Campus Wireless Network Refresh

Background

The wireless networks supporting the UCSF enterprise have grown over the last 10 years from independently managed team and departmental installations to the centrally managed
enterprise solution. This wireless expansion project is intended to “correct and unify wireless for the future”.

The existing wireless network infrastructure is a complex mixture of Aruba and Cisco wireless equipment that has evolved over the last 10 years. There have been several wireless initiatives during this period of time ranging from:

- Providing wireless coverage only in public areas, instructional areas and meeting rooms, to
- Initiatives intended to provided 100% wall-to-wall coverage throughout the UCSF enterprise, and
- Initiatives to upgrade legacy wireless hardware to most current versions

While the wireless infrastructure has continued to improve, there are several factors that contribute to an inconsistent level of service being provided to UCSF’s users. Specific steps are required to provide a uniform level of quality service at the completion of this project. For example,

- Expand the current wireless architecture to support a growing wireless network throughout the UCSF enterprise
- Adherence to specific UCSF wireless design standards wherever wireless is installed
- Re-allocation of wireless access point devices so that the same model is utilized throughout a floor or entire building
- Conducting wireless design surveys based on new design standards and performing remediation or build-out to achieve 100% wall-to-wall coverage

In addition to improving the wireless coverage, a separate UCSF initiative is underway to upgrade all legacy data network equipment to increase throughput and provide great reliability. Areas in many locations are limited to 100Mb and, in some cases, groups of up to 100 all share 100Mb connections to the building. The wireless network does not provide full coverage, and in areas shares the same 100Mb network as the existing users. The existing network cannot reliably support Voice or Video over IP or the high-speed requirements of our research community and this impacts all aspects of the University experience.

**Project Objectives**

The primary objective of this project is to modernize the UCSF wireless data network to meet the current and forecasted needs of UCSF’s clinical, educational and research communities to support the mission and goals of the institution.

To meet this objective the following goals have been set:

- Standardize and simplify the UCSF core wireless infrastructure while providing greater flexibility
- Install a uniform, scalable technology foundation to support future wireless initiatives
- Install and/or replace wireless access point devices to ensure wall-to-wall service in UCSF facilities
- Improve mobility for users having to no longer go where a hard-wired data connection
exists, but instead may now work anywhere
- Redesign and redeploy wireless management and monitoring systems to standardize user experience and improve stability
- Where required, design and install a wireless solution to provide exterior common area wireless coverage (greens, quads, courtyards, etc).

Business Need and Business Benefits

The lack of a fully available and reliable wireless network places a burden on staff as well as the physical infrastructure with the need to connect computers and devices for data connectivity. Providing full wireless coverage will provide the following benefits:

- Improved system performance and greater system reliability
- Support for wireless lab equipment reducing hazards through the removal of network cables and adding flexibility in the location and number of lab equipment.
- Improved mobility for users who no longer have to go to where a network cable exists but can instead work anywhere
- Reduced cost in installing and maintaining physical infrastructure

Additional Materials

Presentation to IT Technology Forum, June 2017:


UCSF RF Design Standards:

UCSF RF Design Standards [2]

Campus Wireless AP Migration Plan (list of buildings in project scope):

Campus Wireless AP Migration Plan [3]

For More Information

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