

Managed Network Service (MNS)

The Managed Network Service (MNS) enables an agency to outsource a portion or all of its network planning, design, implementation, maintenance, operations and customer service as a strategic move to improve IT services and lower costs. MNS covers two main activities: (1) Network design and engineering services, and (2) Network implementation and maintenance services.

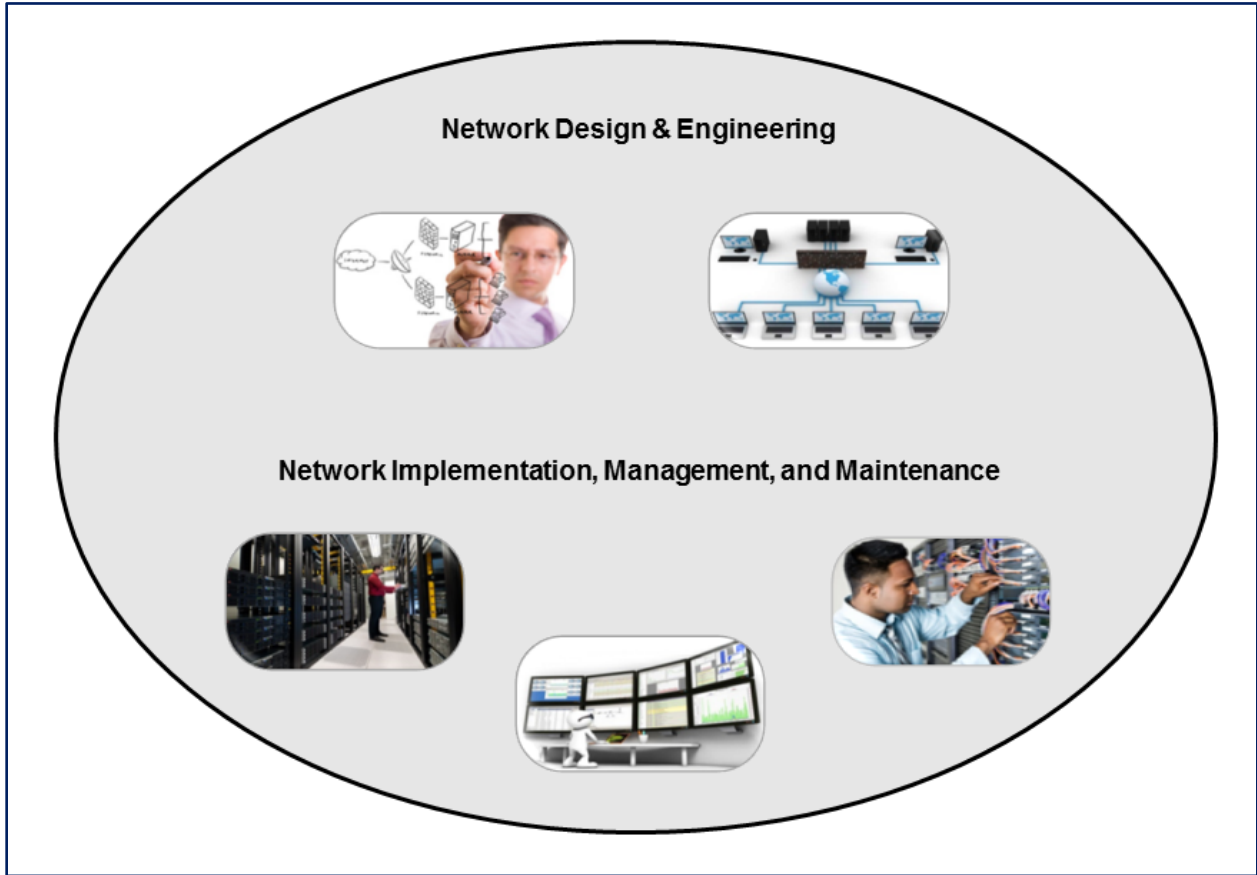
The MNS contractor provides overall management of an agency's network infrastructure, including real-time proactive network monitoring, troubleshooting and service restoration. The contractor is the agency's single point of accountability for all managed networks, including operations, maintenance, and administration activities.

Category: Managed Services

Complementary Services Needed: In order to use MNS, the agency may need one or more of the following EIS services or equivalent: Access Arrangements, Service Related Equipment, Service Related Labor, and a data transport service such as Private Line Service, or Ethernet Transport Service.

Definitions: Please see EIS contract [Section J.12 Glossary of Terms](#) for clarification of technical terms and acronyms.

Figure 1—Managed Network Service



1. Why an Agency Might Select this Service

- It is becoming increasingly difficult for the agency's limited in-house staff to properly manage the agency's enterprise network and handle the network's performance and security issues in a timely fashion.
- The agency's enterprise network connects multiple regional offices, remote locations, or other independent sites.
- The agency's enterprise network must be able to provide secure connectivity to mobile and remote employees.
- Having a managed enterprise network would enable the agency to integrate voice and data traffic, and thereby lower IT costs.
- The agency's enterprise network needs to be able to dynamically allocate additional resources to meet demands from video and other high-bandwidth applications.

NOTE: Agencies considering this service may also want to compare this service with Infrastructure as a Service (IaaS).

2. Examples of How MNS Could be Used

- **U.S. Army:** The U.S. Army Simulation, Training & Instrumentation Command (STRICOM) used a managed network service to handle the day-to-day management of its network, giving STRICOM the flexibility to rapidly decrease or increase its network management staff based on the workload.¹
- **Environmental Protection Agency (EPA):** The EPA made plans to move to a managed network service that would give the contractor decision making authority to handle system upgrades as needed. This would free up scarce federal employees to service EPA customers instead of having to communicate, and track compliance to, an endless stream of requests to contractor personnel.²
- **The U.S. Department of the Treasury:** The Department made plans to replace an aging IT contract with a managed network service, because such a service would give them the ability to explicitly define certain expected outcomes, and then hold contractors accountable to provide those outcomes.³

¹ Schwartz, Karen D. August 1, 2002. "[Handing Over the Keys to the Kingdom](#)." Government Executive.

² Ibid.

³ Ibid.

3. Key Technical Specifications

NOTE: This portion of the service guide has been abridged due to space considerations. For full technical details on MNS, please refer to EIS contract [Section C.2.8.1 Managed Network Service](#).

3.1 Network Design and Engineering Services

Table 1—MNS Network Design and Engineering Services Technical Capabilities

Capability	Description
<p>Design and Engineering Services</p>	<p>The contractor provides design and engineering services that include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Identifying hardware and firmware (e.g., routers, switches, and other SRE), related software, and SRL required by the agency to deliver the EIS services. 2. Identifying network components and determining protocols, redundancy, traffic filtering, and traffic prioritization requirements. <p>Recommending the appropriate performance levels and network capacities as required.</p> <ol style="list-style-type: none"> 3. Providing complete project management for design, engineering, implementation, installation, access coordination, provisioning, equipment configuration, hardware testing, and service activation. <p>Coordinating installation activities with the agency to minimize the impact on the current networking environment.</p>

3.2 Network Implementation, Management and Maintenance Services

Table 2—MNS Implementation, Management and Maintenance Technical Capabilities

Capability	Description
MNS Solutions	<p>The contractor develops, implements, and manages comprehensive solutions using EIS services to meet agency-specific requirements. The solutions include, but are not limited to:</p> <ul style="list-style-type: none"> a) Access solutions that use a combination of different services (e.g., wireline and wireless access services) for specific agency locations, to meet agency performance metrics for availability and disaster recovery b) Transport solutions that distribute traffic over multiple contractor backbone networks to provide redundancy and carrier diversity, and vary the traffic allocation dynamically based on agency performance requirements c) Customer premises solutions that provide agency-specific interfaces, software, and equipment to meet agency requirements d) Security solutions as required by the agency
MNS Hardware, Firmware and Related Software	<p>The MNS contractor supplies and manages the hardware, firmware and related software required by the agency. Components include but are not limited to routers and switches, encryption devices, CSUs/DSUs, hubs, adapters, and modems.</p>
Contractor-Provided MNS Tools	<p>MNS contractor will provide MNS tools to:</p> <ul style="list-style-type: none"> a) Monitor performance of agency-specific networks including transport services, access circuits, and government edge routers b) Provide real-time visibility of transport and access services performance
Network Management and Sustainment Support	<p>The MNS Contractor provides network management and sustainment support including:</p> <ul style="list-style-type: none"> a) Manage the network in real-time on a 24x7 basis b) Support remote management capabilities from the operations center defined in the task order (TO) c) Proactively monitor utilization and performance, probing in intervals of no more than fifteen minutes to ensure proper equipment/network operations d) Assess and report access and transport services performance and SLAs e) Assess and report on agency-specific network capacity and performance f) Address agency-specific network capacity and performance issues

Capability	Description
Managed Equipment Information	Managed equipment information is provided to the agency, as applicable, via SNMP read-access data feeds.
Network Configuration	<p>The contractor handles configuration management tasks and activities, which include, but are not limited to, the following:</p> <ul style="list-style-type: none"> a) Adding a protocol b) Adding, moving or removing Customer Premises Equipment (CPE) c) Changing addressing, filtering, and traffic prioritization schemes d) Optimizing network routes e) Updating equipment software and/or configuration, including but not limited to firewall and VPN security devices f) Upgrading or downgrading bandwidth g) Implementing configuration changes for all agency-specific devices h) Maintaining a configuration database for all agency-specific devices i) Auditing government router configurations
IP Address Management	The contractor provides IP Address Management as applicable. The contractor submits agency-completed American Registry for Internet Numbers (ARIN) justification requests for specified IP allocations in order to support the service offered.
Access Authentication Support	The contractor monitors and control access to equipment under its control including limiting access to authorized personnel, and implementing passwords and user permissions as directed and approved by the agency.
Off-Site Equipment Configuration	The contractor regularly performs off-site equipment configuration backups, in order to ensure the availability of recent configuration data for restoration purposes. The contractor provides the agency with secure access to backup logs as needed.
Hardware/Software Upgrades	The contractor performs necessary hardware and software upgrades, updates, patch deployments and bug fixes as soon as they become available. The contractor also implement updates in coordination and mutual agreement with the agency and test new releases to resolve any security concerns, ensure compatibility with the agency environment, minimize service disruptions, and maintain equipment functionality.
Equipment Maintenance and Repair	The contractor provides preventative and corrective maintenance on agency-specific devices.

3.3 Features

A summary of MNS features are listed and described in the table below.

Table 2—MNS Features

Feature	Description
Government Furnished Property (GFP) and Service-related Equipment (SRE) Maintenance	The contractor maintains and repairs GFP and SRE.
Agency-Specific Network Operations Center (NOC) and Security Operations Center (SOC)	MNS Contractor provides agency-specific help desk services and shared or dedicated NOCs and SOCs to meet agency requirements.
Network Testing	<ul style="list-style-type: none"> a) MNS contractor supports agency-specific development services to address agency's requirements to test equipment, software and applications on the contractor's network prior to purchase and deployment. b) Network testing will cover voice, data, and video technologies that include but are not limited to IP VPN and voice services. c) Testing will be performed at the agency's discretion and structured in collaboration with the contractor.
Traffic Aggregation Service	NOTE: This feature is reserved only for DHS. MNS contractor establishes and maintain secure facilities ("DHS EINSTEIN Enclaves") where DHS-furnished equipment can be deployed, provide network connectivity from the DHS EINSTEIN Enclave to the DHS data centers, and route all traffic subject to National Policy requirements described in Section C.1.8.8 through (i.e., deliver to and receive from) a DHS EINSTEIN Enclave for processing by the latest generation of EINSTEIN capabilities.

4. Pricing Basics for MNS

Please visit the [EIS Resources Listing](#) and locate the [Basic EIS Pricing Concepts Guide](#) to gain an understanding of EIS pricing fundamentals.

4.1 Access Arrangements

Access Arrangements, if required, must be selected for each endpoint. Please visit the [EIS Resources Listing](#) and locate the [Access Arrangements Guide](#) for more detailed information.

4.2 Service Related Equipment (SRE)

- SRE must be chosen based on equipment required at each location. Please visit the [EIS Resources Listing](#) and locate the [Service Related Equipment Service Guide](#) for more detailed information.

NOTE: SRE uses catalog-based pricing.

- Request that contractor provide pricing for any SRE that would be required, in addition to the agency's existing infrastructure, to deliver the service.

4.3 MNS Price Components

The price structure for MNS consists of the components shown in *Table 4* below.

Table 3—MNS Pricing Components

Component	Charging Unit
Design and Engineering NRC (ICB)	Per Device
Managed Network Implementation, Management and Maintenance (NRC + MRC)	Per Device
Out-of-Band Service (POTS Line or Wireless Service) (NRC & MRC)	Per Device
Features (all are ICB)	Device or Proposal

Figure 2 and *Figure 3* below show how the pricing components in *Table 4* above are combined to produce the total cost for the service.

Figure 2—This figure shows the Table 4 pricing component that is used to calculate the total MNS charges for network design and engineering services.



Figure 3—This figure shows how the various pricing components in Table 4 would be combined to calculate the total MNS charges. NOTE: One or more of these components may not be needed to price a particular service package.



The charges for the different components in *Figures 2 and 3* are calculated using details provided in the pricing tables in EIS contract [Section B.2.8.1 Managed Network Service](#). Please visit the [EIS Resources Listing](#) and locate the [Basic EIS Pricing Concepts Guide](#).

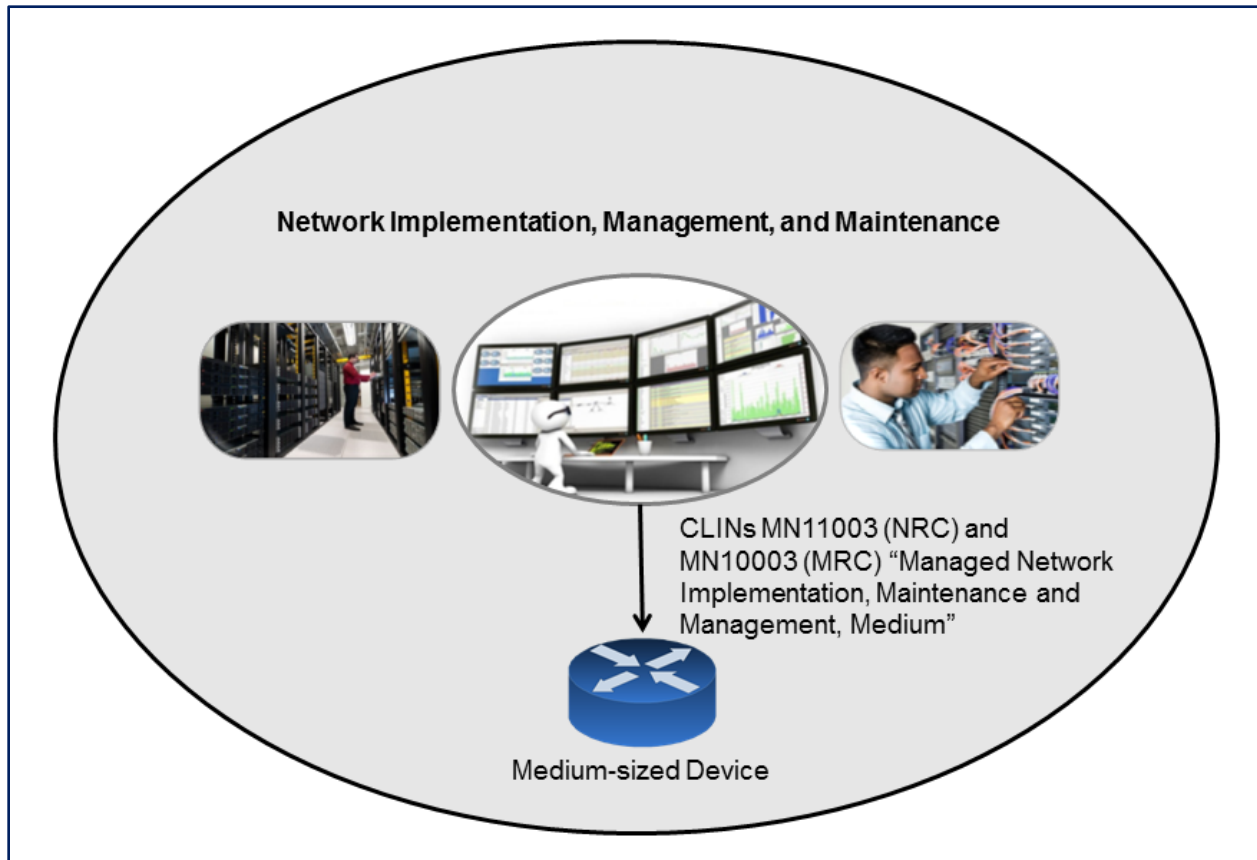
NOTE: A contractor may offer a custom variation of the Managed Network Implementation and Maintenance services to meet an agency's unique requirements. Such a customization would be identified with a Task Order Unique CLIN (TUC), and would include charges that would have to be added to the components in *Figure 3* to determine the total cost of the service.

4.4 MNS Pricing Examples

NOTE: No pricing examples are provided for the MNS Design and Engineering service, as all such services are priced by contractors on an individual case basis (ICB).

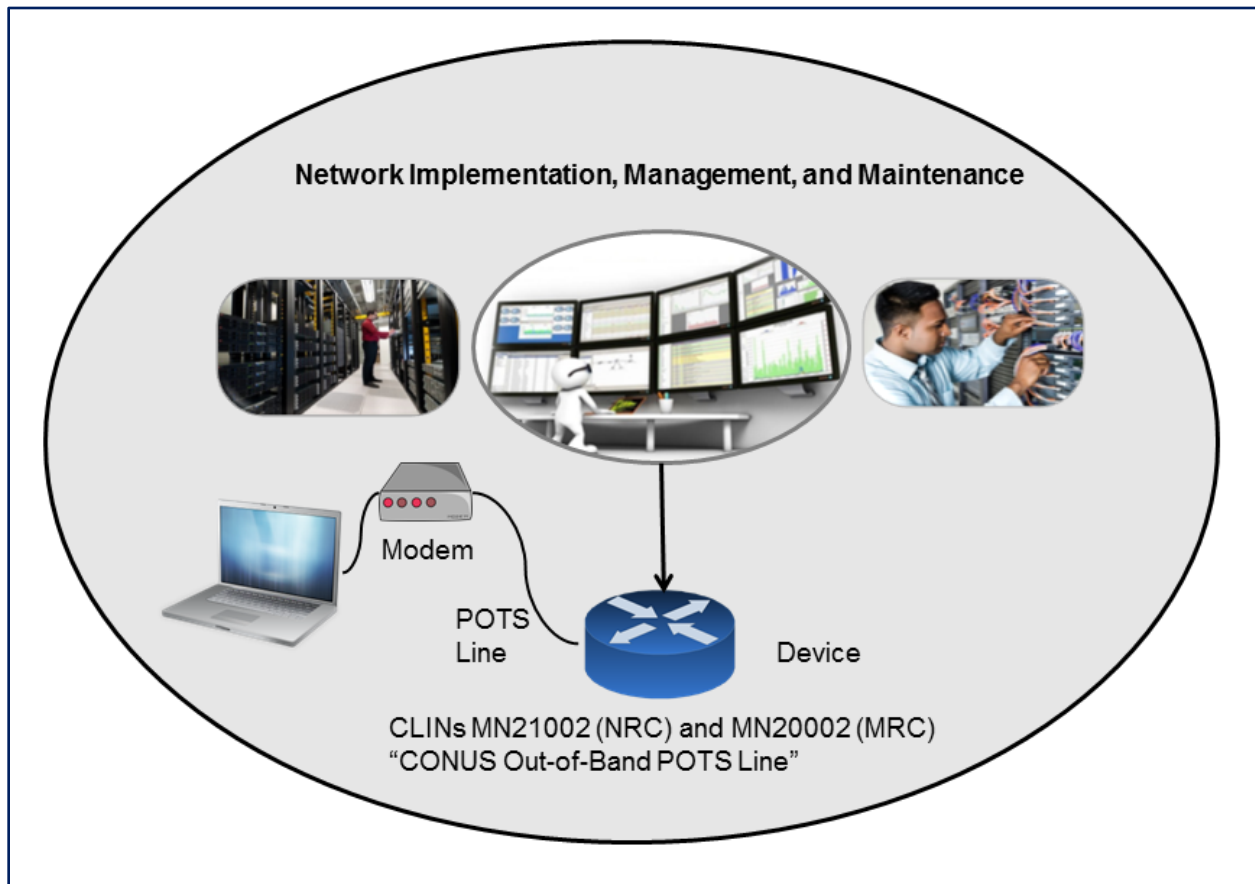
Example 1: MNS for a Medium-sized Device

Figure 4—Management of Medium-sized Device



- Choose CLIN MN11003 (NRC) and MN10003 (MRC) “Managed Network Implementation, Maintenance and Management, Medium” (see Table B.2.8.1.3.2, Managed Network Implementation, Management and Maintenance Pricing Instructions Table for Managed Devices).

NOTE: EIS contractors choose the size class for their devices, so the same device could be classed as Medium by one contractor, but Large by another. This could affect pricing and price comparisons across contractors.

Example 2: CONUS POTS-Based Out-of-Band Management*Figure 5—CONUS Out-of-Band POTS Line*

- Choose CLIN MN21002 (NRC) and MN20002 (MRC), "CONUS Out-of-Band POTS Line (POTS Line provided by contractor and price includes both line and OOB management)" (see Table B.2.8.1.4.2, MNS Out-of-Band Access Pricing Instructions Table).

5. References and Other Sources of Information

- For more technical details and information on MNS, please refer to EIS contract [Section C.2.8.1](#); for pricing details, [Section B.2.8.1](#).
- For more information on service-related items, please see:
 - EIS contract [Section B.2.10 Service Related Equipment](#)
 - EIS contract [Section B.2.11 Service Related Labor](#)
- Please refer to a contractor's individual EIS contract for specifics on the contractor's MNS offerings.
- For additional EIS information and tools, visit the [EIS Resources Listing](#).
- For guidance on transitioning to EIS, please visit [EIS Transition Training](#) where you'll find several brief video training modules.