

**CRSS: Center for Research in Storage Systems**

**Center for Research in Storage Systems (CRSS)  
Bylaws**

**National Science Foundation  
Industry/University Cooperative Research Center (I/UCRC)**

University of California Santa Cruz

Version 1.1:  
11-May-2017 Adopted

CRSS Center Director Approval

---

Ethan Miller  
University of California, Santa Cruz

CRSS Site Director Approvals

---

Ethan Miller  
University of California, Santa Cruz

---

Pankaj Mehra, IAB Board Chairman

# CRSS: Center for Research in Storage Systems

## ARTICLE I – INTRODUCTION

- 1.1 The following Bylaws will be used to govern the Center for Research in Storage Systems (CRSS), a National Science Foundation (NSF) Industry/University Cooperative Research Center (I/U CRC).
- 1.2 The Bylaws can be amended at any time by an affirmative vote of two thirds (Quorum) of the members of the Industrial Advisory Board (IAB) with the approval of the Center Director and Site Director(s).
- 1.3 DEFINITIONS
  - 1.3.1 “Center for Research in Storage Systems (CRSS)” is an NSF Industry/University Cooperative Research Center (I/U CRC)” consisting of the following universities in consortium:
    - University of California, Santa Cruz (Lead Academic Institution)
  - 1.3.2 “Company Member” means a company or other industry entity that has signed an Industry/University Cooperative Center for Research in IntelliStorage Membership Agreement and paid one or more membership fees during the current Membership Year. Each Company Member’s voting representative is automatically a member of the Industrial Advisory Board (IAB) during the term of the Company Member’s membership.
  - 1.3.3 “Membership Agreement” means the Industry/University Cooperative Center for Research in Intelligent Storage Membership Agreement signed by a corresponding Member.
  - 1.3.4 “Membership Year” means either a twelve (12) month period beginning on January 1 and ending December 31 or a twelve (12) month period beginning July 1 and ending on June 30 as elected by the Company Member. See section 3.3 for information on renewals.
  - 1.3.5 “University Member” means any of the following CRSS I/U CRC universities:
    - University of California, Santa Cruz (Lead Academic Institution)
  - 1.3.6 Center Director means the faculty member responsible for all I/U CRC operations, who is from NSF identified lead university.
  - 1.3.7 Site Directors means faculty member responsible for coordinating all research projects at a specific University Member.
- 1.4 These Bylaws form a part of the Membership Agreement signed between each Company Member and at least one University Member. The current approved Membership Agreement is always available at <http://www.crss.ucsc.edu/media/static/crss->

## CRSS: Center for Research in Storage Systems

[membership.pdf](#). If there are any inconsistencies between the Bylaws and the standard Membership Agreement, or any Membership Agreement effective prior to the date of these Bylaws, the terms and conditions outlined in such Membership Agreement take precedence over the Bylaws. Amendments to the standard Membership Agreement must be approved by the Center Director, the Site Director(s), and two thirds of the IAB members.

### ARTICLE II – CRSS PURPOSE

#### 2.1 Vision Statement:

To be a nationally-recognized leader in research that meets the needs of companies that design, manufacture and market products for computer storage and storage related technologies.

#### 2.2 Mission Statement:

2.2.1 To develop enabling technologies, design tools and methodologies for advanced file and storage systems by exploring and developing new technologies and techniques to improve the usability, scalability, security, reliability, and performance of storage systems for the benefit of center members and society.

2.2.2 To educate the next generation of scientists and engineers capable of advancing the field of storage systems.

### ARTICLE III – MEMBERSHIP

3.1 The CRSS I/U CRC annual sponsor membership fee is as agreed upon in the Membership Agreement. Currently, the annual membership fee is fifteen thousand U.S. dollars (\$15,000.00) per year for a small business entity, as defined by the Federal government, and for all other entities, fifty thousand U.S. dollars (\$50,000.00) per year. This fee schedule is not expected to change for the next three years. Membership fees will be used to support CRSS research. Membership fees are NON-REFUNDABLE, except to the limited extent provided for by the Membership Agreement.

3.2 All Company Members will sign the standard Membership Agreement with one or more University Members unless otherwise approved by the Center Director, all University Site Directors, and two thirds of the representatives of the IAB. A common exception is when a NSF Small Business Innovation Research (SBIR) company applies for membership into CRSS I/UCRC wherein appropriate modifications may be made to the particular Membership Agreement to accommodate the fact that the bulk of the company membership fees may be paid by NSF on behalf of the company (see Article XVI of this document).

3.3 As indicated in Section C of the standard Membership Agreement (Attachment A), due to the type of research to be performed, a Company Member should have the intention of maintaining membership for at least two (2) years. Memberships are effective on the date of a signed membership agreement. Memberships are renewed annually and are not prorated. Member agreements dated July 1 to December 31 will renew on July 1 and member

## **CRSS: Center for Research in Storage Systems**

agreements dated January 1 to June 30 will renew on January 1. To renew a membership, a Company Member shall pay the annual membership fee prior to the start of their new Membership Year. In extenuating circumstances, payment for renewal can be delayed for up to 60 days past the renewal date with permission from the Center Director.

### **ARTICLE IV - ORGANIZATION**

- 4.1 There is only one IAB for CRSS. The IAB will select a Chairperson for a two year term and no less than every two years thereafter.
- 4.2 Company Members paying one membership fee will have one voting representative on the IAB. A Company Member may pay more than one membership fee and will be entitled to have one voting representative on the IAB for every full membership fee paid during that Member Year.
- 4.3 All Company Members are encouraged to participate in the strategic planning of CRSS, which may include (i) assisting a University Member faculty in identifying pre-competitive, generic, industry-related, research problems in storage technologies; (ii) recommending research projects for future work; (iii) assisting in identifying internship opportunities offered at the Company Member's site for graduate students and postdoctoral students; (iv) assisting the Center Director and Site Directors in identifying new potential sponsors; and (v) reviewing the research and educational accomplishments of CRSS.
- 4.4 The Center Director will be responsible for all CRSS activities.
- 4.5 The Site Directors at the University Members site will be responsible for CRSS activities at their respective universities and will report directly to their respective appropriate university administrators and to the Center Director. The Site Directors will provide liaison between CRSS and the appropriate academic departments of its own university.
- 4.6 Project Principal Investigators will manage specific research projects funded by CRSS and will report directly to the appropriate Site Director, the appropriate university administrators, and to the Company Members who have expressed interest in the project.
- 4.7 A Center External Evaluator, appointed by the NSF, will assist the Center Director, Site Directors, and the IAB to organize CRSS and provide an independent assessment of the operation. The Center External Evaluator will report directly to the I/UCRC Program Manager at the NSF. Travel expenses for the Center External Evaluator will be paid by the University Members and shall be limited to travel to the IAB meetings and one program review trip to each University Member site per calendar year.

### **ARTICLE V - ADMINISTRATION**

## **CRSS: Center for Research in Storage Systems**

- 5.1 The Center Director and Site Directors will work with the IAB on strategic plans for CRSS and on engaging new potential Company Members.
- 5.2 The Center Director in cooperation with the Site Directors will submit an annual operating and research budget to the IAB for review and recommendations. This budget will be available for review two weeks prior to the Spring IAB Meeting each year. Financial status will be presented by the Center Director at each semiannual meeting. Financial status will be available for review two weeks prior to each meeting. Financial materials for these meetings will be posted on the CRSS web site (member login required).
- 5.3 The Site Directors, upon recommendation of the IAB and the Center Director, will authorize the use of membership fees by Project Principal Investigators in support of CRSS research.

### **ARTICLE VI – INDUSTRY ADVISORY BOARD RESPONSIBILITIES**

- 6.1 Two IAB meetings will be held during the year (spring and fall).
- 6.2 Company Members are expected to:
  - (i) attend both semi-annual IAB meetings, in person (barring circumstances out of their control.) Video- or tele-conference participation during project selection procedures is strongly discouraged;
  - (ii) participate in the process of reviewing and selecting research to be funded; and
  - (iii) vote on issues before IAB.A Company Member who fails to attend, participate or vote shall be deemed to have no objections to decisions made at such meetings, no objections to selections resulting from such reviews, and no objections to the outcome of such voting, respectively.

### **ARTICLE VII - REPORTING**

- 7.1 The Center Director shall provide to the Company Members and to the NSF:
  - (i) an annual report;
  - (ii) project status for each funded research project on a semiannual basis;
  - (iii) financial status for CRSS on a semiannual basis; and
  - (iv) quarterly updates that include a summary of any membership changes, administrative alterations, and key research achievements that occurred at the Center during the reporting period. Two of these updates may occur during regularly scheduled IAB meetings and the other two must occur three months after the previous IAB meeting date. These updates will be posted on the members-only section of the Center website and all Company Members will be notified by email when these updates are posted.
- 7.2 The Site Directors/Principal Investigators shall provide interim reports to the Center Director and to the Company Members as necessary at the completion of major research tasks. These interim reports will be distributed via the CRSS web site and e-mail notification to all Company Members once posted.

## **CRSS: Center for Research in Storage Systems**

- 7.3 All administrative issues, concerns, or conflicts regarding the activities of research and reporting are responsibilities of the Center Director.
- 7.4 An annual report will be prepared and submitted to NSF and all Company Members. This report will summarize the year's activities.
- 7.5 University Members grant to each Company Member an irrevocable, nonexclusive, worldwide, and fully paid-up copyright license for any copyrightable materials (including reports, but excluding software, which is dealt with in the Membership Agreement) published or otherwise made available by the University Member in the performance of the projects hereunder, subject to the limitations of other copyright holders, which University agrees to make Company Members aware thereof. This license includes the right to reproduce, display, prepare derivative works from, and distribute and transmit such copyrightable materials and resulting derivative works, and to sublicense others to do any or all of the foregoing, subject to Article XVII Confidentiality.

### **ARTICLE VIII - MEETINGS**

- 8.1 The Center Director, Site Directors and the IAB Chairperson will establish the schedule of activities and meetings for CRSS as well as the agenda for the semiannual research review meetings. Materials to be presented at an IAB meeting are expected to be posted to the CRSS web site (login required) one week prior to the meeting.
- 8.2 The University Members and IAB Members will meet twice a year (spring and fall). The meeting site will rotate between the University Members' sites, with site selection and specific meeting dates for an IAB meeting determined no later than the conclusion of the previous IAB meeting.
- 8.3 The IAB will meet twice a year to review research results, select projects, review budgets, and discuss the strategic plans for CRSS. A Company Member may send more than one representative to the IAB meetings, but may only vote on CRSS matters according to the number of voting representatives they possess as provided for under Article 4.2 of these Bylaws.

### **ARTICLE IX- RESEARCH PROJECT SELECTION PROCEDURE**

- 9.1 A project selection process will be developed and adopted by the members of the IAB in conjunction with the Site Directors and approval of the Center Director.
- 9.2 Projects will be typically two-three (2-3) years in length and reviewed every six (6) months at the semiannual IAB meetings.

## **CRSS: Center for Research in Storage Systems**

- 9.3 All Company Members may participate in the selection and review of research projects. The number of votes each Company Member may cast during a particular project selection event is equal to the number of voting representatives that Company Member has as provided for under Article 4.2 of these Bylaws.
- 9.4 Company Members may propose general industry-oriented research topics of interest to their organization. A portfolio of relevant research topics will be compiled based on the interest of the Company Members. These research topics will be posted on the CRSS web site (login required) and will form the basis for cooperative discussions among the University Member faculty and the Company Members. Each University Member will develop a set of pre-proposals consistent with the goals of their group, the interest of the Company Members, and the mission of CRSS. The pre-proposals will be posted on the CRSS web site one week prior to the IAB meetings.
- 9.5 The IAB may consider new proposals when additional funding is available to support additional projects or when current projects have ended.
- 9.6 Project Principal Investigators or Site Directors will present new research proposals in a session separate from the project review session. Company Members will complete Level of Interest Feedback Evaluation (LIFE) forms at the end of each presentation. The LIFE form consists of a four-item scale measuring the level of interest among Company Members for a specified research project and includes a “comments” section for open-ended responses.
- 9.7 LIFE forms shall be completed by each Company Member based on the Company Member’s interest in the research.

### **ARTICLE X - PROJECT REVIEW PROCEDURE**

- 10.1 At each semi-annual IAB meeting, Project Principal Investigators or Site Directors will review their research progress to date via short project review presentations and a poster session. Each Company Member is expected to complete LIFE forms after each project presentation.
- 10.2 A closed IAB meeting will be held following the research review sessions during which LIFE feedback will be reviewed. The IAB will discuss each project and provide the appropriate Project Principal Investigators and the appropriate Site Director with written recommendations and suggestions to help guide the research.
- 10.2.1 Criteria for review will include
- Relevancy to IAB interests
  - Schedule
  - Budget
  - Meeting goals and objectives as agreed to by the IAB

## **CRSS: Center for Research in Storage Systems**

- 10.3 Company Members may choose to become “Project Mentors” for projects of particular interest to their organization. These Project Mentors may arrange to meet with research Project Principal Investigators and graduate students at the semi-annual IAB meetings for more in-depth discussions and collaboration on the research project. At the discretion of the IAB, time may be scheduled into the semi-annual IAB meetings to facilitate these mentoring relationships.
- 10.4 At the conclusion of the annual IAB meeting, the IAB chair in coordination with the Center Director will notify the Project Principal Investigator and appropriate Site Director of the decision on the research. Notification will be in writing.

### **ARTICLE XI - BENEFITS**

- 11.1 Company Members will have rights to CRSS research portfolio in accordance with the terms of the Membership Agreement, including these Bylaws.
- 11.2 Company Members will have an opportunity to directly contribute to CRSS research and education programs by serving as industrial mentors and/or thesis committee members as appropriate and consistent with the policies and procedures of University Members.
- 11.3 Company Members will have an opportunity to propose case study problems, specific research problems, and focus areas for research.
- 11.4 Company Members will have the opportunity to observe, mentor and interact with some of the most promising young researchers in the field.
- 11.5 Company Members will have an opportunity to host postdoctoral research associates and/or graduate students as industrial interns, subject to terms and conditions of the hosting organization.
- 11.6 Company Members will have an opportunity to vote on the selection of research projects supported by the membership fees.

### **ARTICLE XII - PROSPECTIVE UNIVERSITY MEMBERS AND COMPANY MEMBERS**

- 12.1 Prospective University Members:
- 12.1.1 From time to time, new universities may request to become a University Member. Each new university requesting such membership shall initially obtain concurrence from the Center Director, Site Directors, and the I/UCRC Program Manager at the NSF prior to submitting a “Letter of Intent” to join CRSS. New universities requesting membership as a University Member must demonstrate their ability to perform synergistic research within the focused research areas of the CRSS and their willingness to work within the structure, policies and procedures of CRSS. Upon concurrence by CRSS, the new



## **CRSS: Center for Research in Storage Systems**

university requesting to become a University Member may continue application per the applicable procedures of the current NSF I/UCRC program solicitation.

12.1.2 A new university requesting to become a University Member shall review their research objectives and program plans, and, obtain and submit within their Planning Grant Proposal a “Letter of Support” from each of the current University Members’ Site Directors.

12.2 Prospective Company Members:

12.2.1 From time to time, new companies, corporations, or other industrial organizations may request, or be requested, to join CRSS as a Company Member. These new companies, corporations, or organizations become a Company Member upon (i) signature of the standard Membership Agreement, including acceptance of the Bylaws, and (ii) payment of the annual membership fee, NON-PRORATED. Application of these new membership fees shall be made to existing research programs unless a new “interim” research program is otherwise approved by the Center Director, Site Directors, and the Chairman of the IAB. Continued funding of any “interim” research program is subject to IAB approval at the next semiannual IAB meeting under the terms of these Bylaws.

12.2.2 In the event a prospective Company Member desires to attend an IAB meeting, the Center Director shall first obtain from the prospective Company Member a signed non-disclosure agreement with terms sufficient to protect CRSS, University Member, and Company Member information disclosed at such meeting consistent with the provisions of these Bylaws.

### **ARTICLE XIII – INTELLECTUAL PROPERTY**

13.1 Intellectual property rights and obligations provided for in Article 7.5 above and in the Membership Agreement shall apply in their entirety.

13.2 Intellectual property disclosures will be posted on the CRSS web site, and Company Members notified by email.

### **ARTICLE XIV - OUTREACH AND BROADER IMPACTS**

14.1 CRSS will maintain a web site for dissemination of information. This web site will contain a public section and members only section. The web site is located at <http://www.crss.ucsc.edu/>.

14.2 The CRSS website will contain all documentation produced from CRSS meetings, including presentation materials, reports, manuscripts, and standard forms / formats. This information will only be available to CRSS members. Members only have access to non-public information generated during their membership period.

## CRSS: Center for Research in Storage Systems

- 14.3 CRSS will not use in advertising, publicity or other marketing activities any name, trade name, trademark, or other designation of any Company Member without prior written agreement. However, Company Members joining CRSS agree to have their name and logo listed on the CRSS list of members (<http://www.crss.ucsc.edu/sponsorlist.html>) unless they request otherwise. This listing may be changed or deleted at any time at the discretion of the Company Member by notifying the Center Director.
- 14.4 For a particular CRSS project, a Project Principal Investigator may want to collaborate with a third party, such as a professor, post-doctorate or student who is not an employee of a University Member. Prior to such collaboration, the Project Principal Investigator must
- (i) obtain approval from the Site Director and the IAB; and
  - (ii) have an agreement signed by the third party and his/her university/employer granting Company Members the same rights to the third party's intellectual property as University Member grants to Company Members under Article XIII of these Bylaws, wherein proof of such agreement will be provided to the Site Director and the IAB.

### ARTICLE XV — FINANCIAL

- 15.1 Financial summaries are required of the Center Director at each of the two meetings.
- 15.2 Unspent funds for a project during a particular year can be carried forward to the next year for the same project, or a different project with IAB approval.
- 15.3 Company Members are encouraged to pay membership fees as early as possible to minimize impact on the research.

### ARTICLE XVI – SBIR Phase II Company Membership

- 16.1 Membership Requirement Exceptions for a Small Business Innovation Research (SBIR)/ Small Business Technology Transfer Program (STTR) Company.

Whereas an SBIR/STTR company's membership may be co-funded by the NSF, and whereas this funding commitment may be limited to one or two years instead of the required three-year participation for I/CRC membership, the membership requirement for such an SBIR company may, at the company's request, be limited to the specific duration of funding provided by NSF through its supplemental grant funding procedure. Such an exception will be documented in the standard I/U CRC contract, stating that:

*“Because Company X is an SBIR/STTR-funded company whose membership is being supported in part by the NSF, the membership requirement will be limited to \_\_\_\_ years, consistent with the duration of funding Company X has received from NSF for this purpose. The Company will have the right to continue its participation for additional years in its sole discretion, whether such membership is funded through NSF or through other independent means.”*

## **CRSS: Center for Research in Storage Systems**

This contract will be approved, based upon signature by the authorized representative of the Company, by the CRSS Directors or University Site director and by an authorized representative of the University Member's Sponsored Research Office.

### **ARTICLE XVII – Confidentiality**

- 17.1 Except as provided in this article and the Membership Agreement, all information provided to Company Members, including information contained in annual reports, project status updates, and interim reports, whether available via the CRSS web site or distributed to the Company Members via email or otherwise, are non-confidential and each Company Member is free to use and disclose any information contained in such report for any purpose, subject to valid patent rights and copyrights.
- 17.2 Technical information, including technical information contained in any reports, shall be subject to the pre-publication review by the Company Members provided for in the Membership Agreement. Should any Company Member request a delay in publication during such review, or should any Member University request a delay to file for patent protection, the Company Members and University Members shall not disclose such technical information during such delay, which shall not exceed three (3) months from the date such technical information is received. Except for this obligation, each Company Member will be free to use and disclose any technical information it receives from CRSS for any purpose, subject to valid patent rights and copyrights and subject to Member University's reserved right to first publish results of research.

### **ARTICLE XVIII - Antitrust Compliance**

It is the intention of CRSS that all Center operations and activities will be in conformance with all applicable antitrust requirements.