

Engineering Student Technology Committee

<http://www.engr.colostate.edu/ESTC>

College of Engineering

Colorado State University

1. Title of Proposal: Digital Signage for College Computer Labs

2. Proposal Participants:

Primary Contact for Proposal

Name: Dan Herrick _____ E-Mail: dan.herrick@colostate.edu _____

Department/Major: Engineering Network Services _____

Check One: **Staff**

3. Proposal Abstract (limit to 100 words):

ENS asks the ESTC for one-time funding to install a digital signage solution for reserved computer lab and electronic classroom spaces.

4. Proposal Budget

List of items to purchase and cost of each

Cost per station (average): \$190

Raspberry Pi kit (includes clear case, memory, power supply): \$75

19" LCD monitor (from stock): \$0

VESA mounting kit for monitor: \$20

Video, network, power cabling/extension: \$35

Security cabling/mounting: \$60

Total Number of stations: 27

(Stations funded by Academic Village): 7

Number of stations funded by ESTC: 20

TOTAL COST: \$3,800

Dollar or percentage amount requested from ESTC: \$3,800.

5. Full description of proposal:

The college computer labs managed by ENS, and funded by ESTC, allow 28 areas (design studios, classrooms, or entire labs) to be reserved, via the ENS Lab Reservation tool at www.engr.colostate.edu/ens/tools/reserveroom/reservation. Currently, ENS student Lab Assistants distribute paper copies once per week to each of these areas, to show users when

reservations occur. When a user makes a reservation mid-week, however, these signs are not updated, sometimes causing confusion and conflicts for users of the labs.

Paper copies could be re-printed, of course, but this would cost approximately \$1.40 per week in printing costs alone, and labor. For comparison, this could cost almost \$73 per year (plus labor). We expect the digital signage solutions to last 5+ years.

Due to the high cost of a commercial digital signage system, ENS proposes to create a custom-made digital signage system, consisting of an LCD monitor and a Raspberry Pi with custom software, per station. The system would display a web page with reservation information for that particular reserved area, and would automatically refresh with new reservation information.

We would mount the system to the nearest wall or partition, secured appropriately, and cables run to Ethernet and power. Once setup is complete, these systems would require almost no maintenance.

The cost for the monitor is the most significant part of digital signage. Thanks to the ESTC's regular equipment replacement cycle, we still maintain a stock of LCD monitors, more than enough to supply for this project.

A prototype unit is available for demonstration.

Distribution

We would distribute the digital signage systems to the following labs and classrooms:

<u>Number of signs</u>	<u>Lab or Classroom</u>
2	Anderson Computer Lab (2 studios)
1	GIS Computer Classroom
3	ERC Design Studios (3 studios)
1	ERC Electronic Classroom
1	Internet Café (includes both meeting room and entire Café)
6	Magellan Design Studio (6 studios)
4	Scott Bioengineering Design Studios (4 studios)
1	Titan Studio Classroom
1	Viking Electronic Classroom
2	Academic Village Classrooms (2 classrooms)
3	Academic Village – Orion Design Studios
2	Academic Village Workrooms

Of the 27 total above locations, 7 would be funded by the Academic Village as a matching funding initiative.

Replacement Costs

The Raspberry Pi units are essentially mini-computers with no moving parts. As a relatively new technology, the lifespan of these units is unknown, but current estimates place it at a minimum 3-4 years. We do expect some minimal replacement costs as power supply units wear out, or SD cards wear out.

We expect the monitors to last at least 5 years. When we replace monitors in the computer labs per the normal ESTC equipment replacement cycle, we can reserve some monitors to replace failed digital signage units.

Given the above, we expect there will be minimal replacement costs associated with these systems.