

## P2247.4

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**Submitter Email:** jad2234@tc.columbia.edu

**Type of Project:** New IEEE Standard

**Project Request Type:** Initiation / New

**PAR Request Date:** 13 Aug 2020

**PAR Approval Date:** 23 Sep 2020

**PAR Expiration Date:** 31 Dec 2024

**PAR Status:** Active

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**1.1 Project Number:** P2247.4

**1.2 Type of Document:** Recommended Practice

**1.3 Life Cycle:** Full Use

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**2.1 Project Title:** Recommended Practice for Ethically Aligned Design of Artificial Intelligence (AI) in Adaptive Instructional Systems

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**3.1 Working Group:** Adaptive Instructional Systems(C/LT/AIS)

**3.1.1 Contact Information for Working Group Chair:**

**Name:** Andrew Hampton

**Email Address:** andrew.hampton@memphis.edu

**3.1.2 Contact Information for Working Group Vice Chair:**

None

**3.2 Society and Committee:** IEEE Computer Society/Learning Technology(C/LT)

**3.2.1 Contact Information for Standards Committee Chair:**

**Name:** Richard Tong

**Email Address:** richard@yixue.us

**3.2.2 Contact Information for Standards Committee Vice Chair:**

**Name:** James Goodell

**Email Address:** jgoodell2@yahoo.com

**3.2.3 Contact Information for Standards Representative:**

None

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**4.1 Type of Ballot:** Individual

**4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:** Sep 2022

**4.3 Projected Completion Date for Submittal to RevCom:** Mar 2023

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 10

**5.2 Scope of proposed standard:** This recommended practice describes ethical considerations and recommended best practices in the design of artificial intelligence as used by adaptive instructional systems. The ethical considerations derived from P2247.1, Standard for the Classification of Adaptive Instructional Systems is directly related to:

P2247.1 Standard for the Classification of Adaptive Instructional Systems

P2247.2 Interoperability Standards for Adaptive Instructional Systems (AISs)

P2247.3 Recommended Practices for Evaluation of Adaptive Instructional Systems

**5.3 Is the completion of this standard contingent upon the completion of another standard?** No

**5.4 Purpose:** This recommended practice provides guidance in ethical design to the designers and consumers of adaptive instructional systems.

**5.5 Need for the Project:** AIS, which include "Intelligent Tutoring Systems" (ITS), have been established as effective training and education systems and have been deployed in commercial and open source versions. They have the potential to significantly improve learning effectiveness across many sectors of training and education and are starting to proliferate and move from self-contained desktop software to AI-enabled cloud-based systems. This has created two market needs: One for transparency concerning the operation, features, functionality, and use of AI in these systems for the benefit of consumers, and one for the interoperable exchange of data with other learning and enterprise systems. This standard meets these

needs by providing standardized ethical design considerations and a framework for evaluating the ethical design of AIS.

**5.6 Stakeholders for the Standard:** Stakeholders include the entire learning, education, and training supply chain. This includes developers, vendors, and consumers of tools and technology used to author, publish, deliver, store, and analyze digital content and data related to learning, education, and training. Stakeholders include corporate, academic, and government training organizations, institutions that provide formal and informal education, the publishers that provide content to them, and learning management systems, learning record stores, learning experience platforms, and related vendors.

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## **6.1 Intellectual Property**

**6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?**

No

**6.1.2 Is the Standards Committee aware of possible registration activity related to this project?**

No

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## **7.1 Are there other standards or projects with a similar scope? Yes**

**Explanation:** 2247.4 represents the ethical dimension of the 2247 suite as relates to AI, and will refer to the IEEE P7000 series of standards that address specific issues at the intersection of technological and ethical considerations, including: RAS/SC/EDRA/7007; RAS/SC/Ethical Nudging, P7008; C/LT – Learning Technology, P7004.1

**7.1.1 Standards Committee Organization:** LTSC

**Project/Standard Number:** P7007

**Project/Standard Date:**

**Project/Standard Title:** Ontologies for Ethically Driven Robotics and Automation

**7.1.2 Standards Committee Organization:** RAS/SC

**Project/Standard Number:** P7008

**Project/Standard Date:**

**Project/Standard Title:** Ethically Driven Nudging for Robotic Intelligent and Autonomous Systems

**7.1.3 Standards Committee Organization:** C/LT

**Project/Standard Number:** P7004.1

**Project/Standard Date:**

**Project/Standard Title:** Recommended Practices for Virtual Classroom, Security, Privacy and Data Governance

**7.2 Is it the intent to develop this document jointly with another organization? No**

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## **8.1 Additional Explanatory Notes :**