



CIAN Management Structure



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Research Management Structure

CIAN'S MANAGEMENT Organization is structured to: (1) select, focus, and direct research activities; (2) manage the ERC's technical and other relationships among participants, with other institutions, and with the public; (3) plan, select, develop, and evaluate educational and outreach programs; (4) enhance industrial membership, particularly for small companies; (5) encourage and foster the development of intellectual property derived from CIAN's translational research with an ultimate goal to create new start-up companies and jobs; and (6) encourage and create a culture of innovation and entrepreneurship in the Center.

(A) Executive Committee (EC) meets biweekly (via teleconference) and includes the Center Director, Deputy Director, the Administrative Director, the research Thrust leads and co-leads, the Education/Outreach Director, the Pre-college Education Director, the Diversity Director, the Industrial Collaboration and Innovation Directors, and the Testbed Director. The Executive Committee coordinates responsibilities including making all general decisions regarding issues of research budgets, Testbed development and usage of facilities, program direction by Thrust and by Working Group, and reviewing, suggesting and modifying, long-term research goals. This committee also discusses the introduction of new seed projects. The EC committee manages the CIAN ERC systems level engineering roadmap. The Executive Committee in associate with the Technical Programming Committee has established metrics for the review the Projects and conducts ongoing review to determine which Projects should be graduated, continued, or dropped.

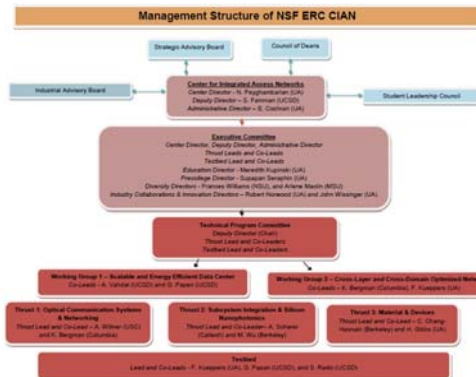
(B) Technical Program Committee (TPC), chaired by the Deputy Director, includes the Thrust Leads, Thrust co-leads and the Testbed Director. The TPC is charged with fostering the systems level vision and direction of CIAN. It does so in conjunction with CIAN's Working Groups. The committee examines and formulates new research initiatives within the Center that forms the basis of future research areas. All center projects are reviewed critically by this committee following a rating system based on the following metrics: industrial endorsement, intellectual merit/transformational research, synergy across Thrusts, plans for Testbed insertion, broader impact, student participation, participation in the center activities, and balance between long-term and short-term goals. The TPC is continually assessing the quality and impact of the various Projects in progress, as well as assessment of future directions as to how to best achieve CIAN's transformational system level goals.

(C) Working Groups (WG) – CIAN's FY1 NSF Panel Reviewers expressed or suggested areas of improvement for CIAN in terms of further refinement of the strategic plan vertically across Thrust and Projects. As a result, CIAN formed what is now referred to as CIAN's two Working Groups (WG1 - Scalable and Energy Efficient Data Center and WG2 - Cross-layer and Cross Domain Optimized Networks). The efforts of the Working Groups, achieved via the workshops they have conducted, are directed to the identification of the key trends, technical requirements, and challenges (bottlenecks), as well as matching the desirable outcomes with CIAN's present and future Project capabilities. Accordingly, these groups have each produced a strategy document that defines activities for CIAN that most closely match industry challenges as well as targeting significant transformational technologies to impact future access and aggregation networks.

(D) The Testbed Director, Frank Kueppers, chairs a sub-committee charged with managing the CIAN Testbed and advises the EC, WG and the Center Director about CIAN Testbed needs and capital equipment purchases required and Testbed maintenance. The Testbed Director presents the design of the Testbed experiments in the strategic plan to the TPC with specific requests to Thrust Leaders and Co-leaders for the elements that need to be developed and inserted into the Testbed. CIAN's Testbed also works closely with the CIAN professor of practice whose expertise is in optoelectronic packaging of devices into subsystems.

(E) Thrust Leads and Co-Leads. CIAN is organized into three Thrusts: Thrust 1 Optical Communication Systems and Networking, Thrust 2 Subsystems Integration and Silicon Nanophotonics, and Thrust 3 Materials and Devices. Within each Thrust are a number of Projects that can be grouped generally into the following fields: Cross-layer Optimization, Data Centers Architectures and Systems, Data Introspection, Silicon Photonics Integration, Heterogeneous Integration, Optical Splice, WDM sources, Switching and Modulator Components, Tunable Filters and Dispersion Compensation, and Quantum Devices. The Thrust Leads and co-leads actively manage the Projects within their Thrusts determining when and where technology demonstrations can migrate to the Testbed for proof of concept demonstrations.

Organizational Chart



Three-Level Diagram



Industry



Working Groups



Education



Advisory Committees

Strategic Advisory Board (SAB)



Industrial Advisory Board (IAB)



Strategic Planning/Management Procedures

Strategic Planning & Project Selection

Strategic planning direction: Technical Program Committee (TPC) is an expert in cross-layer design of wireless-optical interfaces. IAB provides industrial oversight, direction, and monitoring of CIAN activities and activities, and SWOT analysis. IAB guides CIAN for project selection, and SWOT analysis. IAB chairs CIAN for technology transfer, and industrial introductions. IAB meets biannual. IAB needs financial. CIAN is exploring a tiered membership fee. Current Members: Agilent, P&G, Fujitsu, Intel, Xilinx, Lumine, NXP, HP Photonics, TPC, Yokogawa.



Project Evaluation

Project Evaluation: TPC performs annual formal project reviews which assess the progress and relevance of each direct funded CIAN project, considering its appropriateness and its contribution to CIAN's overall mission and feedback also under advisement. IAB "SWOT" analysis report, examines the Center's strengths, opportunities, and threats, specifically the research program is critically evaluated. Projects that do not show relevance/progress shall be "taken-out gradually", recognizing the impact as the determination of projects on undergraduate and graduate students. All the determination of the TPC, new SEED faculty are encouraged to participate in existing research or to develop new research projects. The CIAN Center seeks to identify additional funding sources, which will provide synergistic Associated projects, to further enhance CIAN's translational research program.



SEED Projects

SEED projects initiated in Year 2: Gil Zussman, Electrical Engineering, Columbia University, Gil is an expert in cross-layer design of wireless-optical interfaces. Diana Huffaker, Electrical Engineering, UCLA. Diana brings expertise in tertiary and quaternary semiconductor nanofabrication and is working on a program to realize high-Q nanostructures. Galina Khitrova, Professor Optical Sciences, UA. Galina has expertise in patterned growth of quantum dots for planar integration of optical components. Vitaliy Lomakin, Electrical Engineering, UCSD. Vitaliy brings expertise in the develop of optical software and modeling tools.

Intra-Center Communication

Intra-Center Communication: Bi-monthly MT conference call. Monthly education conference call and meeting. Bi-annual IAB meetings, at NSF annual site visit and mid year. Annual SAB meeting. Annual center-wide 3-day retreat. Student-Postdoc exchange program (Dusigang). CIAN data-collector and public website assist to coordinate, collaborate and communicate.

Student Leadership Council (SLC)

Is chaired by Adam Jones of UA. Consists of graduate & undergraduate students from lead and partner universities. Meets regularly to coordinate student activities, participate in outreach activities, provide input to CIAN Management Committee & Director for strengthening CIAN research and education programs. Help in teaching summer courses to our education partner institutions. Develops annual plan and budget; makes requests to Management Committee. Planning to make novel optical network for CASAs Doppler Radar application.

Infrastructure

Council of Deans: Deans from CIAN partner institutions. Chaired by the VP Research at UA. Meets annually ensuring CIAN is well integrated into the research, education and diversity. Works with CIAN Management Committee to enhance/modify the curriculum. Internal Academic Policy Board: Consists of UA VP of Research, UA Deans of College of Engineering, College of Optical Sciences, and College of Science. Will advise CIAN Director on implementation of CIAN plans & directives and coordinate with university's mission to facilitate. Determine possible successor for CIAN Director, if problems should arise.

Financial Support

University Financial Support

University Financial Support: A lead cost share commitment of \$1,077,500 for the first 3 years. Building new ERC: Best thing we have got out of them are dedicated to CIAN's development. Three new faculty hire from UA. CIAN is a key element in UA's strategy for the next 5 years. Member institutions committed to promote and recognize the collaborative efforts of their faculty.

Budget

Category	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Operating	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500
Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500	1,077,500



Summary

CIAN brings together leading researchers and educators at world-class institutions to tackle the last bottleneck in Internet and create truly transformational systems that are of critical importance to the foundation of our national information infrastructure.

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