

**CENTER FOR QUANTUM NETWORKS
INDUSTRIAL PARTNERS PROGRAM
AGREEMENT**

This Industrial Partners Program Agreement (hereinafter called "Agreement") is made on this _____ day of _____, (the "Effective Date") by and between the Arizona Board of Regents on behalf of the University of Arizona (hereinafter called "UArizona"), and _____ (hereinafter called "Member"); collectively, the "Parties."

WHEREAS, the Parties to this Agreement intend to join together in a cooperative effort to support the Center for Quantum Networks (hereinafter called "CQN" or the "Center") at UArizona to establish a mechanism whereby the educational and research environment can be used to develop better understanding of quantum communication networks and stimulate industrial innovation;

AND WHEREAS, this program will strengthen CQN's and Member's technological and service capabilities;

NOW, THEREFORE, for the mutual premises and covenants contained herein, the Parties hereto agree as follows:

1. *Operation.* UArizona agrees that the personnel and facilities required for the CQN will be available for research, education and service to fulfill the purpose of this Agreement. CQN shall be operated by UArizona under the leadership of a Director. CQN will consist of various private and public sponsoring organizations, including Members, the National Science Foundation (hereinafter called "NSF"), Core Academic Partners (defined below), and UArizona.
2. *Definitions.*
 - a. *Award Work.* "Award Work" means any work or activity performed by a CQN University pursuant to and solely or partially funded by NSF award No. 1941583.
 - b. *CQN Funds.* All educational, research, and other programs and administrative activity of CQN will be conducted with pooled resources with contributions from Members, and other sources, including Award Work, as long as expenditures from these pools are deemed appropriate for the establishment and operation of the CQN. These pooled resources will be deemed "CQN Funds."
 - c. *Third Party Funding.* "Third Party Funding" means funding other than CQN Funds, including other funding from NSF that is not the Award.
 - d. *CQN Research.* Research programs solely or partially funded from CQN Funds shall be deemed "CQN Research."
 - e. *Core Academic Partners.* UArizona, on behalf of CQN, has put into place an Intellectual Property Management Plan agreement ("IPMP") with Harvard

University, Yale University, and Massachusetts Institute of Technology (herein called “Core Academic Partners,” and collectively with UArizona called “CQN Universities”) to assure that the rights and obligations of Member apply to all CQN Universities.

3. *IPP Objectives.* CQN's Industrial Partners Program (hereinafter called “CQNIPP” or “IPP”) has been created to establish partnerships with companies or other entities which may promote CQN’s mission. IPP members are expected to play an important role in the research, education, technology transfer, and innovation goals of CQN including creating and demonstrating the scientific and technological feasibility of innovative methodologies and systems governing quantum communication networks, assisting in the transfer of research discoveries and observations from university to industry and vice versa, and developing an interdisciplinary education program.
 - a. *Eligibility.* Any corporation, company, partnership, sole proprietorship, or any other legally recognized business entity, or any agency of government, government office, or government organization duly authorized by the United States Government or government of any State or Nation may become a Member of the IPP.
 - b. *Affiliates.* The rights and obligations of Member under this Agreement shall extend only to Member’s Affiliates. For purposes of this Agreement, an Affiliate is any entity, individual, firm, or corporation, directly or indirectly, through one or more intermediaries, controlling, controlled by, or under common control with the Member.
 - c. *Member Commitment.* Because research of the type undertaken by the Center takes time and research results may not be obvious immediately, prospective Members should join the Center with the intention of remaining a fee-paying Member for at least three (3) years.
4. *Member Contributions.* Member participation in the IPP requires annual cash fees and/or in-kind contributions as defined below. In addition, appropriate interactions with CQN administration and researchers to help CQN accomplish its mission are required. The interaction with CQN may include visits to the Center by the Member representatives, visits to the Member’s facilities by faculty and students, and discussions at professional society meetings or conferences. IPP Members, during visits to CQN, can work on mutually agreed upon sponsored research projects under separate agreements, mentor students, learn specialized techniques, and give special seminars. It is expected that during their visits, Members will develop strong interactions with CQN researchers.
5. *Member Duties.* Required Member duties include:
 - a. Meeting a minimum of twice a year (nominally 1 on-site/1 virtual; public health considerations permitting)
 - b. Contributing to a technology market forecast and presenting it to the NSF site visit team;
 - c. Reviewing progress on CQN Research as outlined in Section 10;
 - d. Providing input on CQN strategic plans;

- e. Providing feedback on proposed project plans;
- f. Providing feedback and input on workforce development requirements;
- g. Providing input/guidance on regulatory issues/challenges/opportunities.

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6. *Membership Levels.* IPP Members will be afforded the following benefits through annual memberships:

IPP Membership Level	Bronze	Silver	Gold	Diamond
Annual Contribution: (before discounts as outlined in Section 9 below)	In-Kind *	\$10,000	\$40,000	\$150,000
Research Findings: Pre-publication access to research findings (subject to confidentiality), and industry trends for R&D technology transfer, policy, and environmental aspects through biennial meetings, webinars, and quarterly newsletters.	X	X	X	X
Collaboration: Invitation to attend technical reviews, Innovation Ecosystem meetings, and to interact with CQN management and research teams.	X		X	X
Advisory Board: Membership on the Industrial Advisory Board (IAB).	observer	observer	1 seat	2 seats
Facilities: Access to CQN facilities and instrumentation in the CQN as part of CQN Research.			X	X
Seminars: On-location short courses to be provided by CQN at fees to be negotiated between CQN and Member to cover costs.			X	X
Recruiting: Early access to CQN recruitment events for industry-ready undergraduates, graduate students, and post-doctoral researchers.	X		X	X
Sponsored Research: Sponsor individual research projects on commercially attractive topics under separate agreements. Ability to collaborate with CQN faculty on joint proposals for CQN-related research. Costs to be determined based on scope of projects.			X	X
Customized Research Opportunities: To be defined with faculty as outlined in Section 10 below.				X
Intellectual Property (IP): An upfront grant of an internal R&D license to IP developed by CQN, as outlined in Section 13 below.				X
Patent Costs: Portion of patent costs for licensed IP to be reimbursed from membership fee, as outlined in Section 13 below.				X
IP Licensing: Priority notification of IP filings, and option to negotiate for co-exclusive rights, as outlined in Section 13 below.				X

* Eligibility for Bronze membership is defined in Section 9(d) below.

7. *Diamond Members.* Members whose payments are current at the Diamond level will be referred to as “Diamond Members,” “Partner-Level Members,” or “Partners” hereinafter.
- a. *University Spinouts.* For the first five years of the Center’s operation, companies who are spinouts based on research licensed from CQN University/ies shall be eligible for membership at the Diamond level by making annual contributions at the Silver or Gold rate, and shall receive all benefits of Diamond Membership, except the right to vote at Advisory Board Meetings.
8. *Membership Fees.* Membership fees as outlined in Section 6 shall be paid annually, with the first payment being due within thirty (30) days of the execution of the Agreement. Initial membership terms will start on the date of the execution of this Agreement and will extend through December 31, 2021. Subsequent membership terms shall be annual, starting on the first day of January of 2022, then renewing automatically on the first day of January thereafter, provided the membership fee is received prior to the start of the membership term. Members will be invoiced for their annual membership fee ninety (90) days prior to the end of each membership year. Member agrees to pay the invoice on or before the start of a new membership year. Membership fees are non-refundable and become CQN Funds.
- a. *Pro-Rata Payments.* Members joining after July 1 of 2021 or July 1 of any subsequent year may have their fee pro-rated for the remainder of that calendar year.
 - b. *Late Payments.* In the event that a membership fee is not received prior to the start of an annual membership year, Gold and Diamond Members shall be reduced to the status of Silver Members until the payment is received. Gold and Diamond status and membership benefits, including IP rights, do not resume until the date on which the late payment is received.
 - c. *In-Kind Payments.* Members may substitute in-kind payments, in full or in part, at the discretion of the CQN Director.

Checks shall be made payable to the University of Arizona. Checks shall not be made payable to any individual(s).

Checks shall be mailed to:

U.S. Mail Payment Address	Express Mail Payment Address
University of Arizona Sponsored Projects & Contracting Services P.O. Box 41867 Tucson AZ 85717	University of Arizona Sponsored Projects & Contracting Services 2100 Speedway Blvd. #41867 Tucson AZ 85719

9. *Discounts and Credits.* Discounts and credits to the membership contributions are as follows. Discounts may be concatenated.
- a. *Founding Member Discount.* Annual contributions for Founding Members (see Appendix A) of CQN will be discounted 20% for the first five years of the Center's operation.
 - b. *Small Business Concern Discount.* Annual contributions for any level of membership for any company meeting the NSF criteria as a Small Business Concern will be discounted 75% for the first five years of the Center's operation.
 - c. *Licensing Credit.* In the event that a Member licenses technology from CQN University/ies, the first \$10,000 of any licensing fee may be used as a credit toward that Member's annual contribution for that calendar year or the subsequent calendar year.
 - d. *Bronze Membership.* Bronze membership is designed for government agencies, national laboratories, FFRDCs, not-for-profit organizations, venture capital firms, and other entities for whom a monetary membership fee is not appropriate. Bronze members are admitted solely at the discretion of the Center Director, and will typically qualify under one of the NSF definitions below:
 1. *Innovation Partner:* An organization that participates in the ERC with a mission to stimulate entrepreneurship and innovation. Innovation Partners do not provide financial support to the ERC.
 2. *Contributing Organization:* An organization that provides non-project-specific support to the ERC through grants, equipment, or other real donations but does not satisfy all criteria for full membership or affiliate membership.
10. *CQN Research.*
- a. *Core Research.* CQN University faculty, research staff, and graduate students will define core areas of research consistent with the Center's mission. Decisions on allocating all resources, including CQN Funds, will be made by the Director and his or her internal staff and advisors.
 - b. *Customized Research Opportunities.* Each year, CQN University faculty, research staff, and graduate students will also propose targeted research projects which are expected to be achievable with a modest amount of time and resources (approximately \$50,000 for a one-year term). Each Diamond Member will be able to designate one of these projects per year to be funded as CQN Research.
 - c. *Sponsored Research.* Nothing in this Agreement shall limit the ability of any Member to enter into separate sponsored research agreements with any CQN University, with separate intellectual property terms for non-CQN Research.

11. *Renewals and Termination.* This Agreement shall renew annually, unless a Party terminates by providing the other Party with written notice before October 1 of the membership year. Members may choose to renew at a higher or lower membership level by providing CQN with written notice before October 1 of the membership year. Membership levels may be adjusted if the membership fee for the succeeding year is not received according to the timeline in Section 8. This Agreement is subject to termination under Arizona Revised Statutes section 38-511 regarding conflict of interest on the part of individuals negotiating agreements on behalf of the State of Arizona. All notices shall be in writing and addressed to Member's stated address. This agreement expires ten (10) years after the Effective Date.
12. *Applicable Laws.* The organization and operation of the CQN shall be in accordance with existing procedures established by UArizona and all applicable State and Federal laws.
13. *Intellectual Property and Publication.* Any inventions, discoveries, methods, algorithms, software, data and processes, whether or not patentable or copyrightable, discovered and developed, reduced to practice and/or generated in the performance of CQN Research ("CQN Intellectual Property" or "CQN IP") shall be categorized as (i) "Sole CQN Funded IP" solely funded by CQN Funds, or (ii) "Partially-Funded CQN IP" intellectual property funded by CQN Funds and any third-party funding. The following will apply to CQN IP:
 - a. *Ownership of Intellectual Property.*
 1. Each CQN University solely owns any CQN IP invented or authored solely by its personnel. CQN Universities jointly own any CQN IP invented or authored jointly by their respective personnel.
 2. CQN Universities and Members jointly own CQN IP invented or authored jointly by their respective personnel from one or more CQN Universities and one or more Members.
 3. Inventorship and authorship of all intellectual property will be determined in accordance with United States intellectual property laws.
 - b. *Invention Disclosure by CQN Universities to Members.* CQN University researchers are required to promptly submit invention disclosures describing CQN IP they create ("CQN Disclosure") to their respective CQN University. Within thirty (30) days receipt of a CQN Disclosure by the tech transfer office of the respective CQN University, the CQN University will provide a copy of such invention disclosure to all Diamond Members with memberships active as of the date of such invention disclosure for their review through the CQN secure web site. Such CQN Disclosure will be considered Confidential Information of the CQN University. The CQN University will not offer licenses or options to Gold, Silver, or non-members of CQN for a period of 90 days following the date of disclosure of CQN IP to Diamond Members.

- c. *Rights of Diamond Members for Non-Exclusive, Royalty Free Internal Research Use Only License.* Diamond Members shall be granted a non-exclusive, royalty-free, non-sublicenseable, internal research use only, non-commercial license to CQN IP solely for their internal research purposes. Such license may not be assigned or sublicensed.
- d. *Rights of Diamond Members for Negotiation of Commercial License to CQN IP.*
 - 1. *Sole CQN IP.* Diamond Members may elect in writing, an option to negotiate for a non-exclusive, or co-exclusive for all fields, or co-exclusive for a defined field of use, royalty-bearing license (“Commercial License”) for Sole CQN IP within 90 days receipt of the invention disclosure (“Option Period”). Any such Commercial License will be subject to a royalty-bearing license agreement to be negotiated within 90 days of the election of the option (“Negotiation Period”) with the appropriate CQN University. Co-exclusive licenses will be available only to other Diamond Members during the Option Period. If a Diamond Member fails to exercise the option within the Option Period, or if the parties do not reasonably agree on terms for a Commercial License within the Negotiation Period, the CQN University will have no further obligation to that Diamond Member with the respect to a Commercial License to that Sole CQN IP.
 - 2. *Partially-funded CQN IP.* Diamond Members may elect an option to negotiate on similar terms for a Commercial License for Partially-funded CQN IP to the extent rights to such intellectual property are not otherwise obligated to third parties.
- e. *Sublicense to Subsidiary(ies).* All Commercial Licenses granted in accordance with this provision shall include the right for Diamond Members to sublicense to its Affiliates in accordance with any and all applicable State or Federal laws and/or statutes.
- f. *Reservation of Rights.*
 - 1. *Research and Educational Use.* CQN Universities retain the right on behalf of themselves and all other non-profit research institutions to practice under the patent rights solely for research, teaching, and educational purposes.
 - 2. *Federal Government.* Member acknowledges that the U.S. Federal government retains a royalty-free, non-exclusive, non-transferable license to practice any government-funded invention claimed in any patent rights as set forth in 35 U.S.C. §§ 201-211, and the regulations promulgated thereunder, as amended, or any successor statutes or regulations.

- g. *Reasonable Commercialization Efforts.* Because of the public interest that pervades CQN Universities research programs, any license entered into by CQN Universities will embody a clause permitting cancellations thereof if reasonable commercial use of the licensed invention or copyrighted material is not being made or diligently attempted by the licensee.
 - h. *Publication of Research Results.* Publication of CQN created research results is of fundamental importance to universities, faculty members and their research programs. Therefore, CQN Universities reserve the right to publish in scientific journals the results of CQN Research (excluding Member Confidential Information), giving due consideration to scheduling such publications in order to allow time for obtaining appropriate patent or copyright protection for CQN IP that might result from the research.
 - i. *Patent Cost Reimbursements.* In the event that Diamond Members enter into Commercial Licenses, CQN will reimburse the relevant CQN University/ies for the first \$5000 of provisional and/or non-provisional patent costs from CQN Funds. If the intellectual property is licensed by other Members or by non-members, recovery of all patent costs are the responsibility of the licensing CQN University/ies.
- 14. *Equal Opportunity/Non-Discrimination.* The Parties agree to comply with all applicable State and Federal laws and/or rules concerning equal opportunity and non-discrimination.
- 15. *Name and Marks.* A Party shall not, and shall ensure that its affiliates shall not, use or register the name the other Party, a CQN University, CQN, or any logos, seals, insignia or other words, names, symbols or devices that identify the other Party, a CQN University, or CQN, or any units or affiliates, for any purpose except with the prior written approval of, and in accordance with restrictions required by the other Party, CQN University, or CQN, as the case may be. Notwithstanding the foregoing, Member hereby grants CQN the right to use Member's name and/or logo for the sole purpose of indicating that the Member is a member of CQN.
- 16. *Public Statements.* The Parties will agree in writing prior to releasing any press release or other public statement relating to the subject matter of the Center.
- 17. *Independent Contractor.* The relationship between Member and UArizona shall be that of independent contractor. As an independent contractor, Member assumes all risk and liability for injury to persons or damage to property caused by acts of its employees during the period of the Agreement while they are using facilities or equipment owned and/or controlled by UArizona. This Agreement shall not constitute either UArizona or CQN as agents or legal representatives of Member. UArizona assumes all risk and liability for injury to persons or damage to property occurring during the period of the Agreement and caused by the acts of its employees while performing work at Member's facility under the terms of this Agreement. The obligations of UArizona hereunder shall not apply to liability arising from use of information furnished pursuant to this Agreement.

18. *Confidentiality.* Members and CQN Universities may choose, from time to time, in connection with the Center projects or research, to disclose confidential information to each other, which shall include CQN Universities' pre-publication results ("Confidential Information"). All such disclosures must be in writing and marked as Confidential Information. Any information that is transmitted orally or visually, in order to be protected hereunder, will be identified as such by the disclosing party at the time of disclosure, and identified in writing to the receiving Party, as Confidential Information, within thirty (30) days after such oral or visual disclosure.

The Parties will use reasonable efforts to prevent the disclosure to unauthorized third parties of any Confidential Information of the other Party and will use such information only for the purposes of this Agreement. Confidentiality obligations with respect to Confidential Information will survive for three (3) years after the termination of this Agreement

Notwithstanding any marking or designation to the contrary, the confidentiality obligations set forth herein will not apply to information that: (a) is already in the receiving Party's possession at the time of disclosure; (b) is or later becomes part of the public domain through no fault of the receiving Party; (c) is received from a third party with no duty of confidentiality to the disclosing Party; (d) was developed independently by the receiving Party prior to disclosure; or (e) is required to be disclosed by law or regulation.

19. *Complete Agreement.* The provisions contained herein constitute the entire Agreement and supersede all previous communications or representations, either verbal or written, between the Parties hereto with respect to the subject material hereof. This Agreement may not be changed, altered, or supplemented except by written amendment hereto, signed by all parties. It is further agreed that nothing contained in the Agreement shall modify, amend, or supersede any prior or subsequent arrangement between Member and UArizona with respect to activities outside the scope of this Agreement.
20. *Indemnification.* To the extent allowable by authorized law, Member agrees to and does hereby indemnify, hold harmless, and save from liability CQN Universities, their governing boards, officers, agents, students, and employees, from and against any and all claims, demands, and actions arising out of or relating to Member's commercial use of reports, information, or CQN IP licensed to Member, provided, however, that any such liability, loss, or damage resulting from the following are excluded from this agreement to indemnify and hold harmless: (a) any CQN University's failure to comply with any applicable government requirements; or (b) CQN University's breach of confidentiality; or (c) negligence or willful misconduct by the CQN University's governing board, officers, agents, and employees as determined by a court of law.
21. *Disclaimer of Warranties and Limitation of Liability.* CENTER MEMBERS ACKNOWLEDGE THAT THE WORK SET FORTH IN THE CENTER PROJECTS IS EXPERIMENTAL IN NATURE AND THAT UARIZONA MAKES NO WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR

PURPOSE OR NON-INFRINGEMENT, REGARDING THE CENTER PROJECTS,
PROJECT RESULTS, THE CQN IP OR OTHER RESULTS.

IN WITNESS WHEREOF, this Agreement is effective as of the last date of signing set forth herein below.

The Arizona Board of Regents on behalf of
the University of Arizona (“UArizona”)

Authorized signature

Title

PO Box 210158, Rm 510

Tucson, Arizona 85721-0158

Date

Name of Member company/organization

Authorized signature

Title

Mailing address

Date

Initial to indicate membership level

[] Bronze

[] Silver

[] Gold

[] Diamond

Appendix A: Founding Members

Founding Members of the IPP will be limited to:

- Applied Materials, Inc.
- Anametric (formerly Bra-Ket Science, Inc.)
- Corning
- Flybridge Capital Partners
- Forwarding Table LLC
- General Dynamics Mission Systems
- KCK Group
- L3Harris Technologies, Inc.
- Lockheed-Martin Corporation
- National Institute of Standards and Technology
- Osage University Partners
- PSI Quantum Corp.
- Raytheon Technologies
- Sandia National Laboratories
- Xanadu Quantum Technologies