

2.1.4 Managed Network Services [C.2.8.1]

Agencies benefit from the vast experience and expertise of MetTel’s design and engineering solutions with the MetTel Managed Network Service (MNS) solution. We apply our [REDACTED]

[REDACTED] to implement, manage, secure and maintain services for Agency’s networks. The MetTel team’s MNS provides technical, security and operational expertise and capabilities that ensure the availability,

reliability and confidentiality of Agency networks. As networks become increasingly complex, our experience and expertise ensures a network environment that meets the Agency’s evolving mission requirements and goals.

MetTel MNS Strengths
Small Business, Large Reach

- Recognized expertise in technical disciplines, operations and security
- Secure interactive access to all information through the MetTel EIS Portal
- Award winning customer support
- [REDACTED]
- MetTel EIS Portal—one-stop information source including Inventory, Billing, MACD, Procurement, and more

2.1.4.1 Compliance with Evaluation Criteria [L.29.2.1]

Our MNS solution fulfills the mandatory service requirements for MNS defined in SOW paragraph C.2.8.1. The following section presents a technical description of our offering, demonstrating our capabilities in Standards, Connectivity, Technical Capabilities, Features, Performance Metrics, and Security. **Exhibit 2.1.4-1** highlights some key strengths and benefits of our MNS solution.

Exhibit 2.1.4-1. Features and Benefits of the MetTel Solution

Evaluation Criteria	Features and Benefits of MetTel’s Approach
Understanding (M.2.1(1))	<ul style="list-style-type: none"> • MetTel fully understands the requirements for managing the network services of Government Agencies and meeting the EIS service requirements. • The MetTel EIS Portal is the key information and communication source for MNS customers. • MNS manages the EIS services required by the Agency and is responsible for the effective operation and deployment of the Agency network infrastructure.
Quality of Services (M.2.1(2))	<ul style="list-style-type: none"> • Our dedicated team implements, manages, operates, and controls Agency network environments on a secure MPLS core network and the MetTel EIS Portal provides all system information for Agencies, including SLA performance. • Our experienced team delivers MetTel MNS to be compliant, scalable, reliable, and resilient in accordance with Task Order requirements.
Service Coverage (M.2.1(3))	<ul style="list-style-type: none"> • [REDACTED]
Security (M.2.1(4))	<ul style="list-style-type: none"> • MetTel’s network architecture ensures Agency traffic is properly identified, routed

Evaluation Criteria	Features and Benefits of MetTel's Approach
	<p>(redirected), scanned (via DHS EINSTEIN Enclave as required), and delivered to the appropriate Agency's network. Our architecture also enables MetTel's NOC and Raytheon's SOC to identify any traffic inadvertently directed through the DHS EINSTEIN Enclave and notify DHS. Metrics (SLA KPIs) are measured in accordance with the EIS RFP.</p> <ul style="list-style-type: none"> • MetTel supports the proper safeguards for handling of traffic should failures occur with the DHS GFP. All DHS EINSTEIN enclaves are housed within a planned ANSI/TIA-942 and ICD 705 certified facility which has recently gone through a successful A&A. • [REDACTED] • [REDACTED] This preserves the confidentiality and integrity of this interconnection and ensures that agency traffic may not be inadvertently bypassed, accessed, or altered. • Our 24x7x365 SOC team is comprised of skilled and experienced analysts and engineers that are TS/SCI cleared who can be made available for "smart hands" to support DHS supplied equipment. • The SOC team will work in concert with our NOC and is responsible for device management, device tuning, security monitoring and analysis, and Digital Forensics and Incident Response (DFIR) while ensuring compliance with SLA KPIs for traffic flow through MTIPS

2.1.4.1.1 Service and Functional Description [L.29.2.1, C.2.8, C.2.8.1.1, C.2.8.1.1.1]

We offer a comprehensive network management solution that comprises design and engineering, implementation, management, security and maintenance services that ensure the availability, confidentiality and reliability of increasingly complex Agency networks. We provide MNS to organizations today [REDACTED]

[REDACTED] that utilize our solution for telecommunications environments in a continuous state of rapid technology change with increasing bandwidth demands and complex application integration with a constant need for enhanced security, survivability, redundancy, and cost control. We recognize that Agency personnel must focus on their mission while working alongside an expert resource to ensure robust and dependable communications that provide the requisite value for the telecommunications spend. Recognizing that organizations have varying

MetTel MNS Keys to Success
<ul style="list-style-type: none"> • Experienced and seasoned Project Managers to assure the Health of the Network • MetTel EIS Portal for observing the Health of the Network or understanding status of installation or repair in real-time • Experienced design and engineering team

requirements, we developed an MNS foundation that is adaptable to different requirements for size, bandwidth, and complexity. [REDACTED]

[REDACTED] Our MNS ensures Agency investment in services is consistent with goals by providing a single platform for consolidation of all Telecommunications Expense Management (TEM).

MetTel's MNS supports all appropriate, underlying EIS offerings to ensure seamless connectivity and complete service management. Our proactive network and security monitoring, rapid troubleshooting, and service restoration support the overall management of an Agency's network infrastructure. [REDACTED]

2.1.4.1.2 Standards [L.29.2.1, C.2.8.1.1.2]

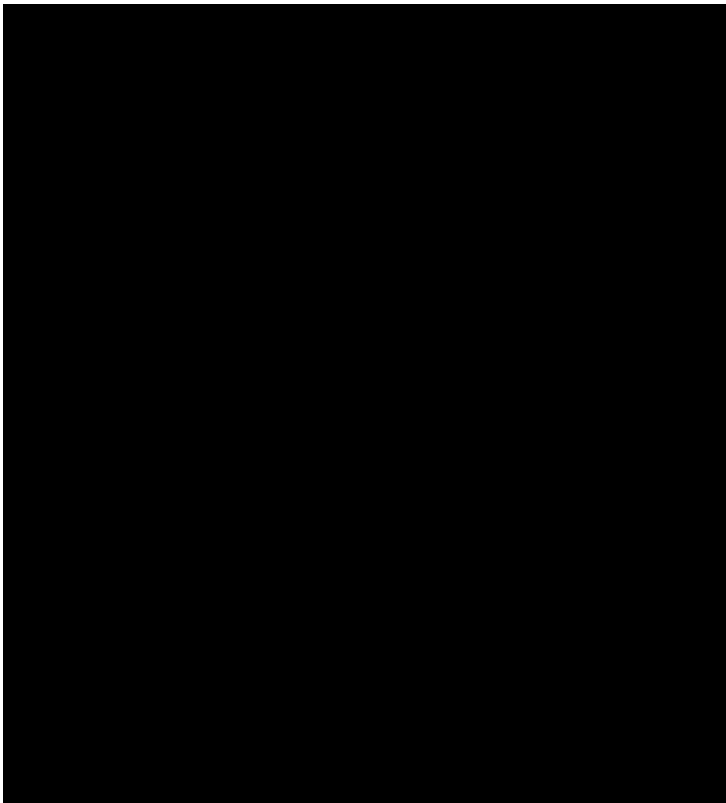
MNS complies with all the appropriate standards for any underlying EIS access and transport service and the specific standards and requirements identified in an Agency Task Order as required in C.2.8.1.1.2.

2.1.4.1.3 Connectivity [L.29.2.1, C.2.8.1.1.3].

MNS works with the underlying EIS offerings of VPNS, ETS, IPVS, IPS and MTIPS as needed to ensure seamless and secure connectivity to Agency networking environments as specified in C.2.8.1.1.3.

2.1.4.1.4 Technical Capabilities [L.29.2.1, C.2.8.1.1.4]

We provide the required Design and Engineering services and Implementation, Management, and Maintenance services, described



below. All of which comply with security requirements set forth in the EIS RFP.

2.1.4.1.4.1 Design and Engineering Services [C.2.8.1.1.4.1]

We provide a dedicated project team to design and engineer services that fully satisfy Agency requirements. Typical tasks may include selection of hardware, firmware, and related software required by an Agency's Task Order. This includes the selection of routers, switches, firewalls, PBXs, and any other related equipment required for delivering an EIS service. Our team is dedicated to continuous improvement and current technology expertise [REDACTED]. We define network components, protocols, redundancy solutions, traffic filtering, and traffic prioritization requirements for QoS implementation. Additionally, we recommend bandwidth and performance levels as required to implement the network service in compliance with service KPIs.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] MetTel coordinates all installation and testing activities with the Agency to minimize impact on the current networking environment and operational mission.

2.1.4.1.4.2 Implementation, Management, and Maintenance [C.2.8.1.1.4.2]

We developed our implementation, management, and maintenance model to interact across multiple providers of service and equipment, including CLECs, Tier-1 carriers and ISPs, CPE vendors, and all major local and long distance telephone carriers. Part of this process includes defining escalation plans to predetermine the most expeditious path to elevate priorities across organizations in the event problems are not resolved through normal procedures.

Our solution implementation, management, and maintenance cover the network components, circuits, hardware, performance, and repair, as well as the administrative components of inventory control, billing, and reporting.

The MetTel EIS Portal is a key component of our Network Architecture (See **Section 1**) and is the mechanism we use to implement, maintain, and manage MNS for Agencies. The portal is powerful and secure, proprietary network-based software that provides a single, user-friendly interface for all MNS reporting requirements and real-time access to all key service information.

Agencies have secure access to current and historical information through the MetTel EIS Portal. [REDACTED]

[REDACTED]

[REDACTED] We provide training to ensure authorized end users have full understanding of the power and information available through the MetTel EIS Portal. [REDACTED]

[REDACTED]

Comprehensive Solutions [C.2.8.1.1.4.2 (1)]

We develop, implement, and manage comprehensive solutions constructed from components of EIS services and their enhancements. Our MNS portfolio includes the four required solutions [REDACTED]

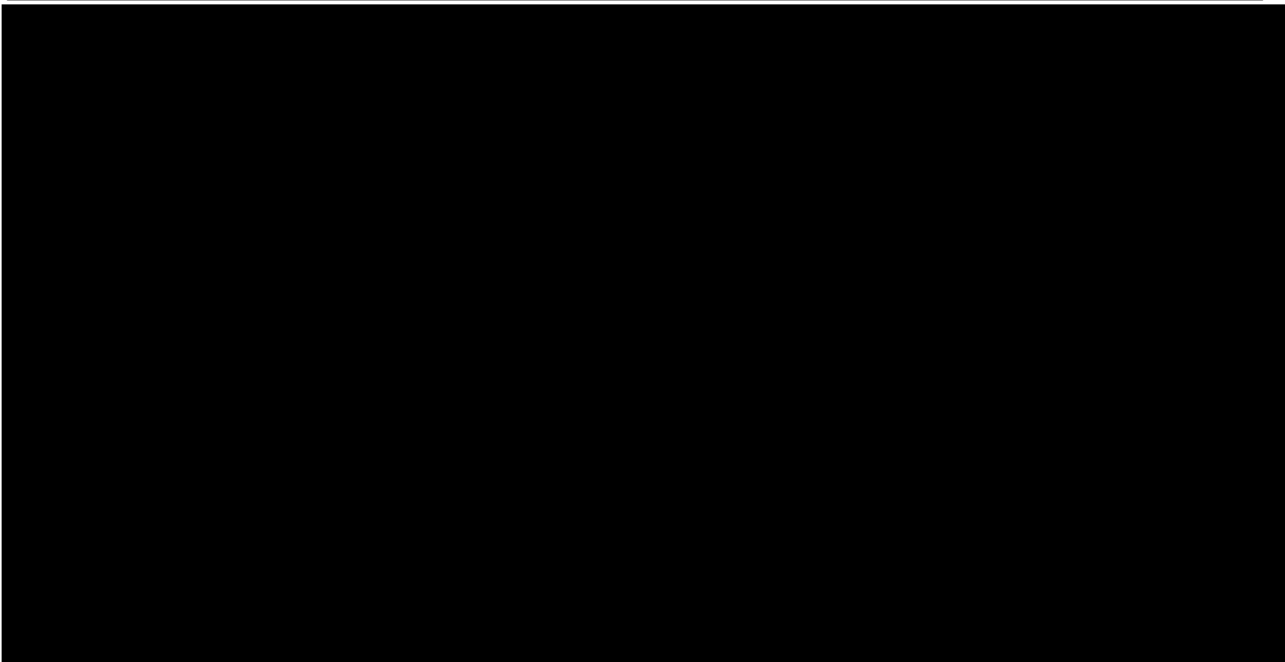


Exhibit 2.1.4-3. MetTel MNS Comprehensive Solutions

Solution	Goal	MetTel Approach
Access	Combination of services to meet performance metrics for availability and DR	Combine access through broadband, cable, or wireless using multiple vendors
Transport	Distribution of traffic over multiple contractor backbone networks to provide redundancy, carrier diversity, and dynamic traffic allocation	Combine multiple CLECs and ILECs services and NNIs, with Tier-1 carriers and ISPs, plus WiFi for mobility to provide diversity, redundancy, and traffic allocation needs.
Customer Premise	Agency-specific interfaces, software, or equipment	Utilize MetTel's SRE to provide the appropriate interfaces, software, and equipment required by the Task Order.
Security	Infrastructure monitoring, incident response, managed protection and implementation and maintenance requirements	Provide 24x7x365 SOC necessary to satisfy Agency requirements such as security monitoring, incident response, managed protection and implementation of firewalls, IDS/IPS, Proxy Servers, Certificate Authorities, and two factor authentication.



Supply and Manage [C.2.8.1.1.4.2 (2)]

We provision and manage all hardware, firmware, and related software required by the Agency in the Task Order. Hardware components include but are not limited to

routers, switches, encryption devices, PBXs, CSU/DSU, hubs adapters, proxy servers, firewalls, and modems (wireline or wireless). MetTel MNS supports the UNIs for all underlying EIS access and transport services implemented using MNS as required.

Customer Care [C.2.8.1.1.4.2 (3, 4, 5)]

Once an Agency issues an MNS TO, the MetTel New Client Services engages and validates engineering and assures proper understanding of management SLAs, reporting and maintenance requirements. The Agency works with Customer Care as needed via phone, email, or the MetTel EIS Portal. **Exhibit 2.1.4-4** shows the structure of the Customer Care support organization.

[Redacted]

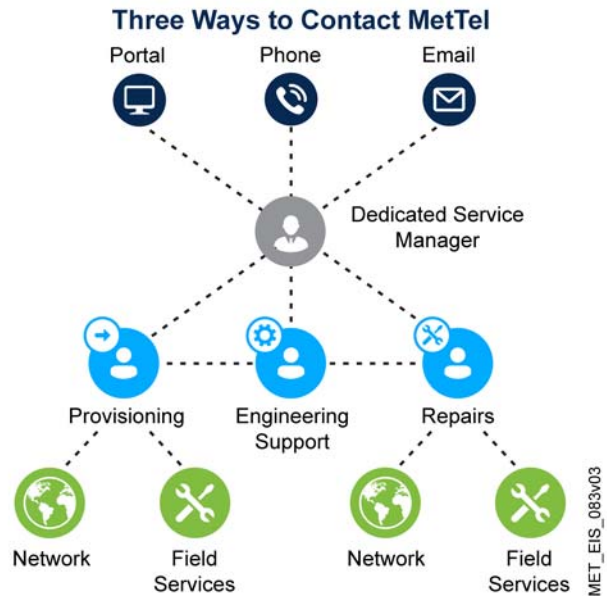


Exhibit 2.1.4-4. Customer Care

[Redacted] The MetTel EIS portal provides access to all information from Agency locations or remotely for remote management. Agencies can receive SNMP read-access data feeds which provide the Agency with managed equipment information, as required.

[Redacted]

Provisioning comprises the ordering and installation of new services or sites as Agencies grow or move locations. This function includes coordinating any new circuits with the LEC or network provider as well as ordering and staging new hardware as required.

The repair function is the primary responsibility of the Network Operations Center (NOC). The NOC manages the network in real-time 24x7x365 and coordinates with the SOC to provide proactive detection of problems, responds to alerts, and provides notification of alarms, network troubles, and service interruptions. [REDACTED]

[REDACTED] The Centers provide remote management of equipment configurations, testing, monitoring, troubleshooting, fault/problem resolution, and maintenance.

Configuration Management [C.2.8.1.1.4.2 (6)]

The MetTel NOC also performs configuration changes consistent with Agency requirements. Changes are routine and tracked using the Trouble Ticket (TT) system. Customers can initiate a change by opening a TT in the MetTel EIS Portal, calling the NOC, or emailing the Dedicated Account Team. **Exhibit 2.1.4-5** lists typical types of routine changes that can be processed [REDACTED]

Exhibit 2.1.4-5. Sample Configuration Change Process

Change Request	[REDACTED]	[REDACTED]
Adding a protocol	[REDACTED]	[REDACTED]
CPE Moves, Adds, Changes	[REDACTED]	[REDACTED]
Changing addressing, filtering, and traffic prioritization schemes	[REDACTED]	[REDACTED]
Optimizing Network Routes	[REDACTED]	[REDACTED]
Updating equipment, software, and/or configuration (may include Firewalls and VPN devices)	[REDACTED]	[REDACTED]
Upgrading or downgrading bandwidth	[REDACTED]	[REDACTED]
Implementing configuration changes for all agency-specific devices	[REDACTED]	[REDACTED]
Maintaining a configuration database for all agency-specified devices	[REDACTED]	[REDACTED]
Auditing government router configurations	[REDACTED]	[REDACTED]

Network Operations Center Support [C.2.8.1.1.4.2 (7, 8, 9, 10, 11, 12)]

As the organization responsible for O&M of the Agency’s MNS, the MetTel NOC provides Agency support for many functions and services, including implementation and

design. **Exhibit 2.1.4-6** shows a representative table of support provided by the Customer Care Center through the NOC as well as our management and maintenance processes.

Exhibit 2.1.4-6. Customer Care Services for MNS Agencies

Service	MetTel Approach
IP address management	Supply registered IP addresses to the Agency as required and in accordance with ARIN IP address allocation requirements. Assist with transitioning non-registered private IP addresses (RFC 1918) to public addresses for routing purposes
Monitor and control access to equipment	Monitor and control access to equipment under MetTel control using appropriate authentication and role-based user permissions as directed by the Agency. [REDACTED] Enforce two-factor authentication for all remote network access using TACACS with tokens, RADIUS, or VPN (based on SSL/TLS or IPSEC) with individual certificates.
Off-site equipment configuration backup	Regularly perform off-site equipment configuration backups to a data center-based backup repository. Perform backups on a regular basis and whenever a change to the device configuration is made to ensure fallback is able to restore the previous configuration. Log all backups and provide the Agency access to backup logs as necessary
Hardware and software upgrades	Customer Care Center implements necessary hardware and software upgrades, updates, patch deployment, and bug fixes as soon as they become available and are tested. Coordinate with the Agency to test new releases and implement upgrades. Test new releases that address or resolve security issues to ensure compatibility with the Agency environment, minimize service disruptions, and maintain equipment functionality.
Preventive and corrective maintenance	Provide preventive and corrective maintenance as defined in the Task Order for Agency-specific devices.
Proactive problem detection	<p>Help Desk working in conjunction with the NOC and SOC proactively detects problems, responds to alerts, and promptly reports situations that adversely affect throughput to the impacted Agency via email or phone or as directed by the Agency in the Task Order.</p> <ul style="list-style-type: none"> Monitoring – (a) Monitor Agency-specific network availability and QoS, including circuit availability, latency, jitter, packet delivery, and packet loss; (b) access circuits availability and QoS; (c) edge router availability, and performance; (d) transport service availability at the government’s network equipment; (e) agency-specific network performance from government network equipment to government network equipment; (f) transport service performance up to the government network equipment; (g) transport service performance from government network equipment to government network equipment. (h) Provide, monitor, and manage circuits for out-of-band government network equipment. Open/close TTs – (i) Open TTs in the Agency TT system; (j) In MetTel trouble management system, and partner provider trouble management systems through ebonding. Troubleshooting – (k) Troubleshoot faults for access and transport services; (l) Government network equipment; (m) Agency-specific network faults and coordinate fault resolution and repair; (n) Notify agency-specific network users of faults and maintenance via agency alerts. NOC Support – (o) Provide a NOC Help Desk to answer phones and respond to email and

Service	MetTel Approach
	MetTel EIS Portal TT requests. (p) The NOC provides Tier-1, Tier-2, and Tier-3 support to the Agency NOC for MetTel access and transport services; (q) Support to agency NOC for components of the agency network that are managed by MetTel.
Rules of engagement	Customer Care predefines a RACI matrix with the Agency to ensure no issues during problem resolution. A RACI matrix defines roles and responsibilities of the Agency and other responsible organizations in supporting the service. Each role is identified as Responsible, Accountable, Consult, or Inform to define the type of interaction between the customer and MetTel.

MetTel EIS Portal – Information Source for MNS [C.2.8.1.1.4.2 (13, 14, 15)]

MetTel provides users access to the MetTel EIS Portal with role-based user permissions as determined by the Agency. The portal provides users with a single, user-friendly source of information for all real-time and historical information about the MNS. [REDACTED]

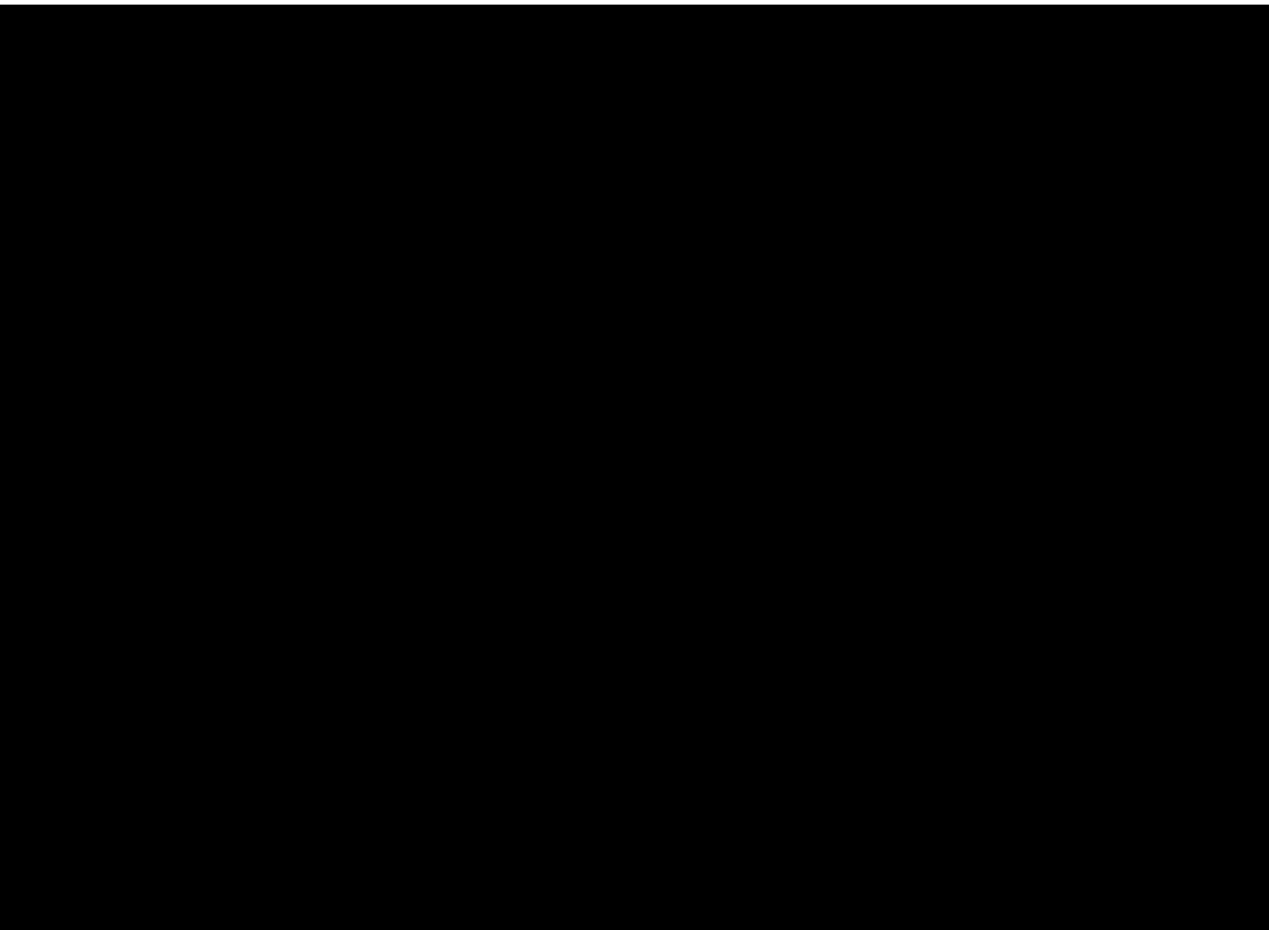


Exhibit 2.1.4-7. Creation of New User Roles

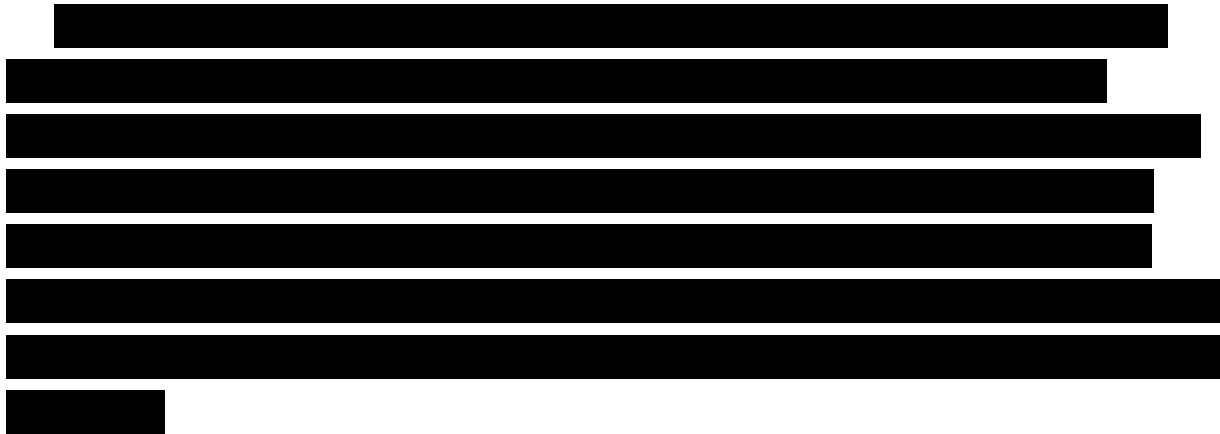
Agency administrators add users to job-related roles and edit and modify user permissions to manage user access to Agency information as needed.

Installation Schedule [C.2.8.1.1.4.2 (13 a)]

The MetTel EIS Portal provides authorized Agency personnel with near-real-time access to the installation schedule through the NCS Tracker. The NCS Tracker provides detailed activity schedules for equipment delivery and installation, access and transport circuits including FOC dates when available, ports, and permanent virtual circuits (PVCs) as applicable to the solution. The installation schedule provides the Agency the ability to track the provisioning process through completion at any time through the MetTel EIS Portal.

Network Statistics and Performance Management [C.2.8.1.1.4.2 (13 b)]

We provide a rich set of performance information displays with real or near-real time access. Through the MetTel EIS Portal, Agency users can access network statistics and performance information including MPLS link monitoring, QoS performance, traffic monitoring, and security logs. **Exhibit 2.1.4-8** shows an example of the types of performance screens available to Agency users.



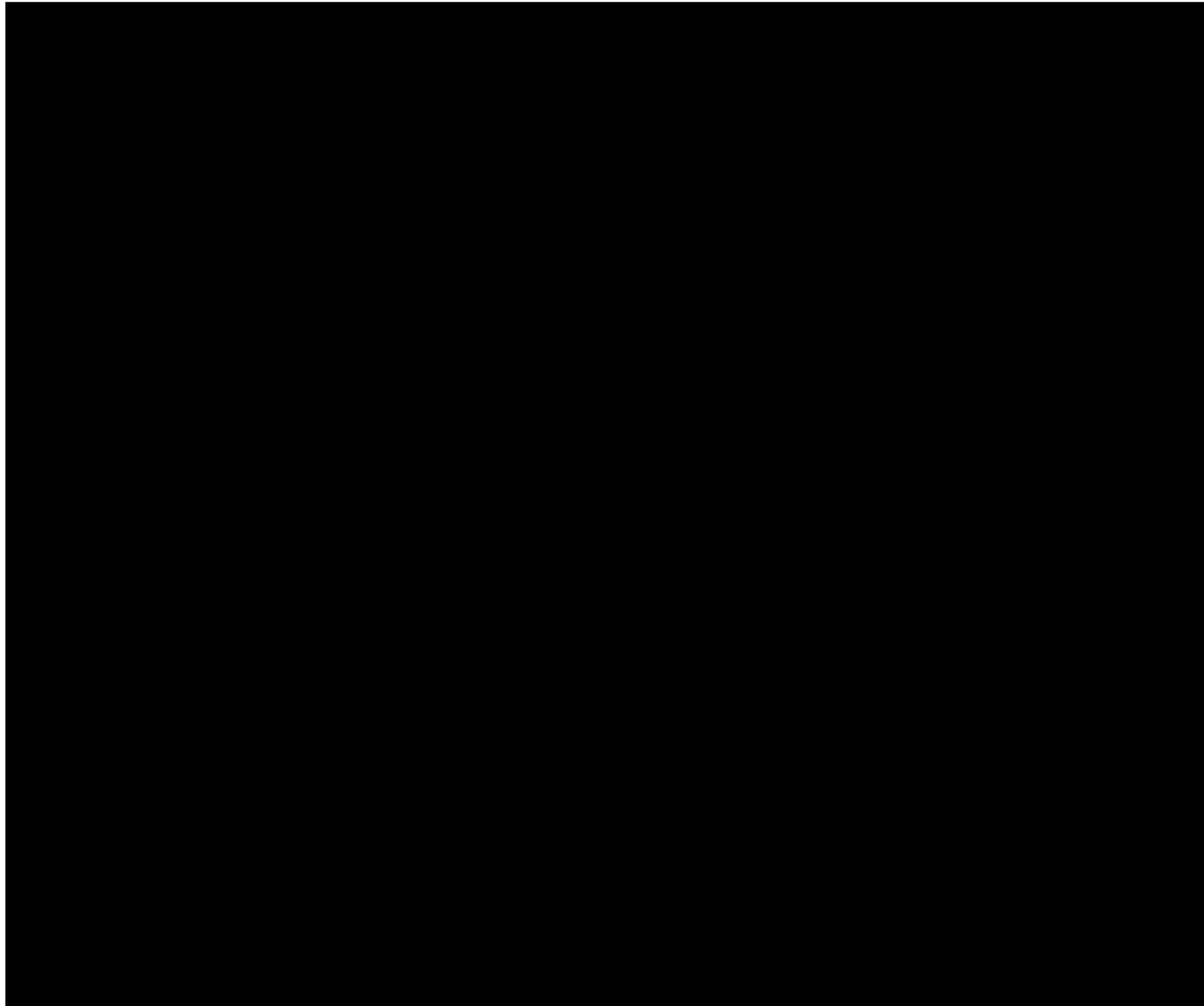


Exhibit 2.1.4-8. MetTel EIS Portal Network Performance Examples

As shown in **Exhibit 2.1.4-8**, we provide authorized users secure access to current and historical performance information through the MetTel EIS Portal. Depending on Task Order requirements, the MetTel EIS Portal provides graphic and tabular information about services provided to the Agency. This information includes but is not limited to network performance information for the data types defined in **Exhibit 2.1.4-9**.

Exhibit 2.1.4-9. MetTel EIS Portal Network Performance Information

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Inventory Management [C.2.8.1.1.4.2 (14)]

Our full-featured inventory system ensures Agency users have real-time status of inventory. Authorized users can search for lines, circuits, hardware (MetTel-provided or GFP), or accounts using multiple criteria through the inventory management system. The SOC has inventory information permissions to aid in any incident response, hunting and vulnerability scanning. **Exhibit 2.1.4-10** depicts the MetTel EIS Portal Equipment Inventory Information screen.

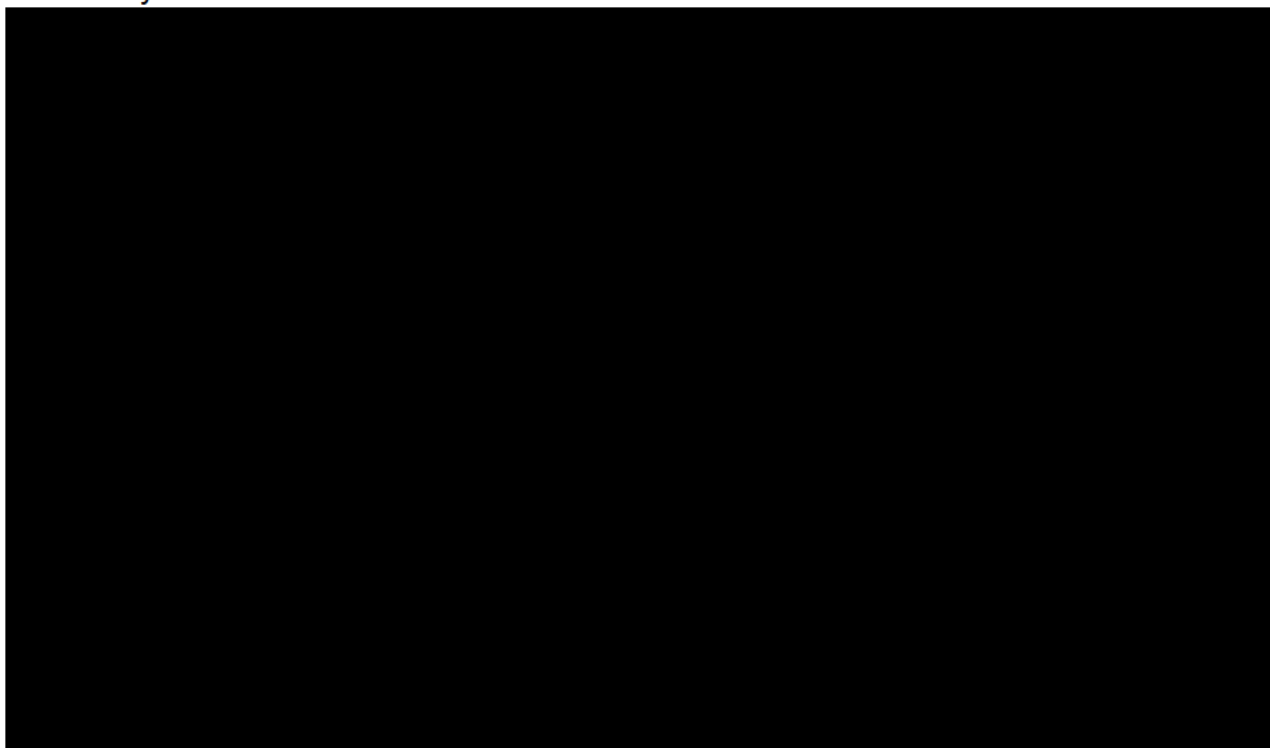


Exhibit 2.1.4-10. MetTel Portal Equipment Inventory Information

Trouble Ticket (TT) Management [C.2.8.1.1.4.2 (13 c, d)]

The MetTel EIS Portal is the secure window to the MetTel TT Management System.

Users submit TTs to request security logs, network maps, and performance report resolution. **Exhibit 2.1.4-11** illustrates a sample EIS Portal Trouble Ticketing Management screen.

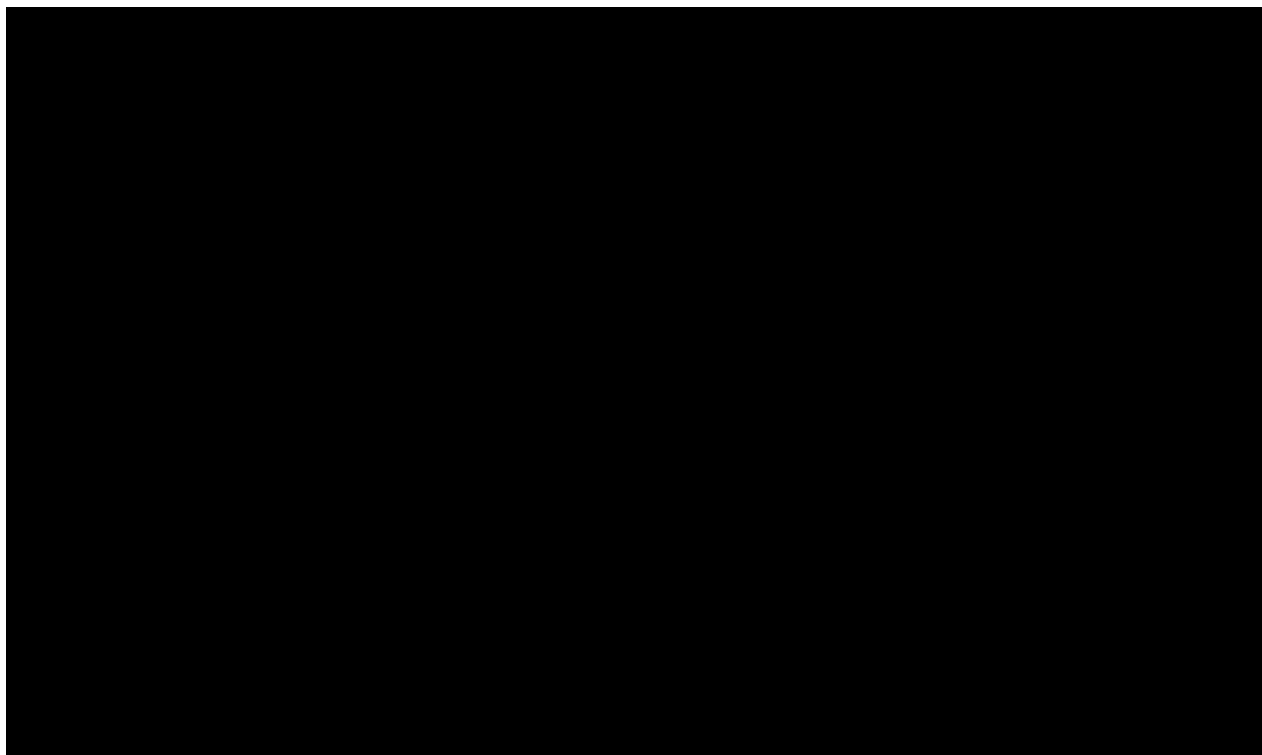


Exhibit 2.1.4-11. MetTel Trouble Ticket Management

2.1.4.1.5 Features [L.29.2.1, C.2.8.1.2]

MetTel provides the following services:

- 1. GFP and SRE Maintenance.** Maintain and repair SRE and GFP as required.
- 2. Agency-specific NOC and SOC.** Customer-specific help desk services and shared and dedicated NOCs and SOCs to meet Agency requirements specified in a Task Order. Utilizing the strengths of the NOC's ability to understand the network baseline, the SOC will investigate anomalous traffic as identified by the data flowing into the NOC from the network and SRE. Our SOC leverages the MetTel Trouble Ticket Management (TTM) to search, source and correlate data for ingestion into the Advanced Threat Intelligence Platform (ATIP). ATIP in turn supports 24x7x365 security monitoring, it aids in advanced hunting and provides data for the incident response lifecycle.

3. Network Testing. Support Agency-specific development services that address the Agency's potential need to test equipment, software, and applications on the MetTel network prior to purchase and deployment. These testing efforts are managed through the Trouble Ticketing Management system and cover voice, data, and video technologies that may or may not be over an IP VPN. Testing is performed at the discretion of the Agency and structured in collaboration with MetTel.

4. Traffic Aggregation Service (DHS Only). MetTel service offerings under EIS (e.g., VPNS, Ethernet Transport, IPS, MTIPS, and IPSS) that transport Internet, Extranet, and Inter-Agency traffic identifies and routes the applicable government traffic through a secure DHS EINSTEIN Enclave for processing by the latest generation of DHS EINSTEIN capabilities. MetTel has identified multiple existing locations in Northern, Virginia that are ANSI/TIA-942 and ICD 705 certified facilities that can serve as DHS EINSTEIN Enclaves. The physical technology implementing the DHS EINSTEIN Enclave will be hosted in secure environments appropriate for the sensitivity of the specific DHS EINSTEIN Enclave. Network connectivity including secured data communication, if required is provided between the DHS EINSTEIN Enclave hosted equipment and DHS data centers.

[REDACTED]

MetTel assumes all responsibility for the installation, configuration, maintenance and repair of the MetTel infrastructure that implements the traffic aggregation capability and the communication services that support interconnection of the DHS EINSTEIN Enclave

equipment to the MetTel infrastructure. This includes the engineering services to accomplish the integration of the DHS EINSTEIN Enclave sensor equipment, data centers, and data communications to the MetTel EIS infrastructure.

MetTel personnel are prepared to assist with the installation, configuration, maintenance and repair of the DHS EINSTEIN Enclave sensor systems. Our personnel performing these functions possess the training, experience and required security clearance / suitability to provide “Smart-Hands” service to the DHS EINSTEIN Enclave supplied equipment.

2.1.4.1.6 Interfaces [L.29.2.1, C.2.8.1.3]

MNS supports the UNIs for all underlying EIS access and transport services.

2.1.4.1.7 Performance Metrics [L.29.2.1, C.2.8.1.4]

We support the performance metrics for MNS as specified in a Task Order. The MetTel EIS Portal provides the interface for the Agency to view and interact with MNS personnel on service issues.

We meet or exceed the values of the KPIs for MNS and all underlying EIS network services we manage. [REDACTED]

[REDACTED]