



Bylaws V5.0, May 24, 2017

NSF Center for GRid-connected Advanced Power Electronic Systems (GRAPES)



University of Arkansas (lead) University of Wisconsin-Milwaukee University of South Carolina

1. Primary objectives of GRAPES

- I. To develop new technologies for advanced power electronic systems in the areas supporting grid connected distributed energy resources, power flow and routing devices, and intelligent load-side devices,
- II. To develop the software and tools for controlling embedded- and grid-connected power electronics to benefit the grid as well as controlled loads,
- III. To educate engineers who understand the power electronic technologies important to the member companies.

2. Operational vision for GRAPES as a multi-institutional center

The NSF Center for GRid-connected Power Electronic Systems (GRAPES) is envisioned as a multi-institutional research center having headquarters at the University of Arkansas, Fayetteville that is expected to grow in number of participating universities over time.

GRAPES initially included two universities -- the University of Arkansas, Fayetteville and the University of South Carolina. The Center is currently comprised of three university sites that are loosely coupled logistically but operate together as a single, multi-institutional research center. Each university site must have a healthy, largely independent research program in conjunction with their own members to give them value. Inter-site collaborations are an equally vital component for this Center. These collaborations will be both formal and informal. Frequent interactions between faculty members and graduate students at different sites will occur via teleconferencing, meetings at professional conferences, trips to visit each other's sites, student exchanges, etc. Within each site, each research project will be structured to attain the critical mass of personnel and other



resources necessary to ensure success. Projects will be highly leveraged for the graduate thesis and dissertation requirements of its participating students.

3. Role of the Executive Director

The Executive Director will work with the Industrial Advisory Board (IAB) to ensure Member satisfaction, recruit new members, visit member sites and coordinate financial planning. Other tasks involve leading, organizing, and managing activities between sites and serving as the contact point on issues that span the entire Center. The Executive Director will serve as a faculty member on one or more projects. The Executive Director will coordinate the proper filing of all proper intellectual property and patent documents working in cooperation with Site Directors. The Executive Director will work with the National Science Foundation (NSF) to ensure satisfaction, compile highlights and annual reports, attend Industry/University Cooperative Research Center (IUCRC) meetings, and seek new ways to fund the center through funding supplements.

4. Role of Site Directors

The Site Directors will lead, organize, and manage activities within the site and serve as the contact point on issues that span that entire university site. They will also serve as a Co-Director of the overall Center and as a faculty member on one or more projects at their site. They will coordinate the filing of all intellectual property and patent documents working in cooperation with Executive Director, recruit new members, monitor center performance metrics, and work performance gap issues. They will ensure communication commitments are met and oversee existing relations. They will identify and support promising research thrusts. They will complete reports to the NSF (that are required on a grant-by-grant basis) as needed.

5. Role of the Managing Director

The Managing Director will lead, organize, and manage activities within the Center and serve as the contact point on issues that span that entire Center. The Managing Director will serve to coordinate the regular communications between the two sites and to the center's membership. The Managing Director will foster student-industry relationships, working with members and universities to place students at all degree levels. The Managing Director will assist in recruiting new members. Working with the Center's Administrative Resources, the Managing Director will maintain copies of membership agreements and other central data, such as the IP portfolios, GRAPES Membership Agreements, bylaws, semi-annual newsletter, etc.

6. Role of each participating faculty member

Each faculty member will lead, organize, manage and report on activities within their project, as well as serve as the contact point on issues specific to that project at their home site.



7. Role of Center Administrative Resources

Center Administrative Assistants will maintain a filing system for central documents. They will coordinate the booking for meetings, meals, badges, pre-meeting materials, etc. They will be responsible for typing correspondences, creation of documents, print services jobs and basic bookkeeping on Center accounts.

8. Role of the Industrial Advisory Board (IAB), Chairperson and Chairperson-Elect

- The IAB serves as the strategic steering and advisory committee of the Center with primary responsibility for recommending funding priorities to the Center's Directors, helping to set strategic objectives of the center, and reviewing status of on-going research projects. The IAB is comprised of one official liaison from each Full Member. The IAB Chair and Chair-Elect are elected by the Full Members of the IAB and serve one-year terms. The Chair-Elect assumes the role of Chairperson the following year, and a new Chair-Elect is selected. On policy decisions, Full Members hold voting seats on the IAB (with one vote for each \$40K membership). A quorum for IAB vote is two-thirds of the voting IAB Members or their proxies. In general, a simple majority outcome to a vote will carry an action, except for Bylaws changes, which require a two-thirds majority.
- The role of the Chairperson is to lead the IAB Meetings and to be the principal communicator for the IAB.
- The role of the Chair-Elect is to fill the role of the Chairperson when he/she is unavailable.
- The Chair-Elect assumes the role of IAB Chairperson after one year, unless that person requests to be replaced or is otherwise unable to function in the role. In this case, a new Chairperson and Chairperson-Elect will be elected by the full membership of the IAB.

9. IAB recommendations on funding priorities

Proposed new projects are reviewed annually by the IAB. On project decisions, each IAB Full Member is allocated forty (**40**) voting points per full membership (equivalent to one voting point per thousand dollars paid in membership to the Center) with which to influence project selection and resource allocation priorities. Small Companies will be allocated five (**5**) voting points (equivalent to one voting point per thousand dollars paid in membership to the Center). While each membership is associated with one particular university site, voting points may be distributed across research sites and projects in any manner that the Member selects, from all points on one project to some points on many or all projects. Each project must receive sufficient interest (points) from the IAB to be started or continued. A minimum threshold may also be designated.

10. Meaning and characteristics of a full membership

A Full Membership each year is one in which the annual fee (\$40,000) has been contributed by the industry or government member in cash. Each Full Membership has associated with it the full rights and privileges of the Center, including but not limited to standard IP rights as defined in the GRAPES standard membership agreement and voting rights in the IAB on Center policies and projects. Each membership is associated with one of the sites of the Center, and that membership provides influence in terms of project selection and



resource allocation. Members may hold multiple memberships at one site and/or distributed amongst sites as they deem appropriate. If extraordinary circumstances result in less than full payment, the member's voting points will be reduced to one point per thousand dollars represented in cash contribution to the Center that year. Each full member has a single vote on IAB decisions and forty voting points for project allocation.

10a. Pro-rated membership in first year: (Amendment added Spring Meeting 2011)

Membership fees: The standard GRAPES membership is invoiced by calendar year, unless prohibited by external funding sources.

- Members Joining GRAPES before the spring meeting (and thereby eligible to vote during both the spring and fall meetings that calendar year) will pay a fee the first year equal to a full year's membership, \$40,000.00.
- Members joining GRAPES between the spring and fall meetings (and thereby eligible to vote only in the fall meeting during that calendar year) will pay a fee the first year equal to one-half of a full year's membership, \$20,000
- The same fee ratio will apply to small business members.

11. Meaning and characteristics of a small company membership

Small companies (as defined by the Membership Agreement) are encouraged to join GRAPES for an annual membership fee of \$5,000. With this fee they get five votes with which to influence project selection and resource allocation priorities. They do not have a vote on IAB policy decisions where each Full Member has a single vote.

12. Other types of memberships

Other than Full Memberships funded entirely in cash, all other forms of membership in GRAPES will be proposed to and decided upon by the IAB on a case-by-case basis, thereby ensuring that the objectives of the Center are sufficiently advanced to warrant approval. In each case, one of the site directors will formally propose to the IAB a special membership, and that proposal will be approved or rejected by IAB vote, subject to NSF guidelines.

13. Role of the NSF External Evaluator

An NSF External Evaluator, appointed by the National Science Foundation, assists the Center Director, Site Directors, and the Industrial Advisory Board in organizing the Center. The Evaluator also provides independent assessments of the Center's operation. The Center External Evaluator will report directly to the National Science Foundation's I/UCRC Program Manager.



14. Role of each participating students

Graduate and undergraduate students will undertake and complete research tasks assigned by the faculty advisor of the project to which they are assigned. They will leverage their activities for success in publications, allocating sufficient time for publications, reports and thesis submissions to account for the center's publication delay. They will focus theses and dissertations towards graduation, collaborate and work effectively with other students on the same project, and interact with others at the same site and across sites with related interests and activities.

15. How research projects support graduate theses for participating students

As is typical at research-centric universities, GRAPES projects will be maximally leveraged to support doctoral and MS theses for its student participants. Although projects are defined, undertaken, and completed on a yearly basis, it is anticipated that a majority of projects in GRAPES will contain sufficient breadth and depth so as to merit possible continuation for a second and perhaps third year with the addition of expanded tasks and deliverables. In this manner, a doctoral student serving on a project may leverage key scholarly research components of the project for their doctoral dissertation. The same is true for thesis-option Master of Science students, should the work span beyond the first year.

16. Formal schedule for participation

Center workshops will be scheduled semiannually, where on-going and completed research is reviewed and new research projects are proposed and selected for recommended funding. The business of the IAB is conducted at these workshops. These semiannual workshops are tentatively scheduled to occur midyear and near the end of each calendar year at rotating university sites. Projects are typically funded to operate for periods that closely match the calendar year and the semester calendar at each university site. Outside of the normal meetings of the IAB at the workshops, the IAB Chairperson may, at his or her discretion, call for decisions by other means (e.g., via e-mail or teleconference).

17. Attendance at the semiannual workshops

Attendance at the workshops will normally be limited to the following: Center and Site Directors; IAB members and their technical representatives; university faculty, staff, and students participating in the Center; the NSF External Evaluator; NSF program managers and staff; and guests invited by the Site Directors with the approval of the Executive Director (such as prospective new members). Guests must be under a nondisclosure agreement with the Center. In addition, the IAB may (with the Executive Director's approval) invite guests.

18. Employing proprietary information from members

Given the nature of an I/UCRC and research consortium, and the requirement that all research results from all research projects at all sites of GRAPES be equally shared with all members in GRAPES, the faculty, students, and staff conducting the research, careful consideration must be taken to accept and employ proprietary information in the conduct of projects. In those special circumstances where proprietary



information is deemed vital to the success of the project, then with the approval of the Executive Director, an NDA covering this material must be executed between the investigator, students and member organization to control and protect the information, while also making provisions for the results of the project to be disseminated to all GRAPES participants. For projects that rely upon proprietary information or unique requirements, a separate research contract or grant may be the appropriate vehicle (see Section 19).

19. Related research contracts and grants

As needs for proprietary research or unique applications may develop, a separate contract or grant may be negotiated between a Member and one or more of the university sites in GRAPES. Such contracts and grants are handled outside the Center membership agreement and would be expected to have confidentiality, patent, copyright, and financial agreements that are different from Center programs.

20. Equipment for research acquired at each site

Equipment donations from vendors are highly encouraged and will be supported by visibility on the GRAPES web site and in various other materials. Some Members may choose to donate or loan equipment to support the mission of the Center independent of their membership fee or in very special cases propose to do so in lieu of all or a portion of the costs of an additional membership (see Section 12). Any such exception will require the approval of both the IAB and Executive Director.

21. Publication Review Policy and Intellectual Property (IP) Rights (Revised and adopted November 6, 2014)

As detailed in the standard membership agreement, each university site is free to use the results of its research in GRAPES for its own educational, research, and publication purposes. Research that results in new intellectual property is a small part of an NSF Center's total output, but is protected by a publication review policy. In accordance with the stipulations in the membership agreement, through their IAB representative, each member shall have the opportunity to review a substantively complete draft of any manuscript for possible publication containing results of Center-funded research.

- I. UNIVERSITY reserves the right to publish in conferences and scientific or engineering journals the results of any research performed by CENTER. COMPANY, however, shall have the opportunity to review any paper or presentation containing results of the research program of CENTER at least thirty (30) days prior to the scheduled submission of the paper. COMPANY shall have the right to request a delay in publication until the IP issue is resolved, or the proprietary information is removed, provided that COMPANY makes a written request and justification for such delay **within ten (10) days** from the date the proposed publication is submitted to COMPANY.
- II. All patents derived from inventions conceived or first actually reduced to practice in the course of research conducted by the CENTER shall belong to UNIVERSITY. UNIVERSITY, pursuant to chapter 18 of title 35 of the United States Code, commonly called the Bayh-Dole Act, will have ownership of all patents developed from this work, subject to "march-in" rights as set forth in this Act.



- III. UNIVERSITY agrees that members are entitled to negotiate for a nonexclusive royalty-free license for internal use of IP developed by the CENTER. “Internal use” by a licensee means the direct or indirect use of the licensed intellectual property in the trade or business of the licensee. The intellectual property may not be sold by the licensee and the intellectual property may not leave the licensee’s facilities in any form, either intellectually or physically, but may be used by the licensee inside their facilities for any purpose. Internal use by COMPANY includes internal use by its subsidiaries and affiliates, subject to the same conditions stated above. In the event that COMPANY sells its subsidiary or affiliate, the use of the Center’s IP will be renegotiated as part of the normal course of action in these situations.
- IV. COMPANIES that wish to exercise rights to a royalty-free license must indicate so in writing on a GRAPES IP RIGHT OF FIRST REFUSAL form within 60 days of the offer of IP rights by CENTER, and agree to pay patent application and maintenance costs. These expenses will be divided equally among all companies that respond indicating that they want to receive a license. Failure to respond to the IP rights offer (GRAPES IP RIGHT OF FIRST REFUSAL form) within the 60-day period will be considered as DECLINED BY COMPANY, thereby relinquishing all claims to the Patent and Technology Rights.
- V. If only one COMPANY seeks a license for the IP, that COMPANY may negotiate for an Exclusive fee-bearing license (includes royalty) through one of its agents. COMPANY has the right to sublicense its subsidiaries and affiliates. Any Member obtaining an Exclusive license pays 100% of Patent Costs.
- VI. Multiple members interested in commercializing the IP may negotiate for a Co-Exclusive (Limited to CENTER MEMBERS ONLY) fee-bearing license (includes royalty), again paying 100% of Patent Costs.
- VII. If no MEMBER wishes to obtain a license, UNIVERSITY is free to market the invention to non-GRAPES companies.
- VIII. Copyright registration shall be obtained for software developed by CENTER. COMPANY shall be entitled to a nonexclusive, royalty-free license to all software developed by CENTER for internal use only. COMPANY will have the right to enhance and to re-market enhanced or unenhanced software with royalties due to CENTER to be negotiated, based on the worth of the initial software, but not to exceed 25% of a fair sale price of the unenhanced software product sold or licensed by COMPANY or 10% of a fair sale price of the enhanced software product sold or licensed by COMPANY.
- IX. Any royalties and fees received by UNIVERSITY under this Agreement, over and above expenses incurred, will be distributed per the UNIVERSITY Inter-Institutional Agreement (IIA) and/or the respective royalty sharing policies of the respective university sites.
- X. Neither party is assuming any liability for the actions or omissions of the other party.
- XI. Member Eligibility for IP Licensing
 - A. IP sharing rights are limited to center members in good standing (i.e., signed Membership Agreement, Signed NDA in place and paid-up dues) at the moment of disclosure and the moment of the IP offer (receipt of GRAPES IP RIGHT OF FIRST REFUSAL form).



- B. Members who leave the center before the moment of the IP offer are not eligible for IP rights based on their prior membership.
 - C. Members who join after the moment of the IP offer are not eligible for the IP rights based on their membership after the fact.
 - D. In the event that no GRAPES member chooses to develop the IP (per GRAPES IP RIGHT OF FIRST REFUSAL form) the University, at its discretion, is free to license the IP rights to any entity, including members described in B and C above.
- XII. Process for IP Licensing
- A. Within a period of 30 days of receiving notification from the inventor(s) of an invention disclosure filing, the GRAPES center 1) sends a written notification to the INDUSTRIAL ADVISORY BOARD advising them of same said invention disclosure and 2) also provides access to a GRAPES IP RIGHT OF FIRST REFUSAL form which allows members to indicate their intent to pursue licensing of said disclosure. Members have a period of sixty (60) days to act on their first right of refusal.
 - B. Within 30 days of notification from the GRAPES center, a conference call will be held in which interested IAB members will be able to call in and discuss the invention disclosure in detail.
 - C. At the end of the 60-day period (beginning with the first date of access to the GRAPES IP RIGHT OF FIRST REFUSAL form), all executed GRAPES IP RIGHT OF FIRST REFUSAL forms will be summarized. **Any forms received after this 60-day period ends will not be considered.**
 - i. In the event that no Member expresses interest to pursue licensing, UNIVERSITY reserves the right to develop the IP and License it outside of GRAPES.
 - ii. In the event that only one member expresses interest to pursue Non-Exclusive Rights, that member will have the option to pursue a Fee-Bearing Exclusive Rights License for commercialization of the said disclosure. The cost of that License will be negotiated by the Universities and that member. It is the role of the Executive Director to ensure that the fees negotiated represent an equitable settlement for GRAPES, the universities and the member obtaining Exclusive Rights Licensing.
 - iii. In the event that two or more members express interest in pursuing Non-Exclusive Rights for internal use, the costs of development will be shared equally between Members and each will retain non-exclusive internal use rights.
- XIII. Any scenarios not specifically covered in I-XII or Table 1 are subject to negotiation.

Table 1: GRAPES IP Summary



| License Type | Licensed Use | Licensee Pays Patent Fees and Associated Costs? | Licensee Pays Royalty Fees? | GRAPES IP RIGHT OF FIRST REFUSAL form (ROFR) and Negotiation | IRS Tax Constraints? | Is University free to license to entities outside of GRAPES? |
|--|--|---|-----------------------------|--|---|---|
| GRAPES Non-exclusive License | Internal use by GRAPES members | Yes | No | ROFR accepted by multiple members that ARE NOT interested in commercial use of IP. Negotiation of Non-Exclusive license terms for internal use only. | No | Yes. Since no GRAPES Member is interested in commercial licensing of the IP, University is free to issue non-exclusive license outside of GRAPES. |
| GRAPES Co-Exclusive License | External/Commercial use by multiple GRAPES members | Yes | Yes | ROFR accepted by MULTIPLE members that ARE INTERESTED in commercial use of IP. Negotiation of Co-Exclusive license terms. | Yes. Negotiation is based on market value of IP | No |
| GRAPES Exclusive License | External/Commercial use by single GRAPES member | Yes | Yes | ROFR accepted by SINGLE member that IS INTERESTED in commercial use of IP. Negotiation of Exclusive license terms. | Yes. Negotiation is based on market value of IP | No |
| University External Commercial License | External/Commercial use by NON-GRAPES entity | Yes | Yes | NO ROFR ACCEPTED by GRAPES members. University offers license(s) to external entities. Negotiation of license terms w/ | Yes. Negotiation is based on market value of IP | Yes. Since no GRAPES member is interested in the licensing of the IP, University is free to license outside of GRAPES. |



| | | | | | | |
|--|--|--|--|--------------------|--|--|
| | | | | NON-GRAPES entity. | | |
|--|--|--|--|--------------------|--|--|

Scenarios not specifically covered above are subject to negotiation
 Basis: University Policy, State and Federal Laws. Subject to change
 Federal tax reference: 26 CFR 1.41-3, Sections 6.02, 6.03 (relating to protection of tax-exempt bond status of Universities)

22. Benefits to Members

1. Access to cutting edge research, grad students and University faculty.
2. Ability to collaborate and to leverage research investments.
3. All Members will have non-exclusive rights to the entire GRAPES research portfolio under the conditions outlined in the Membership Agreement. Reports, papers, theses, dissertations, and the like produced as the result of the Center's programs, including those which have commercial value, will be made available free of charge to Members in a timely manner, subject to foreign export and confidentiality restrictions as well as other restrictions that may be imposed by a sponsor.
4. All Members will have an opportunity to directly contribute to GRAPES research and education programs by serving as industrial mentors and/or thesis committee members as appropriate and consistent with the policies and procedures of participating Universities. Members will have ongoing interactions with and access to the Center, including its faculty staff and students.
5. All Members will have an opportunity to propose case study problems, specific research problems, and focus areas for research. Additional benefits may be established by bylaws approved by the Board of Directors.

23. Administration

Administrative Support Staff: Each University will provide a reasonable level of clerical and accounting support for the operation of the Center.

The Site Directors at the Lead and Participating Universities will be responsible for Center activities at their university and will report directly to their respective appropriate university administrators and to the Executive Director. The Site Directors will provide a liaison between the Center and the appropriate academic departments of the member universities.

If a Site Director becomes unable to serve, the participating university will appoint a successor director subject to confirmation by the other Site Director(s) and Executive Director of the Center.

24. Center Reports, Website Communications and Publicity



The Managing Director, with content provided by Site Directors and the Executive Director, shall provide a semi-annual report to the Members and to the National Science Foundation.

The Site Directors and Principal Investigators shall provide interim reports to the Managing Director, Executive Director and to the Members as necessary at the completion of major research tasks. These interim reports will be distributed via the Center web site and e-mail notification to all sponsors once posted.

No advertising or publicity matter having or containing any reference to either party or any of its respective divisions, units or affiliated institutions shall be made use of by the other party or anyone on the other party's behalf unless and until the same has first been submitted to and received the approval by the other party. Neither party shall release material containing the name of the other party (or any of the other party's employees) without prior written approval by an authorized representative of the other party, nor shall said approval be unreasonably withheld.

25. Resolution of Conflict

All administrative issues, concerns or conflicts regarding the activities of research and reporting are the ultimate responsibilities of the Executive Director.

26. [Use of Names \(Amended May 24, 2017 – moved from Membership Agreement\)](#)

No advertising or publicity matter having or containing any reference to either party or any of its respective divisions, units or affiliated institutions shall be made use of by the other party or anyone on the other party's behalf unless and until the same has first been submitted to and received the approval by the other party. Neither party shall release material containing the name of the other party (or the names of the other party's employees) without prior written approval by an authorized representative of the other party, nor shall said approval be unreasonably withheld.

27. [Notices \(Amended May 24, 2017 – moved from Membership Agreement\)](#)

All notices required or desirable hereunder shall be given by **first class certified mail, postage prepaid**, to the following addresses or such other address as shall be designated in writing by the Parties from time to time.

28. [Address for GRAPES I/UCRC \(Amended May 24, 2017\)](#)

Dr. H. Alan Mantooh, Executive Director, GRAPES I/UCRC
University of Arkansas
1475 W. Cato Springs Road, Rm. 211
Fayetteville, AR 72701

