

ASU SenSIP **Phase 2 site of the NSF Net-Centric I/UCRC**



The mission of the SenSIP (Sensor, Signal and Information Processing) Industry Consortium is to perform use-inspired research and train students in sensor and information systems, digital signal and image processing, wireless communications, networks, and multimedia.

**2nd Phase
NSF I/UCRC**

**Speech, Image and
Video Processing**

DSP

Machine Learning

6G

Health Monitoring

Sensor Networks

Pattern Recognition

PV Monitoring

Communications

Big Data

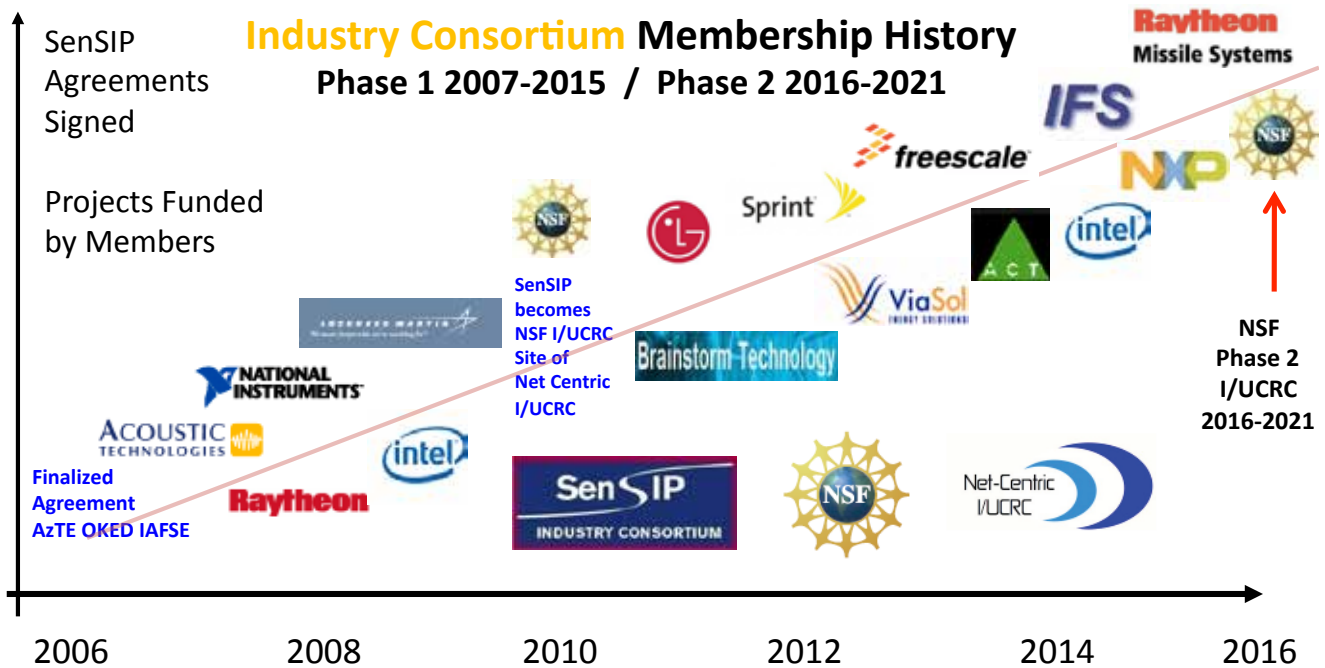
Adaptive Systems

Become a Member of SenSIP Industry Consortium and NSF I/UCRC.

Benefits:

- Cost effective and reduced overhead research.
- Projects co-defined/co-advised by industry members and faculty.
- Consortium students spend time both at ASU and industry site.
- Privileged access to student portfolios; Student accessible only to consortium members.
- Industry members tap on SenSIP faculty expertise; ASU knowledge base in signal processing, communications, sensor networks, software and hardware, speech, video and multimedia systems.
- Access to algorithms/tools/documents useful to the industry community.
- The SenSIP consortium can create customized courses for the industry members.
- SenSIP faculty organize and give seminars on topics defined by industry members.
- One half day short course per year on topics covered by our faculty.
- SenSIP Website access available to industry members with repository of software tools.
- Conference reports from conference visits in target areas.
- Organize training workshops on sensors, DSP, communications.
- Membership in the industry advisory board where industry members defines research directions.
- Industry-friendly IP Arrangement. Royalty free non-exclusive IP rights on shared research.
- Recruiting advantage by developing relationships with students at an early stage.
- Program involves over twenty faculty with full research facilities.
- SenSIP Graduate training certificate in sensors and signal processing.

2nd Phase NSF NCSS SenSIP Industry-University Collaborative Research Center (I/UCRC) Site



Research areas

Security and Defense Applications

- Integrated Sensing Systems
- Sensor Networks
- Radar, Sonar, and Array Signal Processing
- Waveform Design
- Video Exploitation
- Object Recognition
- Beamforming



Communications and Signal Processing

- Digital Signal Processing
- Wireless Communications
- Source and Channel Coding
- Low Power Algorithms
- Software Defined Radio
- DSP for Biosensing
- Data Mining



Multimedia Systems

- Speech Processing
- Image and Video Coding
- Computer Games and video Summarization
- 6G Network Applications
- Algorithms for Arts and Media
- Computer Music



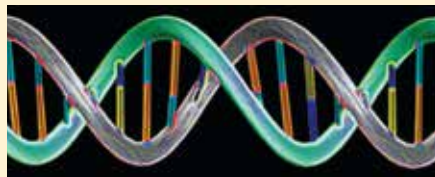
Wireless Systems

- Information Theory and Networks
- Multimedia Networks
- MIMO Systems and Adaptive Antennas
- Modulation
- Antenna Systems
- 6G Systems
- Network Security



Biomedical Applications

- Biosensors
- Biometrics and Data Mining
- Genomic Signal Processing
- MRI Applications
- DNA Analysis
- Brain Dynamics



Algorithms, Hardware and Software Systems

- DSP Chips and FPGAs
- Java Systems and J-DSP
- MATLAB Simulations and Testbeds
- Java, iOS and Android for controlling sensor networks
- Dynamical Systems
- Adaptive Controls and Chaos Theory



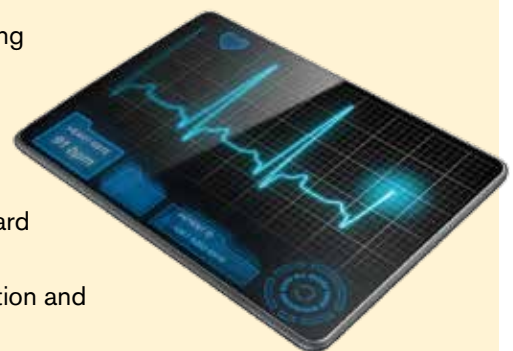
Energy and Sustainability

- Solar panel monitoring
- Fault detection
- Optimization
- Signal Analysis
- Panel Diagnostics
- Inverter Monitoring
- PV Array GUI



Mobile Health

- Health monitoring
- Biosensors
- Telemedicine
- Biomedical Informatics
- Health Dashboard
- Mobile Imaging
- Disease Prediction and Prevention





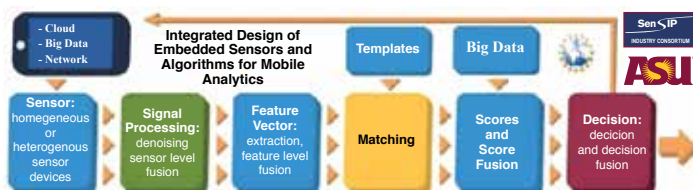
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Partner Universities



Integrated Algorithms and Sensors



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Industry Consortium Projects

- Echo Cancellation, Acoustic Technologies
- Software for New OSCI Standard Interfacing, Intel Corporation
- DSP Algorithms and Software for Sensors, National Instruments
- Image Exploitation for Radar, Lockheed Martin
- Sensor Networks, LG
- 5G Research, Sprint Communications
- Image processing, Brainstorm Technologies
- Sensors for Solar Panel Monitoring, Pundra
- MIMO Radar, Raytheon
- Machine Learning of Sensor Data, Freescale
- Sensors for Activity Modeling, Intel
- Sensors for Hemoflow, IFS
- Wireless Sensors for PV Systems, ACT
- Image Scene Analysis, Intel

Federal and Industry projects

- NIH: Chemical Sensors, (with UC-Riverside)
- STTR: MIMO Signaling for Underwater Communications
- NSF: IGERT: Arts & Engineering Initiative on Experiential Media
- NSF Phase 3: Java-DSP Software Development
- NSF EXP: DSP Algorithms for Silicon Ion-Channel Sensors
- NSF CCF, Biomedical Innovations Using Agile Sensing
- NSF FRP; Sensor Fusion for Net Centric Applications
- NSF Collaborative Grant, An Astronomical-Calibrated Time Scale
- Machine Learning for Internet of Things (IoT), NXP
- Mobile health monitoring, NCS
- Global Engagement Project: with the University of Cyprus KIOS center
- NIH: Tool to Integrate Genomic and Proteomic Data of Aging
- NIH: Collaborative Grant, Wearable Nanosensor Array
- NSF: CSR-EHS: Hardware/Software Co-Exploration of Scalable Software Defined Radio
- General Dynamics: Image and Video Compression Technologies
- Sun Microsystems: SunFire V880 Server for Video Trace Project
- Five NSF: CAREER Awards in Signal Processing and Communications
- NSF GOALI Solar Panel Monitoring Project
- NSF Consensus Networks Project
- British Council Grant on SenSIP - Imperial College Project on Sensor Localization
- NSF Consensus Networks Project
- NSF Project on Big Data
- NSF Project on Network Security
- DARPA Project on Radar Spectrum Allocation
- NSF Project on Solar Panel Monitoring
- NIH Project on Speech and Hearing
- ONR Project on Machine Learning
- NSF Project on Media Applications
- NSF International Collaboration with ITESM on sensors
- NSF Phase 2 I/UCRC - ASU SenSIP site 2016-2021

