

Office of the Chief Information Officer FM/EUS Statement of Work		
COTR	Task Title	Task Manager
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1. BACKGROUND

The United States Patent and Trademark Office (USPTO) is located in Arlington, Virginia and is geographically dispersed across an eighteen building campus. PTONet currently provides connectivity to over eight thousand (8000) nodes.

PTONet is a Local Area Network (LAN) comprised of an Asynchronous Transfer Mode (ATM) backbone which interconnects the buildings. The core backbone resides in USPTO's computer facility located in Crystal Park II. Each building has redundant ATM switches (building switches) located in the main telecommunications closet of that building that connect to the core backbone switches. Hubs located in telecommunications closets on each floor are redundantly connected to each building switch. Individual nodes are attached to the hubs.

PTONet also provides several wide-area network (WAN) links, or external connections, supporting the following activities:

- Internet connectivity
- contractors supporting USPTO
- connectivity to commercial automated information systems (AISs)
- PTONet services to employees working at home or on travel
- PTONet services to Patent and Trademark Dissemination Libraries (PTDLs)
- connectivity to foreign Patent offices (EPO/JPO)

PTONet's physical transmission media is comprised of both fiber optic and copper twisted pair cable. Fiber is used to interconnect buildings and closets and to attach high-speed servers to PTONet. Copper twisted pair cable extends from the hubs on each floor to individual nodes.

Several Network Operating Systems (NOSs) support USPTO's workstation and application environment providing network services, file and print services, office automation applications, e-mail and software distribution services. These services are critical to the daily operation of USPTO.

Network Operations Division (NOD) is responsible for the operation and maintenance of USPTO's:

- LAN and WAN infrastructure
- network and office automation servers
- fiber optic and copper cable plant

NOD must support the rapid growth of the network while ensuring reliability. NOD must provide centralized operation, management, administration, installation, maintenance, and technology insertion of USPTO's network infrastructure, network and office automation servers, and cable plant.

2. STATEMENT OF WORK REQUIREMENTS

GENERAL

- (1) The Contractor shall provide resources with expertise in the latest network technologies employed by USPTO.
- (2) The Contractor shall not make any changes, modifications, alterations, or enhancements to USPTO's infrastructure, hardware, or software without detailed change records being approved by USPTO. In addition, the Contractor shall abide by all Service Level Agreements (SLA) and Standard Operating Procedures (SOP) established by USPTO.
- (3) The Contractor shall create a service request record in a USPTO provided maintenance tracking system for all calls received from customers or problems identified by CBSI. The tracking systems shall serve as the central repository of information used by information systems personnel in resolving calls throughout USPTO. The Contractor shall assign the call, as appropriate, for resolution and/or action. The Contractor shall inform the customer that the service request has been resolved. The Contractor shall close out all calls in USPTO's tracking system upon problem resolution.
- (4) The Contractor shall assure that all users are notified, as appropriate, of the release of system changes (e.g. software upgrades) at least five (5), and also one (1) business day, prior to installation, by, for example, placing a notice in Public Folders.
- (5) The Contractor shall provide baseline configuration, documentation, deployment strategy, and training for all enhancements and changes.
- (6) The Contractor shall develop, maintain, ensure the currency, centrally store and adhere to Technical Notes and Standard Operating Procedures (SOPs) that detail Network Operations.
- (7) Any equipment placed into service shall be a fully functional and performance level equivalent to equipment removed for repair. Replacement equipment shall have supported software loaded, configured, and peripherals attached.

- (8) The Contractor shall participate in technical evaluations of proposed new hardware, software, and networking technologies at USPTO. The Contractor shall work with USPTO to certify the serviceability and maintainability of network technologies introduced.
- (9) The Contractor shall utilize the Psion units to record all hardware changes for property management purposes and to document work performed.
- (10) The Contractor shall meet standards of customer satisfaction established by the USPTO. Customer satisfaction measurements measure Contractor staff attributes such as professionalism, courtesy, expertise, attitude, and helpfulness.

NETWORK OPERATIONS CENTER SUPPORT

- (11) The Contractor shall provide 24 hour per day, 7 day per week (24x7) Network Operations Center (NOC) monitoring and reporting (excluding Thanksgiving Day, Christmas Day and New Years Day). This includes first level network operations support (network infrastructure, network cabling, network office automation server).
- (12) The Contractor shall operate, maintain and upgrade as necessary USPTO's Network Management System (NMS). USPTO currently utilizes HP-Openview Network Node Manager operating on HP-UX operating system to perform this function. HP Openview is based upon Simple Network Management Protocol (SNMP) and Remote Monitor (RMON) protocols. The Contractor shall provide monitoring and reporting for all network devices managed by the NMS. The Contractor shall ensure maps on the NMS are accurate and up to date.
- (13) The Contractor shall perform enterprise management of USPTO automated information systems (AISs). The contractor shall use NOD's Network Management System (NMS) to perform this function. The Contractor shall work with other USPTO offices to identify events that should be monitored and modify NMS maps as necessary to successfully monitor events on those AISs. The Contractor shall respond to events and outages on those systems, contact designated individuals responsible for supporting those systems, escalate as necessary, and report on the progress of restoration. Procedures for such action are outlined in the Operational Support Plans (OSPs).
- (14) The Contractor shall perform a Root Cause Analysis (RCA) for network problems when requested by USPTO.

- (15) The Contractor shall perform periodic (hourly, per shift, daily) functional and performance testing of existing production network components, paths, networks, sub-networks, systems and software as required. Verification of all tests shall be recorded in an operations log. The contractor shall follow existing standard operating procedures (SOPs) to perform tests and will modify the SOP as required to support new tests as well as to terminate tests on systems no longer in production.

NETWORK MANAGEMENT SUPPORT

- (16) The Contractor shall provide on-site network infrastructure support Monday through Friday, from 6:30 AM to 10:00 PM (excluding Federal Holidays observed by USPTO). When on-site support is required outside of these hours, the contractor shall follow established escalation procedures to arrive within 60 minutes of notification by the NOC.
- (17) The Contractor shall provide day-to-day operation, maintenance and system administration of USPTO network infrastructure devices. This includes but is not limited to hardware and software on routers, hubs, switches, encryption devices, and security devices. The Contractor shall respond to and fix network problems. These services shall be performed twenty-four (24) hours a day, seven (7) days a week, excluding Thanksgiving Day, Christmas Day, and New Years Day. The Contractor shall gather network performance and statistical data for problem analysis. The Contractor shall troubleshoot network problems by responding to trouble calls, performing fault isolation and restoring service.
- (18) The Contractor shall find and accurately report all network infrastructure problems within ten (10) minutes of a failure. The Contractor shall arrive on site to resolve the problem within 15 minutes after first discovery of the problem. The contractor shall resolve ninety-five percent (95%) of all network infrastructure problems within one (1) hour of the failure.
- (19) The Contractor shall perform capacity management of PTOnet, to include the installation, configuration, testing, maintenance and de-installation of network infrastructure hardware and software as necessary to support increased or decreased PTOnet requirements.
- (20) The Contractor shall be responsible for placing into production all network infrastructure devices at USPTO. This includes, but is not limited to receipt, initial inventory, set up, burn-in, testing, software loading, and deployment of hardware. In performing these services, the Contractor shall adhere to policies and procedures as established by/with USPTO.

- (21) The Contractor shall perform performance management on network infrastructure devices at the USPTO as needed. Such analysis may include, but is not limited to: measurement of current traffic on existing production networks; network traffic load balancing and segmentation; determination of maximum device load for segments and servers; isolation of systems that degrade PTOnet performance; and evaluation of performance management software packages.
- (22) The Contractor shall perform configuration management of network infrastructure devices operated by Network Operations Division. This includes updating CAD drawings of the Network, fiber optic schematics/databases, IP addresses and DNS name space databases. It also includes maintaining baseline hardware and software configurations for all network infrastructure devices and network and office automation servers. The Contractor shall ensure all hardware and software adhere to the established baseline unless otherwise directed by USPTO.
- (23) The Contractor shall perform security management of network infrastructure devices, to include maintenance of accounts. The Contractor shall adhere to USPTO security policy, conduct security audits as requested by USPTO, and modify baseline configurations to eliminate potential threats.
- (24) The Contractor shall support the operation of USPTO's firewalls, to include the operating system, and the support of the Checkpoint firewall software. The Contractor shall not be responsible for the addition and deletion of accounts associated with the firewalls.
- (25) The Contractor shall be responsible for upgrading network infrastructure hardware/software/firmware as directed by the COTR or designee. The Contractor shall produce an Installation Plan for all upgrades. Upgrades approved by the USPTO shall be installed by CBSI. The USPTO shall provide hardware and software used in the upgrade.
- (26) The Contractor shall support the USPTO Office of Systems Architecture and Engineering (OSAE) as required during the implementation phase of major network engineering tasks.

NETWORK AND OFFICE AUTOMATION SERVER SUPPORT

- (27) The Contractor shall provide on-site network server administration support Monday through Friday, from 6:30 AM to 6:30 PM (excluding Federal Holidays observed by USPTO). When on-site support is required outside of these hours, the contractor shall follow established escalation procedures to arrive within 60 minutes of notification by the NOC.

- (28) The Contractor shall provide day-to-day operation, maintenance and system administration of USPTO network and office automation servers. This primarily focuses on but is not limited to Windows NT servers, Microsoft Back Office suite of products, and third party commercial off the shelf (COTS) applications that support Windows NT server. The Contractor shall respond to and fix network and office automation server problems. These services shall be performed twenty-four (24) hours a day, seven (7) days a week, excluding Thanksgiving Day, Christmas Day, and New Years Day. The Contractor shall gather server performance and statistical data for problem analysis. The Contractor shall troubleshoot server problems by responding to trouble calls, performing fault isolation and restoring service.
- (29) The Contractor shall find and accurately report all network and office automation server problems within ten (10) minutes of a failure. The contractor shall resolve ninety-five percent (95%) of all network and office automation server problems within one (1) hour of the failure.
- (30) The Contractor shall perform performance management on network and office automation server devices at the USPTO as needed. Such analysis may include, but is not limited to analysis of CPU utilization, I/O, network interfaces, and applications and services that degrade server performance. The contractor shall participate in the evaluation of performance management software packages.
- (31) The Contractor shall perform configuration management of network and office automation servers devices operated by Network Operations Division. This includes maintaining hardware and software configurations and baselines for all network and office automation servers. The Contractor shall ensure all hardware and software adhere to the established baseline unless otherwise directed by USPTO. This includes adherence to and enforcement of USPTO naming standards.
- (32) The Contractor shall perform capacity management of network and office automation servers, to include the installation, configuration, testing, maintenance and de-installation of hardware and software as necessary to support increased or decreased requirements.
- (33) The Contractor shall perform security management of network and office automation servers. The Contractor shall adhere to USPTO security policy, conduct security audits as requested by USPTO, and modify baseline configurations to eliminate potential threats.

- (34) The Contractor shall operate, maintain and upgrade as necessary USPTO's software distribution utility. USPTO currently uses Microsoft Systems Management Server (SMS) to perform this function.
- (35) The Contractor shall operate, maintain and upgrade as necessary USPTO's electronic mail system. USPTO currently uses Microsoft Exchange to perform this function.
- (36) The Contractor shall perform regularly scheduled preventative (PM) maintenance activities on USPTO network and office automation servers. This includes PM on the operating system as well as on any applications supported by NOD (e.g. Microsoft Exchange and SMS).
- (37) The Contractor shall operate, maintain and upgrade as necessary USPTO's tape back up system. The Contractor shall routinely back up USPTO Network and Office Automation servers and Network Management System (NMS) servers per established standard operating procedures. The Contractor shall coordinate the periodic shipping of tapes to an offsite storage facility.
- (38) The Contractor shall operate, maintain and upgrade as necessary hardware, software, and connectivity associated with USPTO's Public Key Infrastructure (PKI) operating environment and shall perform related system administration functions.
- (39) The Contractor shall operate, maintain and upgrade as necessary hardware, software and connectivity associated with USPTO's Enterprise-Wide Login (EWL) infrastructure and shall perform related system administration functions.
- (40) The contractor shall provide the following network and office automation server administration tasks per the time frames outlined below.

Move PTOnet logon access to a different file server	Within 3 days after receipt of request through Help Desk
Increase file server space (10 Mb or less)	Within 3 days after receipt of request through Help Desk
Create new PTOnet shared space	As negotiated between business area and NOD
Create new E-mail account	Within 1 day after receipt of request through ISSD
Provide access to shared network server space	Within 3 days after receipt by NSAB of request by Help Desk
Creation/Modification of Exchange Distribution Lists	Within 3 days after receipt of request by NSAB from Help Desk
Creation of Network Print Queues	Within 3 days after receipt of request by NSAB

- (41) The Contractor shall be responsible for upgrading network and office automation infrastructure hardware/software/firmware as directed by the COTR or designee. The Contractor shall produce an Installation Plan for all upgrades. Upgrades approved by the USPTO shall be installed by CBSI. The USPTO shall provide parts used in the upgrade.
- (42) The Contractor shall be responsible for placing into production all network and office automation devices at the USPTO. This includes, but is not limited to receipt, initial inventory, set up, burn-in, testing, software loading, and deployment of hardware. In performing these services, the Contractor shall adhere to policies and procedures as established by/with the USPTO.

NETWORK CABLING SUPPORT

- (43) The Contractor shall provide on-site network cabling support Monday through Friday, from 6:30 AM to 5:00 PM (excluding Federal Holidays observed by USPTO). When on-site support is required outside of these hours, the contractor shall follow established escalation procedures to arrive within 60 minutes of notification by the NOC.
- (44) The Contractor shall provide day-to-day operation, maintenance of USPTO's fiber optic and copper cable plant. The Contractor shall respond to and fix PTONet cabling problems. These services shall be performed twenty-four (24) hours a day, seven (7) days a week, excluding Thanksgiving Day, Christmas Day, and New Years Day. The Contractor shall gather network performance and statistical data for problem analysis. The Contractor shall troubleshoot cabling problems by responding to trouble calls, performing fault isolation and restoring service.
- (45) The Contractor shall perform configuration management of USPTO's cable plant. This includes maintaining fiber optic and copper cabling hardware and software configurations and baselines for all network and office automation servers. The Contractor shall ensure all hardware and software adhere to the established baseline unless otherwise directed by USPTO. This includes adherence to and enforcement of USPTO naming standards.
- (46) The Contractor shall perform capacity management of the PTONet fiber optic and copper cable plant, to include the installation, configuration, testing, maintenance and de-installation of cabling and hardware as necessary to support increased or decreased requirements. It is anticipated 6000 installations and/or activations will occur.

- (47) The Contractor shall provide cable and infrastructure installation and maintenance for the network cable plant per the time frames outlined below.

Installations of network drops (regular)	Within 15 days after receipt of request through Cable Management Branch.
Installations of network drops (priority)	As negotiated with Cable Management Branch and approved by OCIO.
Activation of network drops (5 or less)	Within 1 day after receipt of request through Cable Management Branch.
Activation of network drops (greater than 5)	Within 5 days after receipt of request through Cable Management Branch.
Activation of network drops (priority)	As negotiated with Cable Management Branch and approved by OCIO.
Deactivation of existing network drops	Within 3 days after receipt of request through Cable Management Branch.

- (48) The Contractor shall install, and test network cabling in accordance with policies and procedures as set by the USPTO.
- (49) The Contractor shall arrive on-site to resolve all fiber optic cable outages within two (2) hours of first discovery of the problem. The contractor shall resolve ninety-five percent (95%) of all fiber optic cable problems within four (4) hours of first discovery of the problem.
- (50) The Contractor shall arrive on-site to resolve all user network cable outages within two (2) hours of first discovery of the problem. The contractor shall resolve 95% of all user network cable outages within four (4) hours of discovery of the problem.

3. GOVERNMENT FURNISHED MATERIAL

The Government shall furnish office space, change and problem tracking system(s), all pertinent SLAs, SOPs, Psion units and necessary hardware and software for the performance of this task.

4. LEVEL OF EFFORT

No work shall be performed under this Task Order without the written direction of the COTR.

5. PLACE OF PERFORMANCE

Work shall be performed throughout the various building occupied by the USPTO in Crystal City, VA.

6. SCHEDULE OF DELIVERABLES

All deliverables shall be delivered to the COTR (electronic form preferred).

Deliverable		Due
Report	Monthly Activity Report (details accomplishments)	Monthly
Report	Monthly Task Expenditure Report (details hours billed per individual on Network Operations Support Task)	Monthly

7. APPLICATION FOR INFORMATION SYSTEMS LIFE CYCLE MANAGEMENT (AIS-LCM)

AIS-LCM is required under this task.