please indicate if you are including a letter of support from the IEEE Committee that will oversee this activity.

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Activity Oversight Committee and Activity officers who are responsible for IEEE work items.

7.2 Activity Management

If no Activity Oversight Committee has been identified in 7.1 above, indicate how this activity will manage itself on a day-to-day basis (e.g., executive committee, officers, etc).

An Executive Committee will be created, following the model of how The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems evolved.

7.3 Procedures

Indicate what documented procedures will be used to guide the operations of this activity; either (a) modified baseline *Industry Connections Activity Policies and Procedures*, (b) Standards Committee policies and procedures accepted by the IEEE-SA Standards Board, or (c) Working Group policies and procedures accepted by the Working Group's Standards Committee. If option (a) is chosen, then ICom review and approval of the P&P is required. If option (b) or (c) is chosen, then ICom approval of the use of the P&P is required.

Modified baseline *Industry Connections Activity Policies and Procedures*.

8. Participants

8.1 Stakeholder Communities

Indicate the stakeholder communities (the types of companies or other entities, or the different groups of individuals) that are expected to be interested in this IC activity, and will be invited to participate.

- Members of EAD’s Extended Reality Committee.
- Members of any / all IEEE Standards Working Groups focused on AR, VR, etc. (they’ll all be invited).
- SMEs from industry, policy, and sociology, therapy and anthropology environments to make sure to cover issues of mental health in immersive environments.

8.2 Expected Number of Participants

Indicate the approximate number of entities (if entity-based) or individuals (if individual-based) expected to be actively involved in this activity.

Minimum 30-40 individuals within twelve months of the first Executive Committee meeting.

8.3 Initial Participants

Provide a number of the entities or individuals that will be participating from the outset. It is recommended there be at least three initial participants for an entity-based activity, or five initial participants (each with a different affiliation) for an individual-based activity.

Use the following table for an entity-based activity:

Entity	Primary Contact	Additional Representatives
Entity Name	Contact Name	Name

Use the following table for an individual-based activity:

Individual	Comments	Employer	Affiliation
Monique Morrow	Chair	<u>Syniverse</u>	<u>Syniverse</u>
Mathana Stender		<u>Independent Ethicist</u>	<u>Self</u>
Yu Yuan		<u>OxSenses</u>	<u>Self</u>
Kent Bye		Voices of VR podcast	Self

Sara Jordan		<u>Future of Privacy Forum</u>	<u>SSIT Standards Committee Vice-Chair</u>
Beth-Anne Schuelke-Leech		<u>University of Windsor</u>	<u>SSIT Standards Committee Chair</u>