

Common User Profile for Personalization

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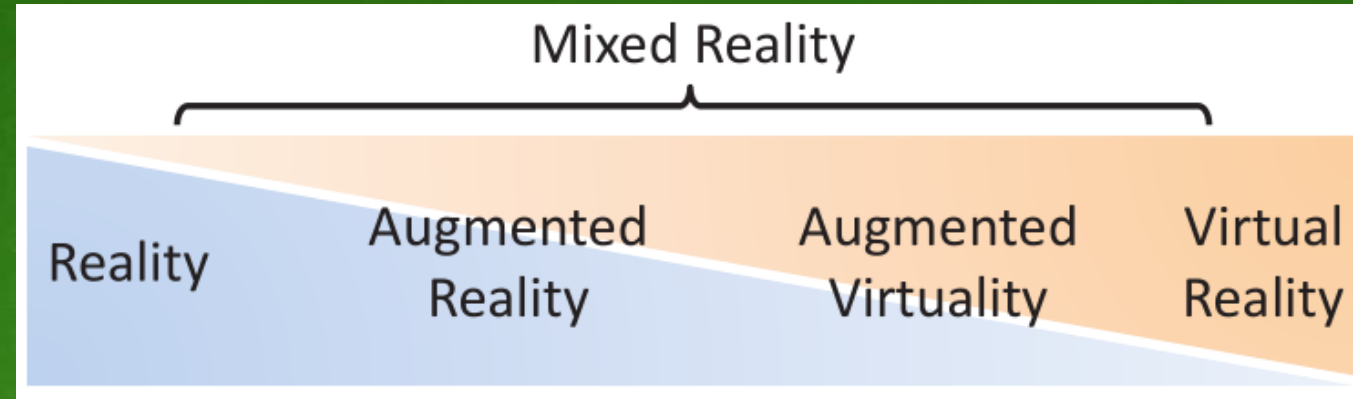
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Continuum of eXtended Reality

Augmented Reality

- Combines real and virtual
- Interactive in real time
- Registered in 3D



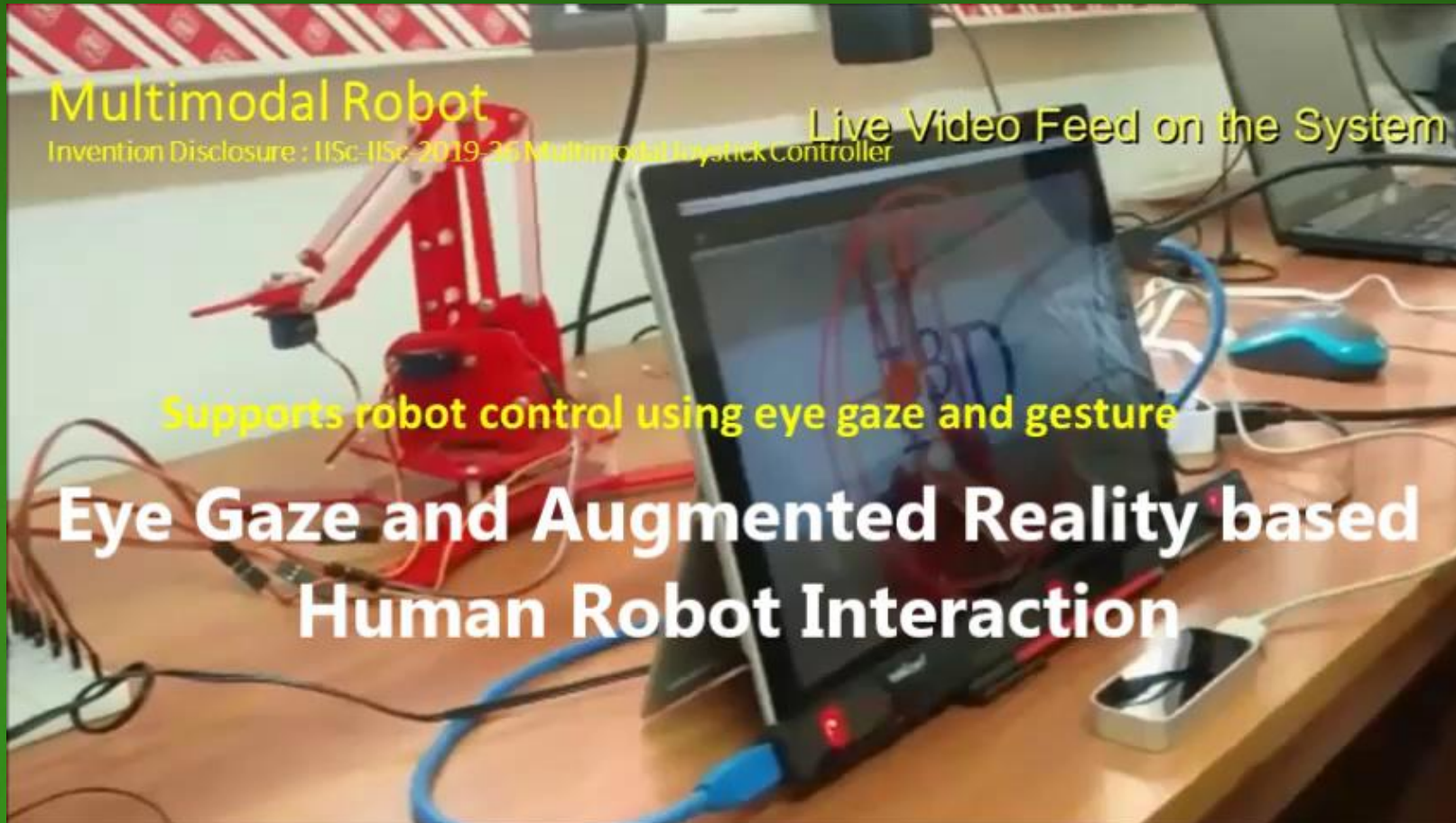
Virtual Reality

- Immersive
- Interactive
- Imaginative

ISO/IEC 18039:2019(E) defines Augmented Reality as “*type of mixed reality system in which virtual world data are embedded and/or registered with the representation of physical world data*” while Mixed Reality is defined as “*system that uses a mixture of representations of physical world data and virtual world data as its presentation medium*”.

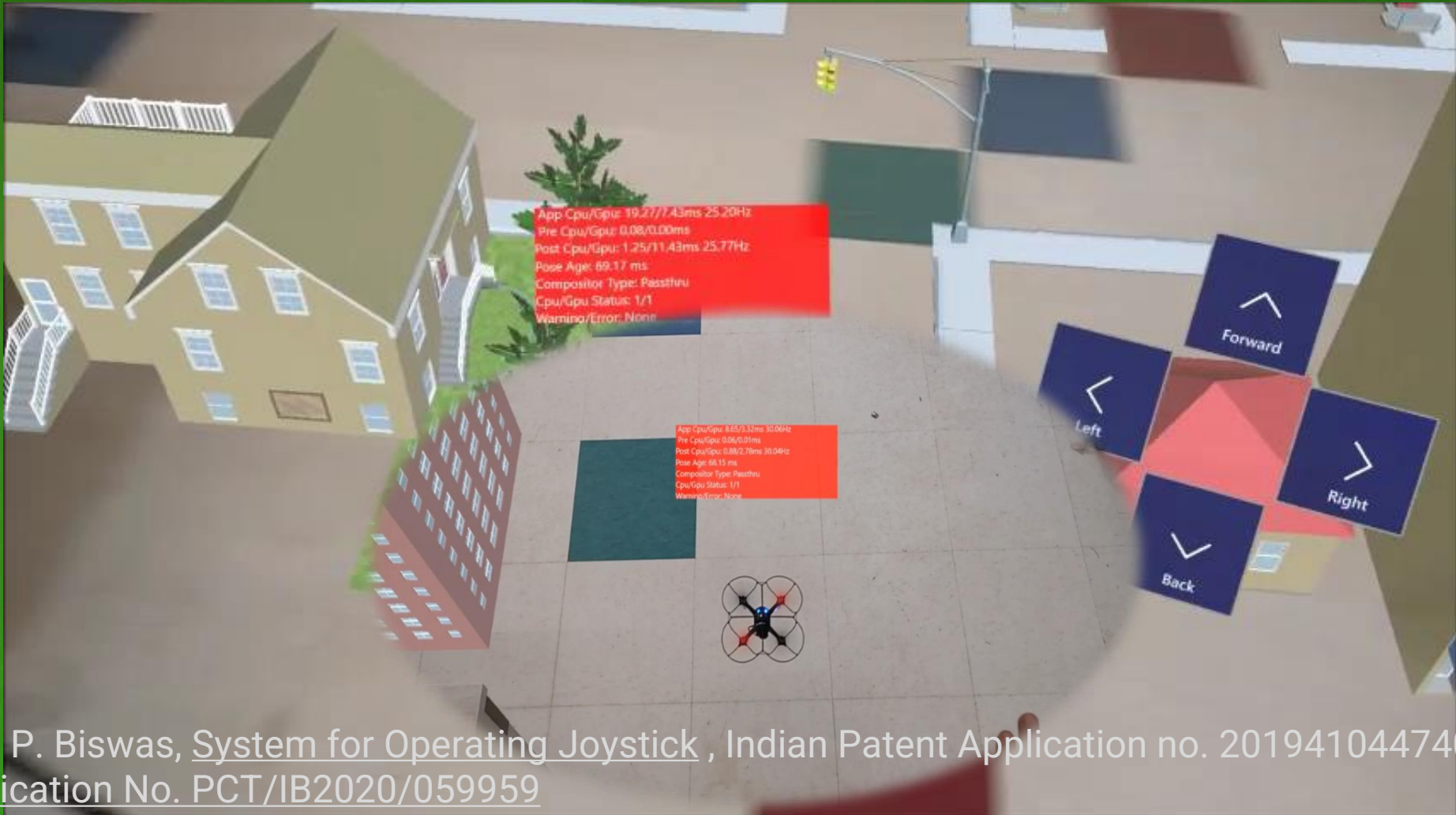
AR/VR for Accessibility

AV Media to Cyber Physical System



AR/VR for Accessibility

AV Media to Cyber Physical System



Personalized AR /VR

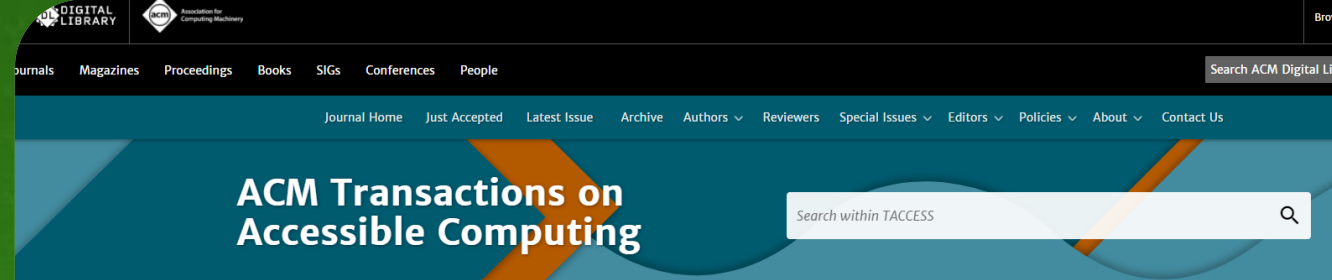
W18



Jerry - ASL Interpreter, Andy Quesada, Andrew Duchowski, Pradipta Biswas, Wendy Dannels, Emilene Zikus, Nick - ASL Interpreter, Peter Robinson, Pilar Orero, Sonali Rai, Deepack BK, Usri Nijhar Ganguly, Jofiah Kaye, Hao Tang, Priyam Rajkhowa, Dominik, Larry Goldberg, Manohar Swaminathan, Dani Deering, Aishwarya, Anasol Peña-Rios, Varnika Kairon, Christopher Patnoe, Jocelyn Gonzalez, Vimal Mohan

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Adaptive Accessible AR/VR Systems



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[2017-2020] - [SG9] - [Q11/9]

[Declared patent(s)]

Work item: J acc-us prof
Status: [Carried to next study period]
Approval process: AAP
Type of work item: Recommendation
Version: New
Provisional name: -
Equivalent number: -
Timing: -
Liaison: ITU-T SG16, ITU-R SG6, ITU-IRG-AWA, ISO/IEC 24756
Supporting members: India Institute of Science, 3GICT, Microsoft
Subject title: Common user profile format for audiovisual content distribution
Summary: A common user profile format for audio visual media including but not limited to Broadband and digital TV, computer and smart phone software and web-based audio visual systems. A user profile creation application will collect information from users and store it in a device and application independent way. For example, it will store information on font-size as minimum visual angle so that the appropriate font-size can automatically be calculated for any device like TV, smartphone, desktop computer and so on. The user can invoke the profile creation application anytime and can modify it.
Comment: -
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Contact(s): Pradipta Biswas, Editor
ITU-T A.5 reference(s): [Submit new A.5 reference] See guidelines for creating & submitting ITU-T A.5 justifications

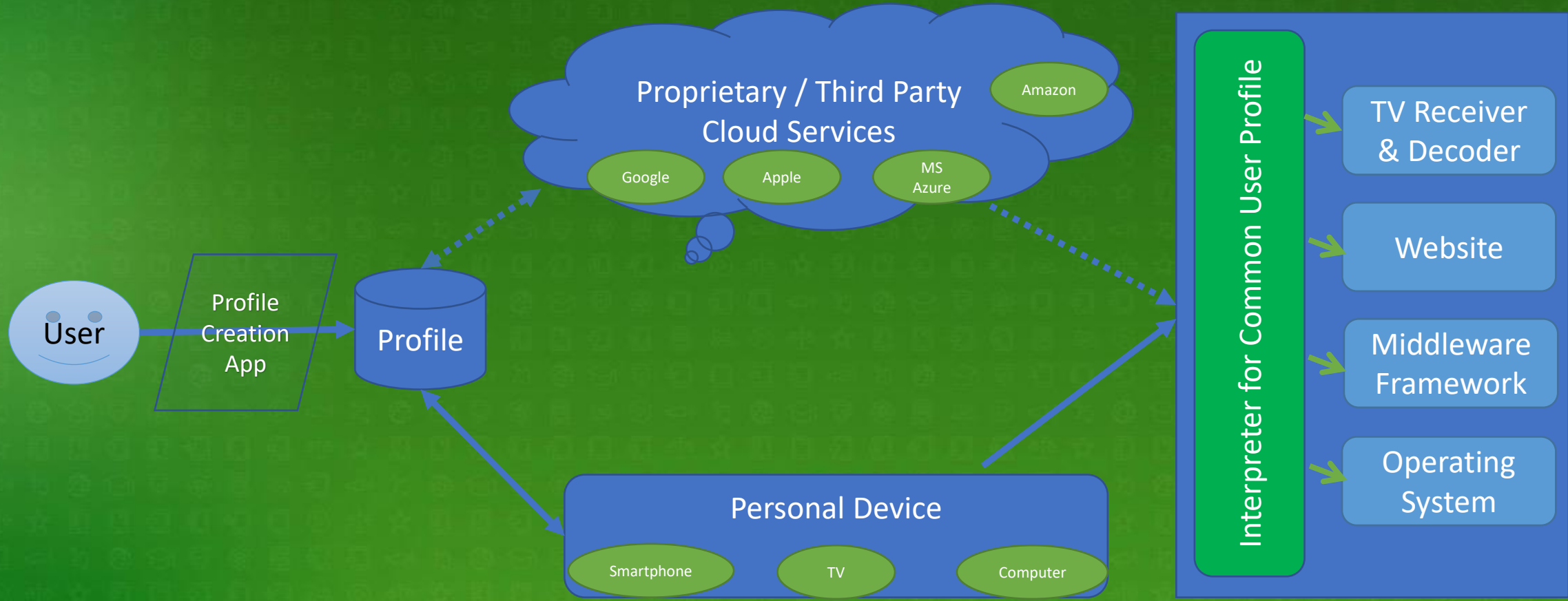
Past Special Issues

Special Issue on Adaptive Inclusive AR/VR Systems

- Guest Editors:
- Pradipta Biswas (Indian Institute of Science, India)
 - Pilar Orero (University of Barcelona, Spain)
 - Kavita Krishnaswamy (University of Maryland, Baltimore Country, USA)
 - Manohar Swaminathan (Microsoft Research, India)
 - Peter Robinson (University of Cambridge, UK)

In recent time, both artificial intelligent and interactive systems made tremendous progress. We can use AR and VR technologies in smartphones and can download software code to train complicated convolutional neural networks for face or any specific object detection. This special issue on Adaptive Accessible AR/VR Systems is planning to take a novel approach to bring these latest developments in computing technologies for users who often miss out advantages in information technology due to their limited range of abilities. Earlier research already explored use of AR/VR technologies for navigation and rehabilitation. In the present Covid-19 pandemic situation, online training and electronic learning platforms have become more important than ever. Teaching and learning of science can take a whole new dimension with AR /VR technologies. Immersive learning has proven to be very beneficial in the case of learning new languages, an area

Common User Profile Plan of Implementation



Security Aspects

- Format does not specify the physical or network media for storage
- Format does not specify any encryption algorithm or range (end-to-end vs others)
- Profile is stored anonymously
- Profile needs not to be stored on server, can only be stored on client side
- A mapping mechanism can be implemented to share only interface parameters and profile information can be stored on client machine only.
- However, a trusted source can also keep a common repository and use it to personalize applications across multiple platforms

Ways of Integration

Invoking a mapping application between users' range of abilities and interface parameters

- Executing at server side
- Executing at client machine

Modifying settings at

- Application level (e.g.: Android App)
 - Browser level (e.g.: Browser Plug-in)
 - Middleware level (e.g.: SetTop Box)
 - Operating System level (e.g.: new Accessibility feature of Windows / iOS / Android)
- Will not be a part of the recommendation



Main Challenges

User privacy, conformance to privacy related legislations

Acceptable variable nomenclature

Diverse range of AV media, applications and devices

Defining minimal set of variables