

# P7130

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**Submitter Email:** [whurley@ieee.org](mailto:whurley@ieee.org)

**Type of Project:** Modify Existing Approved PAR

**PAR Request Date:** 18-Apr-2019

**PAR Approval Date:** 13-Jun-2019

**PAR Expiration Date:** 31-Dec-2021

**Status:** Modification to a Previously Approved PAR

**Root PAR:** P7130 **Approved on:** 15-Jun-2017

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**1.1 Project Number:** P7130

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Standard for Quantum Technologies Definitions

**Changes in title:** Standard for Quantum ~~Computing~~ Technologies Definitions

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**3.1 Working Group:** Quantum Computing Nomenclature Working Group (BOG/CAG/QCN-WG)

**Contact Information for Working Group Chair**

**Name:** William Hurley

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**Contact Information for Working Group Vice-Chair**

None

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**3.2 Sponsoring Society and Committee:** IEEE-SA Board of Governors/Corporate Advisory Group (BOG/CAG)

**Contact Information for Sponsor Chair**

**Name:** Charles Simpson

**Email Address:** [rsimpson@gmail.com](mailto:rsimpson@gmail.com)

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**Contact Information for Standards Representative**

None

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**4.1 Type of Ballot:** Entity

**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 07/2019

**4.3 Projected Completion Date for Submittal to RevCom**

**Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 02/2020**

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

**5.2 Scope:** This standard addresses quantum technologies specific terminology and establishes definitions necessary to facilitate clarity of understanding to enable compatibility and interoperability.

**Changes in scope:** This standard addresses quantum ~~computing~~ technologies specific terminology and establishes definitions necessary to facilitate ~~communication~~ clarity of understanding to enable compatibility and interoperability.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** The purpose of this project is to provide a general nomenclature for quantum technologies that may be used to standardize hardware and software terminology.

**Changes in purpose:** The purpose of this project is to provide a general nomenclature for ~~Quantum~~ quantum ~~Computing~~ technologies that may be used to standardize ~~communication with related hardware~~ and software ~~projects~~ terminology.

**5.5 Need for the Project:** Currently there is a need for standardization of nomenclature related to quantum technologies as the emerging industry is fragmented and lacks a common communications framework. This project will also make quantum technologies more accessible to a larger group of contributors including developers of software and hardware, materials scientists, mathematicians, physicists, and end users of quantum technologies solutions including engineers, discrete mathematicians, physicists, climate scientists, biologists and geneticists.

The definitions would include terms related to the physics of quantum technologies including quantum tunneling, super position, quantum entanglement as well as the hardware specific terminology including terms related to superconducting quantum computing, trapped ion quantum, optical lattices, nuclear magnetic resonance on molecules in solution (liquid-state NMR), Bose-Einstein condensate-based quantum computer, etc.

**5.6 Stakeholders for the Standard:** Hardware and software manufactures, universities, national labs, and research and development organizations.

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**Intellectual Property**

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No

**6.1.b. Is the Sponsor 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 Joint Development**

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

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**8.1 Additional Explanatory Notes:** This PAR is being modified per the recommendation of the working group. The goal is to have one standard for "quantum technologies" under which .1 (ex) standards can be written for specific areas such as quantum computing, quantum sensors, etc. This will be a far better organization method for not only the original standard proposed but all quantum technology standards.