

## 8.0 SERVICE ENABLING DEVICES (L.34.1.8, M.2.1.5)

(Req\_IDs 34612, 34613, 34614, 34615, 34616, 34617, 34618, 34619, 34620, 34621)

Qwest proposes the following Service Enabling Devices (SEDs) for mandatory services and Qwest-proposed optional services in response to the location-based and service-specific SEDs requirement sets defined in Section J.5. **Figure 8.0-1** lists all the proposed SEDs as per RFP Table L.34.1-10 Proposed SED Items format. Figure 8.0-1 (Table L.34.1-10) provides the technical information associated with every proposed SED item, whether proposed in a SEDs Suite in response to a requirement set as defined in Section 7.5 or proposed for use with an optional service that does not have an associated requirement set.

**Figure 8.0-1 Lists all Qwest-proposed SEDs as per RFP Table L.34.1-10.**

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











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

**8.1 LOCATION-BASED SEDS FOR MANDATORY SERVICES  
(L.34.1.8.1; Req\_IDs 34623, 34624, 34627, 34628, 35104)**

Qwest has provided the following mandatory cost-effective location-based SED solutions to address the Government’s diverse network environment requirements, as shown in *Figure 8.1-1*.

**Figure 8.1-1 Mandatory Location-Based SEDs (RFP Table L.34.1-11 (a) and (b))**

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

**8.1.1 Satisfaction of Requirement Metrics (L.34.1.8.1 (c))**

Qwest’s solutions for SED Sets 33-38 were developed to meet the required User-to-Network Interface (UNI) scenarios as defined in RFP Table

J.5.2 Location-based Requirement Sets. Each SED was chosen to fulfill the Government's requirements based on a number of factors including Access Bandwidth, Number of Legs, UNI Bandwidth, Quantity, and UNI Type.

Qwest has chosen industry leading equipment manufacturers to provide the required SEDs for our Networx services based upon their ability to provide cost-effective, standards-based, hardware solutions.

[REDACTED]

**Managed Network Service**

Under the Managed Network Service (MNS) offering, Qwest will provide overall management of an Agency's network infrastructure. In addition, Qwest will provide real-time proactive network monitoring, rapid troubleshooting, and service restoration. With MNS, Qwest will be the Agency's single point of accountability for the device(s), including operations, maintenance, and administration activities.

**Managed Firewall Service**

With Managed Firewall Service (MFS), Qwest will safeguard the internal networks and systems from hostile activity, protecting critical data from compromise and tampering. Firewalls act as buffers between trusted internal networking environments and external networks, inspecting traffic

according to a set of defined security policies and blocking all traffic not meeting the Agencies' criteria. Qwest MFS policies can be tailored for specific locations. The Qwest MFS provides design, implementation, monitoring, maintenance, and ongoing management of the solution.

### **Intrusion Detection and Prevention Services**

The Qwest Intrusion Detection and Prevention Services (IDPS) consists of software and hardware components that enable the monitoring and identification of potential security threats. This service detects signs of intrusion that may jeopardize the confidentiality, integrity, availability, and control of Agency networks. IDPS provides intrusion sensors that analyze packet activity for indications of network attack, misuse, and anomalies. The service then generates alerts and records suspicious events. In addition, IDPS provides immediate corrective responses that stop or alleviate malicious attacks, which include dropping or rerouting malicious packets.

### **Anti-Virus Management Service**

The Qwest Anti-Virus Management Service (AVMS) enables the detection and removal of system viruses. This service scans executable files, boot blocks, and incoming traffic for malicious code. Anti-virus applications are constantly active in attempting to detect patterns, activities, and behaviors that may signal the presence of viruses. AVMS enables agencies to procure anti-virus capabilities that protect their network infrastructure. AVMS provides the most current anti-virus software and tools. It includes traffic scanning, anti-virus software/hardware, monitoring of anti-virus advisories, management, and maintenance. The service monitors traffic for malicious content and complements the anti-virus software already implemented on Agency desktops.

### 8.1.2 Satisfaction of Performance Metrics (L.34.1.8.1 (d))

Each SED in a suite (see Figure 8.1-1 above) has been designed to meet all of the performance metrics for the services associated with its requirement set. The standard monitoring for Service Level Agreement (SLA) reporting operates as follows:

[Redacted content]

[REDACTED]

Qwest's solution was designed from the beginning for our commercial offering to be SED-vendor agnostic. Qwest's performance management (PM) architecture is standards-based, scalable and flexible, as well as network-centric, imposing the minimal requirements or load at the SDP to achieve a rich set of PM metrics. [REDACTED]

[REDACTED]

Qwest's approach consumes few resources at the SDP (generally the CE router) as probes are sent from the Qwest network. This methodology does [REDACTED]

[REDACTED]

[REDACTED] In summary, Qwest will adhere to all Special Performance Requirements as stated in Section C.2.1.6.2 of the RFP.

**8.2 SERVICE-SPECIFIC SEDs (Requirement Set-Based) FOR OPTIONAL SERVICES (L.34.1.8.2; Req\_IDs 34625, 34626, 34629, 34631, 34632, 34633, 34634, 34635, 34636, 34637, 34638, 34639, 34640, 34641, 34642, 34643, 34644, 34645, 34646, 34647, 34648, 34630, 34650, 34649, 34651, 34652,**







**8.2.1 Reserved**

**8.2.2 Reserved**

**8.2.3 Reserved**

**8.2.4 Reserved**

**8.2.5 SED Set No. 45 – Audio Conferencing Service**

*(Req\_IDs 34713, 34724, 34725, 34726, 34714, 34715, 34716, 34717, 34718, 34719, 34720, 34721, 34722, 34723)*

**8.2.5.1 Description of SED (L.34.1.8.2 (a) and (b))**

Qwest’s solution to SED Set #45, Audio Conferencing Service (ACS), is highlighted below.

[Redacted content]

[REDACTED]

**8.2.5.2 How SED Meets Customer-Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #45 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has proposed devices based on the following criteria:

[REDACTED]

**8.2.6 Reserved**

**8.2.7 SED Set No. 47 - Storage Services**

**(Req\_IDs 34733, 34747, 34748, 34749, 34750, 34751, 34734, 34735, 34736, 34737, 34738, 34739, 34740, 34741, 34742, 34743, 34744, 34745, 34746)**

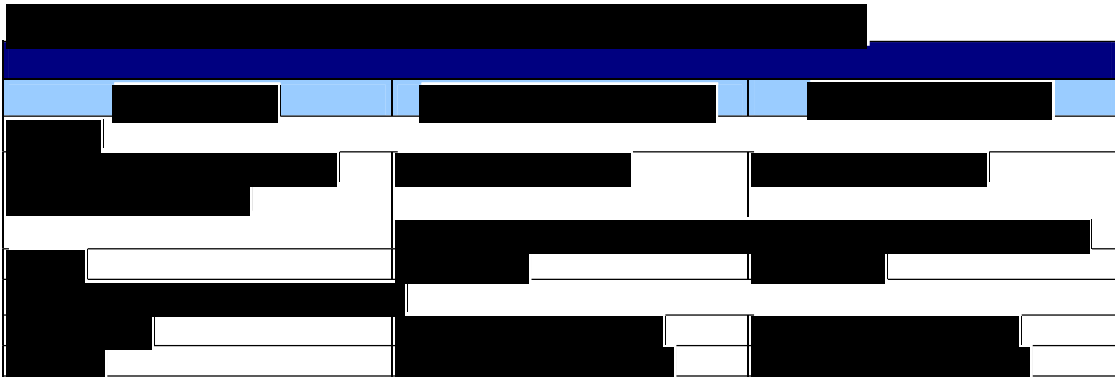
**8.2.7.1 Description of SED (L.34.1.8.2 (a) and (b))**

Qwest's solution to SED Set #47, Storage Services (SS), is illustrated below.

[REDACTED]

[Redacted content]

[Redacted content]



**8.2.7.2 How SED Meets Customer-Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #47 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has proposed devices based on the following criteria: leading cost-effective, standards-based, industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

**8.2.8 SED Set No. 48 - Optical Wavelength Service**

**(Req\_IDs , 34752, 34762, 34763, 34764, 34765, 34766, 34767, 34768, 34769, 34770, 34771, 34772, 34773, 34774, 34753, 34775, 34754, 34755, 34756, 34757, 34758, 34759, 34760, 34761)**

**8.2.8.1 Description of SED (L.34.1.8.2 (a) and (b))**

Qwest's solution to SED Set #48, Optical Wavelength Service (OWS), is highlighted below.



[REDACTED]

**8.2.8.2 How SED Meets Customer-Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #48 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has chosen service-compliant devices based on the following criteria: leading cost-effective, standards-based, industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

### 8.2.9 SED Set No. 49 - SONET Service

(Req\_IDs 34776, 34777, 34795, 34796, 34797, 34798, 34799, 34778, 34779, 34780, 34781, 34782, 34783, 34784, 34785, 34786, 34787, 34788, 34789, 34790, 34791, 34792, 34793, 34794)

#### 8.2.9.1 Description of SED (L.34.1.8.2 (a) and (b))

[Redacted content]





[REDACTED]

**8.2.9.2 How SED Meets Customer Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #49 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has chosen service-compliant devices based on the following criteria: leading cost-effective, standards-based, industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

### 8.2.10 SED Set No. 50 - Video Teleconferencing Service

(Req\_IDs 34800, 34801, 34802, 34803, 34842, 34843, 34844, 34845, 34846, 34847, 34848, 34849, 34850, 34851, 34852, 34853, 34854, 34804, 34805, 34806, 34807, 34808, 34809, 34810, 34811, 34812, 34813, 34814, 34815, 34816, 34817, 34818, 34819, 34820, 34821, 34822, 34823, 34824, 34825, 34826, 34827, 34828, 34829, 34830, 34831, 34832, 34833, 34834, 34835, 34836, 34837, 34838, 34839, 34840, 34841)

#### 8.2.10.1 Description of SED (L.34.1.8.2 (a) and (b))

[Redacted content]

[REDACTED]

**8.2.10.2 How SED Meets Customer Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #50 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has proposed devices based on the following criteria: leading cost-effective, standards-based, industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

**8.2.11 SED Set No. 51 - Video Teleconferencing Service**

**(Req\_IDs 34855, 35031, 34856, 34857, 34896, 34897, 34898, 34899, 34900, 34901, 34902, 34903, 34904, 34905, 34906, 34907, 34908, 34858, 34859, 34860, 34861, 34862, 34863, 34864, 34865, 34866, 34867, 34868, 34869, 34870, 34871, 34872, 34873, 34874, 34875, 34876, 34877, 34878, 34879, 34880, 34881, 34882, 34883, 34884, 34885, 34886, 34887, 34888, 34889, 34890, 34891, 34892, 34893, 34894, 34895)**

**8.2.11.1 Description of SED (L.34.1.8.2 (a) and (b))**

[REDACTED]



[REDACTED]

**8.2.11.2 How SED Meets Customer Premises and Mobile Equipment and Software Requirements (L.34.1.8.1 (c))**

Qwest has developed SED Suite #51 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has proposed devices based on the following criteria: leading cost-effective, standards-based, industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

**8.2.12 SED Set No. 52 - Internet Protocol Telephony Service (Req\_IDs 34909, 34910, 34911, 34912, 34913, 34914, 34915, 34916, 34917, 34918, 34919, 34920, 34921, 34922, 34923, 34924, 34925)**

**8.2.12.1 Description of SED (L.34.1.8.1 (a) and (b))**

Qwest's solution to SED Set #52, Internet Protocol Telephony Service, is referenced below.

[REDACTED]

[Redacted]

**8.2.12.2 How SED Meets Customer Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #52 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has proposed devices based on the following criteria: leading cost-effective, standards-based, industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

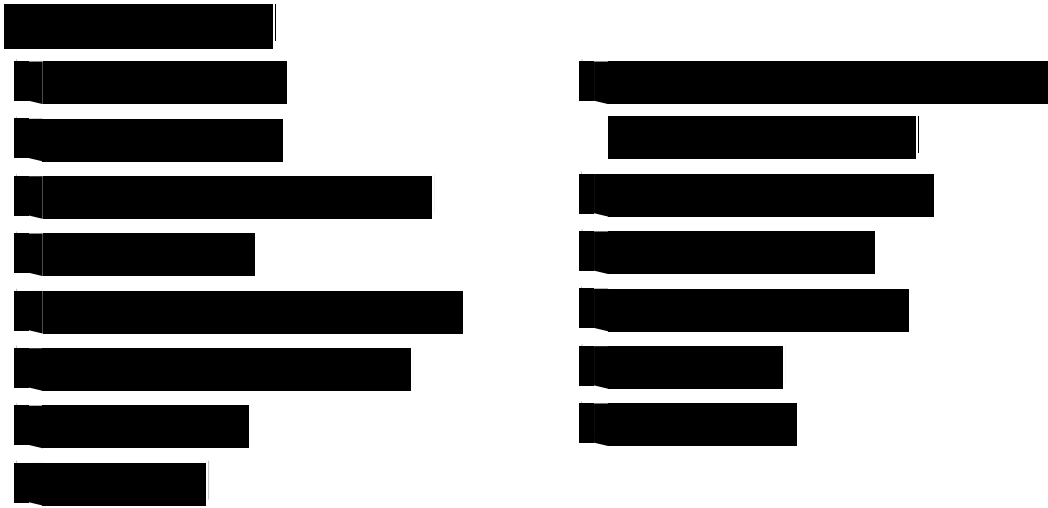
**8.2.13 SED Set No. 53 - Internet Protocol Telephony Service (Req\_IDs 34926, 34927, 34928, 34929, 34930, 34931, 34932, 34933)**

**8.2.13.1 Description of SED (L.34.1.8.2 (a) and (b))**

Qwest's solution to SED Set #53, Internet Protocol Telephony Service, is shown below.

[Redacted]

[REDACTED]



**8.2.13.2 How SED Meets Customer-Premises and Mobile Equipment and Software Requirements (L.34.1.8.2 (c))**

Qwest has developed SED Suite #53 in accordance with the Government's requirements defined in Section J.5.2 of the RFP. Qwest has proposed the solution based on the following criteria: cost-effective, standards-based, leading industry technology and vendors with strong backing and reputation. Qwest's solutions have been designed to fulfill the Government's diverse network environment requirements.

**8.3 LOCATION-BASED SEDS (REQUIREMENT SET BASED)  
FOR OPTIONAL SERVICES (L.34.1.8.3; Req\_IDs 34626, 35104)**

Qwest has provided the following cost-effective location-based SED solutions to address the Government's diverse network environment requirements, as shown in **Figure 8.3-1**.





[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]	[REDACTED]	[REDACTED]	[REDACTED]

### 8.3.1 Satisfaction of Location-Based Requirement Sets (L.34.1.8.3 (c))

Qwest's solution to SED Sets 1-32, 39 and 40 were developed to meet the required UNI scenarios as defined in RFP Table J.5.2 Location-based Requirement Sets. Each SED was chosen to fulfill the Government's requirements [REDACTED]

[REDACTED]

Qwest has chosen industry-leading equipment manufacturers to provide the required SEDs for our Network services based upon their ability to provide cost-effective, standards-based hardware solutions.

[REDACTED]

[REDACTED]

[REDACTED]

### **Managed Network Service**

Under the MNS offering, Qwest will provide overall management of an Agency's network infrastructure. In addition, Qwest will provide real-time proactive network monitoring, rapid troubleshooting, and service restoration. With MNS, Qwest will be the Agency's single point of accountability for the device(s), including operations, maintenance, and administration activities.

### **Managed Firewall Service**

With MFS, Qwest will safeguard the internal networks and systems from hostile activity, protecting critical data from compromise and tampering. Firewalls act as buffers between trusted internal networking environments and external networks, inspecting traffic according to a set of defined security policies and blocking all traffic not meeting the Agency's criteria. Qwest MFS policies can be tailored for specific locations. The Qwest MFS provides design, implementation, monitoring, maintenance, and ongoing management of the solution.

### **Intrusion Detection and Prevention Services**

The Qwest IDPS consists of software and hardware components that enable the monitoring and identification of potential security threats. This service detects signs of intrusion that may jeopardize the confidentiality, integrity, availability, and control of Agency networks. IDPS provides intrusion sensors that analyze packet activity for indications of network attack, misuse, and anomalies. The service then generates alerts and records suspicious events. In addition, IDPS provides immediate corrective responses that stop or alleviate malicious attacks, which include dropping or rerouting malicious packets.

### **Anti-Virus Management Service**

The Qwest AVMS enables the detection and removal of system viruses. This service scans executable files, boot blocks, and incoming traffic for malicious code. Anti-virus applications are constantly active in attempting to detect patterns, activities, and behaviors that may signal the presence of viruses. AVMS enables agencies to procure anti-virus capabilities that protect their network infrastructure. AVMS provides the most current anti-virus software and tools. It includes traffic scanning, anti-virus software/hardware, monitoring of anti-virus advisories, management, and maintenance. The service monitors traffic for malicious content and complements the anti-virus software already implemented on Agency desktops.

### **8.3.2 Satisfaction of Location-Based Requirement Sets (L.34.1.8.3 (d))**

Each SED in a suite (see Figure 8.1-1 above) has been designed to meet all of the performance metrics for the services associated with its requirement set. The standard monitoring for Service Level Agreement (SLA) reporting operates as follows:

[REDACTED]

[REDACTED]

Qwest's solution was designed from the beginning for our commercial offering to be SED-vendor agnostic. Qwest's performance management (PM) architecture is standards-based, scalable and flexible, as well as network-centric, imposing the minimal requirements or load at the SDP to achieve a rich set of PM metrics. [REDACTED]

[REDACTED]

Qwest's approach consumes few resources at the SDP (generally the CE router) as probes are sent from the Qwest network. This methodology does require that the customer respond to pings.

[REDACTED]

[REDACTED]

**8.4 SEDS FOR ADDITIONAL OPTIONAL SERVICES (NOT  
REQUIREMENT SET-BASED)**

[REDACTED]