



ARUBA LABS & THE GREEN ISLAND™ PROJECT FAQs

What is Aruba Labs?

Aruba Labs is an adjunct of Aruba's Office of the Chief Technology Officer (CTO) that was created to foster research on Wi-Fi networks and the all-wireless workplace. The Lab's programs include the Developers Program, the Advanced Directed Research Program, and the new Green Island Project.

Aruba Labs follows an open source community model in which research results are shared and ideas openly exchanged. Projects encompass a wide array of technical, sustainability, economic, and defense-related subjects.

Aruba Labs offers many resources with which to assist researchers including:

- Application and hardware development kits
- Aruba wireless LAN equipment
- Mentoring
- Internships
- Teaching materials
- Webinars and lectures
- Direct assistance from Aruba Labs engineering personnel
- Aruba Foundation funding assistance

What is the Aruba Labs Developers Program?

The Developers Program distributes open-source software development kits and application programming interfaces created by Aruba Labs to enable partners to rapidly prototype new wireless applications. These Windows and Linux-based tools enable developers to overcome platform and driver restrictions that limit adding new functionality to Wi-Fi networks.

Any organization can apply for membership in the Developers Program.

What is the Aruba Labs Advanced Directed Research Program?

The Advanced Directed Research Program is an invitation-only program for partners that wish to work hand-in-hand with Aruba Labs' engineers on challenging, blue-sky problems. The program encompasses sponsored research, joint development work, and grant-funded programs to explore the boundaries of wireless networking.

By way of example, the Dartmouth University Measure/Analyze/Protect (MAP) project entailed joint development work by Dartmouth and Aruba Labs on an integrated and extensible framework to address attacks on Wi-Fi networks. The research entailed building a policy-driven protection engine that leverages existing defense mechanisms to measure and analyze Wi-Fi VoWiFi activity, and in real-time identify and defend against MAC- and IP-layer infrastructure attacks. The program entailed three overlapping phases: research, prototype development, and (optionally) deployment on Dartmouth's campus-wide wireless network.

Due to the demanding requirements of the Advanced Directed Research Program, only a very limited number of projects are selected.

What is The Green Island Project?

The Green Island Project is a new multi-disciplinary program to research how the migration away from wired networks to the all-wireless workplace affects sustainability issues such as energy and resource consumption, efficiency and productivity, and space and urban planning.

The project anticipates that changes in how and where we work as a result of 802.11n and other mobility solutions will have profound sustainability, economic, and social effects: reducing energy consumption by allowing the use of much smaller switches with fewer ports, allowing more varied architecture and space planning by eliminating data cabling considerations, and lowering carbon emissions and altering urban planning by enabling telecommuting.

This multi-disciplinary research project focuses on the micro- through macro-level impact of the resulting all-wireless workplace on individuals, institutions, and society.

The Green Island Project is open to all K-12 and higher education institutions that are Aruba customers, and to commercial institutions on a case-by-case basis.

What is the present focus of Green Island research projects for higher education and commercial institutions?

Research on all topics is encouraged, however, the following research subjects are of special interest and will receive greater consideration:

1. Sustainability: What are the differences in the resource footprint of an all-wireless workplace from the user, employer, campus, regional, national, and/or global perspective? Resources in this context include, but are not limited to, switches and routers, wiring closet and data center power supplies, utilities, heating/ventilation/air conditioning (HVAC) loading, carbon footprints, natural resource consumption, roads, and urban infrastructure.
2. User efficiency and productivity: Are there differences in the efficiency and productivity of mobile users equipped with wireless networking devices relative to users with equivalent wired networking devices? Are these differences significant enough to change the number of people employed to undertake specific tasks? The capital equipment required? The facilities required?
3. Space and architectural planning: What is the impact on space and architectural planning of moving to an all-wireless workplace? Will or can traffic flows change appreciably? Room and open plan layouts? Lighting? HVAC? Will these considerations impact workgroup collaboration and if so how?
4. Total cost of network/facility ownership: What is the lifetime impact on the total cost of ownership of a facility – including adds, moves, and changes – of an all-wireless workplace?

What is the present focus of Green Island research projects for K-12 institutions?

K-12 participation will typically involve individual, group, and class projects and presentations on the impact of workplace mobility on sustainability, productivity, and innovative uses of computer technology. Projects focused on all topics is encouraged, however, the following subjects are of special interest and will receive greater consideration:

1. Sustainability: What resources are consumed adding wired computer networks to schools? Do Wi-Fi (wireless computer) networks require more or fewer resources? How many natural resources (gasoline, carbon emissions, road construction, etc.) could be saved if workers telecommute (work remotely from home) instead of driving to work? What types and quantities of natural resources are required to enable your family members to commute to work? What about all of the workers in your city? Country?
2. Efficiency and productivity: What tasks could students, teachers, and staff accomplish using Wi-Fi (wireless) computers, computer projectors, and phones that would not otherwise be possible if these devices required data wiring?
3. Space and architectural planning: If you were designing a new school in which everyone used Wi-Fi networks, what, if anything, would be different from a school wholly reliant on wired networks? Would classrooms have a different design? Libraries? Auditoriums?
4. Budgets: How much does it cost to add a new computer to a wired computer network? To a Wi-Fi network?
5. Technology: Wi-Fi networks have the ability to locate the exact position of the Wi-Fi computers, PDAs, iPhones, and other devices that are using the network. In what ways could you make use of this location information? Wi-Fi networks have the ability to send video camera images all over campus without installing any new wires. In what ways could you make use of video information from outdoor security cameras? Cameras located in lecture halls and auditoriums? In sports facilities?

How do I apply to The Green Island Project?

Contact The Green Island Project at greenisland@arubanetworks.com and request a Research Application Form. You may also contact us in writing at the following address:

Program Manager
The Green Island Project
Aruba Labs
1344 Crossman Avenue
Sunnyvale, California 94089
USA

How do I obtain additional information?

For additional information on Aruba Labs please go to labs.arubanetworks.com.

For information on The Green Island Project please go to www.arubanetworks.com/greenisland.