

## Budget Justification

### Salaries

The project budget provides two summer months salary support for the principal investigator and one summer month salary support for the two co-principal investigators for both years. The project budget supports three graduate students (GA 11 Step 3) for both years.

The three principal investigators will perform or supervise all major system design enhancements and empirical studies, and manage and train the graduate student assistant.

### Travel

The project budget provides funds for three trips per year from Hawaii to the mainland at \$3,000 per trip. These funds will be used by the principal investigators or graduate assistants to attend relevant conferences (BECC, ICSE) or CyberSEES project meetings.

### Materials and Supplies

The principal investigator directs the Collaborative Software Development Laboratory, which is currently equipped with one enterprise server and several workstations, along with a printer and networking peripherals.

The project budget provides funds of \$15,000 in year 1 and \$10,000 in year two to provide materials and supplies related to this research, including: (a) computers and storage for research data; (b) software for data analysis; and (c) cloud-based services; (d) design and manufacturing of power quality meters.

### Consultant

The project budget provides funds of \$10,000 in year 1 to support independent review and testing of the power quality meters for safety and accuracy.

### Cost breakdown

All calculations are rounded to the nearest dollar.

**Summer Salary.** The budget provides for two months of summer salary (\$26,222) for the principal investigator (Johnson), one month summer salary for co-principal investigator Fripp (\$10,556), and one month summer salary for co-principal investigator Spirandelli (\$8,222). A 2% increase is projected for year 2.

**Research Assistants.** The budget provides for three graduate research assistantships for each of the two years. The salary for each research assistant is based upon an 11 month RA-Step 3 salary (\$20,472), with a 2% increase in year 2.

**Fringe benefits.** Fringe benefits for salaries are calculated at 2.26% for the principal investigators and 9.34% for the graduate assistants.

**Overhead.** University of Hawaii overhead cost is calculated as 41.5% of Modified Total Direct Costs (MTDC), i.e. salaries, travel, and supplies (equipment is excluded).