

**ARIZONA STATE UNIVERSITY
SENSOR, SIGNAL AND INFORMATION PROCESSING CENTER (SENSIP)
AND INDUSTRY CONSORTIUM
Center By-Laws**

WHEREAS, SenSIP is a graduated Industry-University Cooperative Research Center (I/UCRC) site. The SenSIP center will continue operating with the same industry-university structure, policies, industry advisory board governance, bylaws and conditions as stated in the NSF I/UCRC agreement template.

Article I – Introduction

1. The following By-laws will be used to govern the Sensor Signal and Information Processing (SenSIP) Center at Arizona State University (“ASU”)
2. The By-laws may be amended at any time by an affirmative vote of the Members of SenSIP with the consent of two-thirds of the Industrial Advisory Board (IAB), as hereinafter defined.
3. These By-laws form a part of the Membership Agreement with Industry Members. If there are any inconsistencies between the By-laws and the Membership Agreement, the terms and conditions outlined in the Membership Agreement take precedence over the By-laws.

Article II – Purpose

1. Vision Statement. The Center is designed to maintain a mechanism whereby the university environment can be used to collectively promote and undertake research, education, technology development, technology transfer, and technological workforce development to enable the nation to transition into the new, net-centric operations paradigm.

Our vision is that the Center will be a primary source for fundamental sensor, signal processing and machine learning research for the modeling, analysis, design, implementation, testing, deployment, and evolution of sensor and sensor network systems. The Center will enable coordinated signal processing and machine learning research and development as well as education and training of U.S. citizen and international students to meet the future sensors and machine learning systems workforce needs of our nation.

The Center will be a leading research organization in the nation, capable of conducting innovative research projects for the federal government and industrial customers. By joining the forces of SenSIP affiliated faculty and high tech companies, the Center will greatly enhance the research capabilities of ASU, “Industrial Members”, and the “Small Business Industrial Members”, as each are defined herein below) and

revolutionize our national research competence. It will earn its fame in the nation as a leading technology innovator, technology incubator, and a center for technology commercialization. The center will be a major research organization within ASU that will attract research faculty and students from all over the world and substantial research funding. It will contribute to building a high quality workforce in sensors and machine learning.

2. Mission Statement. The mission of the Center is:

A. To develop signal processing and machine learning algorithms for sensing applications with emphasis on next generation industry technologies.

B. To create algorithms and software for embedded sensor systems, health, sustainability, computational imaging, security, environmental technologies, and wireless communications.

C. To host fundamental research in quantum machine learning (QML) and quantum signal processing algorithms and software.

D. To become a premier source of fundamental algorithm and software for sensor and other systems.

E. To enhance the research capabilities of the university

F. To provide competency to enable end-users to conceive, create, configure and deploy sensor, signal processing and machine learning systems in real-time.

G. To coordinate education and training to meet the future workforce needs of our nation.

3. Research Goals.

The SenSIP Consortium mission is supported by the following goals:

- Attract and sustain industry members that contribute membership fees to the center;
- Establish research projects that will have significant outcomes including publishable results, ASU patents and results that are relevant to the center mission and industry member areas of interest;
- Train students in the areas of sensor design, signal processing, machine learning and Quantum AI.
- Innovate and establish new IP and enable or assist our faculty to establish start-ups and SBIR projects.

Other important goals include:

- Maintain an industry network that will not only provide research funding but also offer summer internships and resources to expand research facilities and innovation capacity;
- Establish outreach programs that will engage various local and state institutions and communities;
- Offer a variety of programs for training students and practicing engineers and offer a graduate certificate which was already established in 2017;
- Establish and maintain relationships with other universities for joint proposal submissions;
- Establish relationships with universities internationally that will lead to funded research programs;
- Expand activities in new areas including Quantum Machine Learning.

The Center aims to develop effective tools and techniques for

Article III – Membership

1. The classes of Membership shall include:

A. Industrial Members

B. Small-Business Industrial Members

2. Industrial Members. An “Industrial Member” is defined as any company, federal research and development organization, or any government-owned contractor operated laboratory that has joined and been accepted as a member of the Center by signing an “SenSIP Industrial Membership Agreement” that has been signed by an authorized representative of ASU and has paid annual membership fees pursuant to said agreement.

The Industrial Members shall pay a \$39,000 membership fee per year and a Small Business Industrial Member shall pay \$10,000 fee per year in support of the Center. The Industrial Member may support the Center with two or more paid memberships. Membership fees will be used to support Center research and small administrative costs.

Industrial Members can also establish their membership through in-kind support. In kind support may include the value of Members’ contribution of professional and technical services, significant student mentorship, property, equipment or supplies.

3. Small-Business Industrial Members. A “Small-Business Industrial Member” is any small business concern, as defined by the Small Business Association and qualified to participate in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) authorized under 15 U.S.C. §638, that has joined and been

accepted as a member of the Center by signing an “SenSIP Industrial Membership Agreement Small Business” that has been signed by an authorized representative of ASU and has paid annual membership fees pursuant to said agreement.

The Small Business Industrial Members shall pay an annual membership fee of \$10,000 cash, Small Business Industrial can also establish their membership through significant in-kind support. In kind support may include the value of Members’ contribution of professional and technical services, significant student mentorship, property, equipment or supplies. In kind support is subject to approval by the IAB of the center.

A small business concern may, at its option, join the Center as a full Industrial Member at any point.

Article IV – Organization

1. The Center shall be governed by a/an:

- A. Academic Policy Board
- B. Industrial Advisory Board
- C. Center Director

2. Academic Policy Board. The “Academic Policy Board” shall refer to a board comprised of one administrative representative from the IAB, the center director and a representative from ASU’s Fulton Schools of Engineering.

The Academic Policy Board is responsible for administrative oversight and the policies, including but not limited to intellectual property policies, of the Center. The Academic Policy Board will resolve any and all Center administrative issues, including review of academic standards, recruitment strategies, retention issues, funding issues, space requirements, and equipment requirements related to the Center. The Academic Policy Board will assure faculty recognition for participation in the Center in tenure and promotion decisions, and assure that the research is appropriate for graduate education. The Academic Policy Board, with the consent of the Industrial Advisory Board, will approve by unanimous vote any changes to these By-laws.

3. Industrial Advisory Board. The “Industrial Advisory Board” shall refer to a board comprised of one representative appointed by each of the Industrial Members and one representative appointed by each of the Small-Business Industrial Members. An organization may have more than one Center Membership and will be entitled to have one voting representative on the Industrial Advisory Board for every paid membership. The Industrial Advisory Board will meet as needed to fulfill its responsibilities hereunder.

The Industrial Advisory Board is led by an elected Industrial Advisory Board Chair. The Industrial Advisory Board will select with a simple majority vote an Industrial Advisory Board Chair for a two-year term.

All Industrial Members and Small Business Industrial Members will participate through the Industrial Advisory Board in the strategic planning of the Center. The Industrial Advisory Board will assist the Center Director, Site Director and participating faculty in identifying pre-competitive, generic, industry-related, research problems in net-centric technologies; recommend research project topics for future work; identify appropriate internship opportunities for graduate students; assist the Center Director in identifying new members; review the research and educational accomplishments of the Center; and recommend restructuring and/or redirecting of on-going programs to meet Industrial Members' needs and concerns.

At all meetings of the Industrial Advisory Board or committee thereof, two-thirds of the Industrial Advisory Board or committee will constitute a quorum for the transaction of business. 3. Center Director. The "Center Director" holds an appointment with ASU. The Center Director is the primary decision-maker for the Center and shall have responsibility and authority for all aspects of Center's operation and performance.

The Center Director will be responsible for all Center activities and will report directly to the Academic Policy Board and Industrial Advisory Board. The Center Director will be advised by the Industrial Advisory Board Chair.

4. Project Principal Investigators. Project Principal Investigators will manage specific research projects funded by the Center or Industry Members and will report directly to the appropriate Site Director, university administrator, and to the Industrial Member supporting the project. Project Principal Investigators will be identified in specific project proposals.

5. Administrative Support Staff. The Academic Members will provide a reasonable level of clerical and account support for the operation of the Center.

Article V – Administration

1. The Academic Policy Board, Industrial Advisory Board and Center Director will work together on strategic plans for the Center and on recruiting new members.

2. The Academic Policy Board and Industrial Advisory Board shall hold biannual Center Board Meetings.

Article VI – Reports

1. The Center Director shall provide an annual report to the IAB with copy to Fulton Engineering schools.
2. All administrative issues, concerns or conflicts regarding the activities of research and reporting are the responsibility of the Center Director.

Article VII – Meetings

1. The Center Director and the Industrial Advisory Board Chair will establish the schedule of activities and meetings for the Center, as well as agenda for the semi-annual Research Review Meetings.
2. The Industrial Advisory Board will meet at least twice a year to review research results, select projects for recommendation to the Academic Policy Board, review budgets, and discuss the strategic plans for the Center. The Industrial Advisory Board review meetings will coincide with the semiannual Center Board Meetings. An Industrial Member or Small Business Industrial Member may send more than one representative to the Industrial Advisory Board Meetings, but may only have one voting representative per paid membership.
4. The Academic Policy Board will meet as necessary to discuss and resolve Center program and management issues.

Article VIII – Research Project Selection Procedures

1. Typically, Industrial Members or Small Business Industrial Members will propose general industry-oriented research topics of interest to their organization.
2. Industrial Members and Small Business Industrial Members may have an opportunity to fund one or more research projects. Members of the Industrial Advisory Board will recommend funding of projects and will cooperate with the Center Director to establish an annual budget for each project.
3. Projects proposals will be presented at the Center meetings and evaluated by the Industry Advisory Board.

Article X1 – Publicity

1. An Industrial Member or Small Business Industrial Member shall not use the name of ASU or the Center in any publicity, advertising or news release without the prior

written approval of an authorized representative of ASU, or in the case of the Center written approval of the Center Director is required. Likewise, ASU may not use the same of an Industrial Member or Small Business Industrial Member in any publicity without the prior written approval of the member.

Article X – Publications

1. Subject to ASU’s publication policies, faculty engaged in Center research reserve the right to publish in scientific or engineering journals the results of any research performed by the Center. The sponsoring Industrial Members or Small Business Industrial Members, however, shall have the opportunity to review any paper or presentation containing results of the research program of the Center prior to publication of the paper. 2. Any confidential information provided by an Industrial Member or Small Business Industrial Member to a Project Principal Investigator or other members of the Center shall be provided under the protection of an independent confidentiality agreement between the Industrial Member or Small Business Industrial Member and the appropriate university.

Article XI – Benefits

Subject to Section F of the Membership Agreement(s):

1. All Member Institutions will have non-exclusive rights to the entire Center research portfolio.
2. All Industrial Members and Small Business Industrial Members will have an opportunity to directly participate in Center research and education programs by serving as industrial mentors and/or thesis committee members as appropriate and consistent with the policies and procedures of ASU.
3. All Industrial Members and Small Business Industrial Members will have an opportunity to propose case study problems, specific research problems and focus areas for research. The case study problems will be used to train Center students.
4. Technology transfer between the faculty research teams and Industrial Members and Small Business Industrial Members may be promoted by:
 - A. Graduate student industrial internships;
 - B. The direct involvement of the industrial advisor on the research team;
 - C. Web-based submission of reports; or
 - D. Semiannual meetings.

5. Each Industrial Member or Small Business Industrial Member that joins the Center will vote at Industrial Board Meetings on the selection of research projects supported by membership fees. They will also be eligible to vote at Industrial Board Meetings on all other Center matters and participate in the evaluation and discussion of research projects.

Article XII – New Members

1. New companies, federal research and development organizations, government-owned contractor operated laboratories or small businesses concerns may request, or be requested, to join the Center as an Industrial Member or Small Business Industrial Member. These new organizations may join the Center upon signature of the applicable Membership Agreement, acceptance of the current By-laws, and payment of the non-prorated annual membership fees. Application of these new membership fees may be made to existing research programs or held in reserve.

Article XIII – Outreach and Broader Impacts

1. The Center Director will develop a Broader Impacts Plan to ensure that the Center promotes collaborations within the community through local, regional, national and international participation in center activities

2. The Center Director and Site Directors will develop within the Broader Impacts Plan a strategy to ensure that the Center promotes collaboration within the community through extensive K-12 involvement. This plan may take the form of technology demonstrations, tours, and student research projects at the K-12 level.