Scope of Work for Angus-Hamer Networking Inc.
At City College of San Francisco
July 1, 2002 - June 30, 2003

Angus-Hamer Networking will provide technical assistance to CCSF Information Technology Services in the operation of the current network system and deployment of new and enhanced network tools and services.

Scope of Work

Under the direction of CCSF Information Technology Services Network and Systems Managers, Angus-Hamer staff will provide technical assistance in the UNIX, networking and Wintel server (NT, Windows 2000) technologies. This assistance is focused on key project areas and system migrations necessary to maintain the uptime, supportability and performance of the CCSF network.

As required, the technical assistance will take place during scheduled onsite visits to CCSF, through remote network connectivity, during telephone/email communication, or as off-site project work. CCSF ITS will identify ITS staff to work with Angus-Hamer technicians in the requirements definition, development and implementation phases of all project work.

As dictated by each specific project, Angus-Hamer will assign staff with the appropriate technical background and experience. For continuity, Angus-Hamer intends to assign staff who have work with CCSF in previous projects; however, Angus-Hamer will be flexible in assigning new specialists to accommodate the changing ITS project requirements.

During the delivery of these services, Angus-Hamer consultants will report to either Doug Re, ITS Systems Manager, or Tim Ryan, ITS Network Manager, for status updates and direction. Deliverables will be presented to these managers as appropriate for each project area. Angus-Hamer will work under the direction of CCSF ITS management and in conjunction with CCSF ITS staff to set project timelines and achieve a smooth and robust transition for each migration project.

Objectives and Tasks

1. Firewall Migration - To ensure the successful migration of the CCSF ITS Firewall from its current Raptor/HP platform to the new Nokia/Checkpoint system.

Tasks:

   a) Review the architecture of the new Firewall solution.
b) Analyze and document current Raptor Firewall rule sets.
c) Convert Raptor Firewall rule sets to Checkpoint environment.
d) Customize the Checkpoint environment for CCSF security and operational needs.
e) Implement a simulation test lab for prototype testing of the new firewall environment.
f) Cutover new Checkpoint system, with onsite cut coverage for response to immediate issues.
g) Provide performance review of new Checkpoint system under CCSF production load. Ensure that the new system configuration is appropriately modified for optimal performance.
h) Document the new Checkpoint Firewall environment.

**Deliverables:**

- New Checkpoint firewall system installed, configured and running at its optimum.
- Raptor Firewall off-line.
- New Firewall system configuration documented.

2. **Windows 2000 Migration** - Angus-Hamer Networking will provide technical resources in the planning and migration to Windows 2000.

**Tasks:**

a) Architecture planning and refinement of the domain model for the Windows 2000 migration. Review of current NT domain model across all campuses. Design of new domain(s) reflecting the CCSF organization work purpose, communications requirements, and security.
b) Review of Directory Services Structures (AD, LDAP, NDS, etc.), their applicability to CCSF.
c) Review and testing of interoperability and compatibility with non-Microsoft DNS and directory servers.
d) Formulation of detailed technical architecture, including server purpose, technical components, application services and location.
e) Review of detailed architecture with CCSF ITS staff.
f) Migration of CCSF servers to new domain/services model, including cut coverage.
g) Performance monitoring of new servers.
h) Documentation of Servers and architecture

**Deliverables:**

- Domain Design documents
- Servers configured and installed
- Documentation of new Windows 2000 environment.
3. Network Tools Enhancements - Angus-Hamer will work as directed to enhance and optimize the CCSF ITS network environment.

**Tasks:**

a) The specific project areas will be identified by CCSF ITS Management. Project areas may include:
   i. DNS and DHCP
   ii. HP OpenView
   iii. MRTG and NetSaint monitoring tools
   iv. HP switch and cisco router operation

**Deliverables:**

a) Detailed deliverables will be defined as projects are identified.