P2807.15

Type of Project: New IEEE Standard
Project Request Type: Initiation / New
PAR Request Date: 23 Jul 2025
PAR Approval Date: 10 Sep 2025
PAR Expiration Date: 31 Dec 2029
PAR Status: Active

1.1 Project Number: P2807.15
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Project Title: Standard for Collaborative-Computing-Network-Oriented Knowledge Graph

3.1 Working Group: Collaborative Computing Knowledge Graph(C/KESC/CCKG)
3.1.1 Contact Information for Working Group Chair:
Name: Fan Yang
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3.1.2 Contact Information for Working Group Vice Chair:
None
3.2 Society and Committee: IEEE Computer Society/Knowledge Engineering Standards Committee(C/KESC)
3.2.1 Contact Information for Standards Committee Chair:
Name: Ruiqi Li
Email Address: lirq@cesi.cn
3.2.2 Contact Information for Standards Committee Vice Chair:
None
3.2.3 Contact Information for Standards Representative:
None

4.1 Type of Ballot: Entity
4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Nov 2027
4.3 Projected Completion Date for Submittal to RevCom: Jun 2028

5.1 Approximate number of entities expected to be actively involved in the development of this project: 7
5.2 Scope of proposed standard: This standard specifies the dynamic knowledge graph construction process and application framework for collaborative computing networks. It covers entity and relation modeling requirements, representation and storage requirements for dynamic attributes, knowledge acquisition requirements, knowledge application service interface requirements. In addition, it provides knowledge reasoning methods for collaborative computing management and optimization.

5.3 Is the completion of this standard contingent upon the completion of another standard? No
5.4 Purpose: This document will not include a purpose clause.
5.5 Need for the Project: Collaborative computing networks lack a universal modeling framework, which is manifested in disparate approaches across scenarios, inconsistent constraint representation, and inadequate analysis of complex entity relationships. These issues result in poor generality of related research and hinder achievement of optimality. This standard establishes a unified dynamic knowledge graph framework and related requirements that can:☐
a) Standardize functional abstraction of devices, tasks and resources for cross-scenario model reuse;☐
b) Enhance structural modeling of heterogeneous entity interactions to address gaps in constraint and dependency analysis;☐
c) Enable knowledge graph-driven management and optimization of collaborative computing networks with improved operational efficiency and adaptability.
5.6 Stakeholders for the Standard: Smart Device Manufacturers, Collaborative Computing Network Management Software Developers, Collaborative Computing Network Solution Integrators & Implementers, Management & Optimization Policy Makers, Industry Users of Collaborative Computing Network .

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? No

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

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8.1 Additional Explanatory Notes: