Wireless Networking
(Continued support and expansion)

CAC Priorities Addressed:
1st – campus-wide proposals addressing student needs for campus computing capability
3rd – upgrading existing open access facilities

Proposing Unit:
IT Services – Networks and Communications

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Computation Advisory Committee
Call for Proposals
March 10, 2006
Wireless Networking

I. Project Overview

In 2003, the Computation Advisory Committee (CAC) awarded funds to the former Telecommunications Office to install and maintain 100 wireless access points allocated proportionally between the university colleges and the Department of Residence. These access points were installed in public gathering spaces frequented by students, not private areas. Because of timing and installation schedules, with CAC’s approval the funding actually covered 132 access points in total. The CAC support for this wireless infrastructure will end on June 30, 2006.

The (former) Telecommunications Office submitted funding requests to central university administration each subsequent year to expand wireless coverage on campus. No additional funding was awarded. In 2005, the university’s central information technology units (AIT, ATS, ITC, and Telecommunications) joined to form Information Technology Services (IT Services). IT Services has requested wireless funding again this fiscal year, but the budget situation does not appear favorable for the request at this time.

A thorough analysis of the CAC-funded access points has been performed and summarized on the attachment. Most of these access points are used quite heavily, with 20 of the top 25 most-used access points being in the public areas of the Residence Halls, where there is almost exclusive student use. Student wireless usage has grown steadily over the past 3 years with the total number of connections to CAC-funded access points topping 4,000,000 this academic year (2005-2006).

II. Budget

As IT Services has conducted client and campus community forums leading up to its recent reorganization, wireless access has been a top priority for students. Access to computer information “anytime, anywhere” continues to grow in importance as a key component of learning and communication. It is essential that the university’s wireless infrastructure be maintained and even expanded to meet the demands of new and existing students. For these reasons, we would like to offer three options for CAC to consider for fiscal years 2007-2009:

1. Continue to fund the 132 access points currently in place. The annual cost for each access point is approximately $400\(^*\), making the total cost approximately $55,000 per year. Over a 3 year period, this would come to $165,000.

2. Leave the top 100 most-used access points in place, and remove the 32 least-used access points. The annual cost would be approximately $40,000, for a 3-year total of $120,000.

3. Leave the top 100 most-used access points in place, remove the 32 least-used access points, and install new access points in higher-use areas for expanded coverage. Each new access point and supporting Ethernet connection would have a $100 install fee, then the same ~$400/year recurring fee. A reasonable number of access points to consider adding is 25-50, although any number can be accommodated.

\(^*\) The 100BaseT Ethernet service is $12 per month, and the access point is $20 per month for a total of $32 per month. The annual recurring charge is $384 per access point. In some cases, an in-room switch ($2/month) is required to allow wired connections as well as wireless. Thus, we have rounded to $400/year for discussion purposes. Actual costs would be incurred.
A table summarizing the budget options is below.

<table>
<thead>
<tr>
<th>Option</th>
<th># AP’s</th>
<th>$ / year</th>
<th>$ / 3 years</th>
<th>Install</th>
<th>3-Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>Continue funding existing AP’s</td>
<td>132</td>
<td>$53,000</td>
<td>$159,000</td>
<td>-</td>
</tr>
<tr>
<td>Option 2</td>
<td>Fund 100 most-used existing AP’s</td>
<td>100</td>
<td>$40,000</td>
<td>$120,000</td>
<td>-</td>
</tr>
<tr>
<td>Option 3</td>
<td>Fund 100 most-used, add 25 new AP’s</td>
<td>125</td>
<td>$50,000</td>
<td>$150,000</td>
<td>$2500</td>
</tr>
<tr>
<td></td>
<td>Fund 100 most-used, add 50 new AP’s</td>
<td>150</td>
<td>$60,000</td>
<td>$180,000</td>
<td>$5000</td>
</tr>
</tbody>
</table>

III. Frequently Asked Questions

1. **If the CAC has been funding 132 access points for 3 years, why aren’t they paid for by now?**
   The recurring charges paid to Networks and Communications are not only used to recover the initial investment in the access points but also to maintain the access points over time. Since these access points were installed in 2003, there have been two major upgrades in equipment: to increase network speed (802.11g) and to provide a larger coverage area. In addition, IT Services help desk staff are available to help with configuration issues, and technicians are on call 24 hours a day to maintain connectivity.

2. **Why doesn’t IT Services pay for wireless?**
   The Networks and Communications unit of IT Services is a self-supporting enterprise. Recurring fees are needed to recover up-front equipment costs, maintenance fees, and support.

3. **Why doesn’t each college or department pay for their own wireless?**
   Frequently, access points are located in public areas that are not the responsibility of any one department or college. Student, faculty, staff, and others from all parts of campus have ubiquitous access through any access point to the campus network and the Internet.

4. **What percent of the CAC-funded access point usage is by students?**
   The percent of student use was calculated based on the network ID entered when the computer was first registered on campus. This criteria reflects a low, inaccurate estimate of student use because some help desks register student computers in bulk, and many students are also employees of the university. Our best information tells us that about 50% of the overall connections are to registered students.