



MANAGED GLOBAL NETWORK +

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1. GENERAL

1.1 **Service Definition.** Managed Global Network is a fully managed virtual private network solution that combines a complete set of access, networking and CPE capabilities with Verizon's managed network services. With Managed Global Network, Customer identifies the desired outcome for its global network and Verizon designs, implements and manages the network solution to meet the Customer's requirements. Managed Global Network includes a combination of Verizon's managed network services together with its global network products and services in one holistic solution.

1.2 **Standard Service Features.** Managed Global Network at a Customer Site is comprised of Access, Private IP, Broadband, Internet Dedicated or Secure Gateway, Managed WAN and CPE and Related Services. Managed LAN, Managed WAN Optimization, Virtual Network Services and Managed Wireless LAN Service are optional. Managed Global Network supports a number of additional service options which are available under the products and services described below. Technical support is available 24 hours a day 7 days a week via the local Verizon Customer Service Centers. The telephone numbers of the appropriate Verizon Customer Service Center will be provided to Customer.

1.2.1 Access

1.2.1.1 **Service Definition.** Access connects the Customer Site to the edge of the Verizon network from which Customer can connect to other Verizon services.

1.2.1.2 **Standard Features.** Access provides a point-to-point circuit to reach associated Verizon network services.

1.2.1.3 Optional Features

i) **Network Survivability and Diversity (NS&D).** With NS&D, Verizon provides alternative mechanisms for maintaining network access during a disruption to regular service, as described below for the relevant Access versions. Verizon determines the location of particular NS&D features, all of which are subject to availability.

ii) **Proactive Notification.** Where Customer receives Proactive Notification for a network service, it will also apply to the Access connected to that network service. Proactive Notification is described in Customer's applicable network Service Attachment.

1.2.1.4 Available Versions of Access

i) **Access Speed.** Verizon provides capacity throughput based on the Access speed selected by Customer, which is the maximum possible speed.

ii) **Performance Grades.** Verizon provides operational performance (e.g., mean time to repair and availability) and application performance (e.g., data delivery ratio) at the performance grade (e.g., Platinum, Gold, Silver, Bronze) selected by Customer.

iii) **Handoff.** Verizon hands off Access service based on Customer's equipment (e.g., Ethernet, TDM, Wireless), which include the following characteristics:

- For Ethernet, Verizon provides a User Network Interface (UNI) that allows Customer to terminate one or more Ethernet virtual connections (EVC's) onto a single Ethernet Access UNI.
- For Time Division Multiplexing (TDM), Verizon's handoff may include an Access connection over a Dense Wave Division Multiplexing network.
- For Wireless Connection (outside the US), Verizon provides Access via a wireless connection (used as primary or backup access) into Customer's Verizon-provided services.

iv) **UNI Speed.** For an Ethernet handoff from Customer Equipment, Verizon provides the UNI at the speed ordered by Customer.

v) **Demarcation Interface Options.** Verizon provides electrical and optical demarcation interface options.

vi) **Optional Service Features**

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- Express Connect. With Express Connect, Verizon provides access to supported Verizon network services through a wireless connection until the wired service is activated except for Customers outside the U.S. who requested a wireless connection only. At the time wired service is activated, this wireless connection is converted to wireless backup service. Details on supported Verizon network services is available from Verizon on request.
- Wireless Backup. With Wireless Backup, Verizon provides wireless backup for Customer Internet Dedicated service, or connectivity for a remote location into a Verizon-provided network service.
- Network Survivability & Diversity. The following NS&D options are available:
 - Layer 2 Aggregation Geographic Diversity. With Layer 2 Aggregation Geographic Diversity, Verizon provides a second Customer circuit connected to a different Verizon Layer 2 aggregation device (determined by Verizon) in a different building from the primary circuit.
 - Customer Premises Diversity (U.S. Only). With Customer Premises Diversity, Verizon will deliver Access via either a 2 or 4 wire facility, rather than a single wire facility.
 - Carrier Diversity. Where Verizon provides the primary Access circuit, and Customer orders Carrier Diversity, Verizon will obtain an additional access circuit from an alternate access provider, where available. Carrier Diversity does not provide path diversity nor ensure full geographic diversity.
 - Preferred Carrier Designation. With the Preferred Carrier Designation feature, Verizon will obtain the access circuit from an access provider selected by Customer from available carriers. The Preferred Carrier Designation feature does not provide path diversity nor ensure full geographic diversity.
- Customer-Provided Carrier Facility Assignment (CFA) (U.S. Only). Upon Customer request, Verizon will deliver Access to the designated meet-me point on Customer's private Verizon or ILEC dedicated rings, hubs and channelized facilities.
- Customer-Provided Access. With the Customer-Provided Access feature, where Customer has a third-party local access circuit (subject to an interconnection arrangement with Verizon) at a Verizon-approved location, Verizon will connect that local access circuit to its related Verizon network service(s).
- Customer-Provided UNI (U.S. Only). Where Customer has a qualifying Verizon ILEC UNI (e.g., for an existing Ethernet service), Verizon will deliver Access to that UNI. Details on qualifying UNIs are available on request.

1.2.1.5 Customer Responsibilities

- i) Customer Provided Carrier Facility Assignment. Where Access is provided to a Customer-provided Carrier Facility Assignment (CFA), Customer will provide a letter of authorization (LOA) when the terminating parent facilities are not provided by Verizon as part of Access, including when the terminating facilities are provided by a Verizon ILEC. Customer will ensure there is adequate capacity on the parent facility when providing CFA.
- ii) Customer-Provided UNI. Customers providing the UNI between Verizon's Access service and the Customer's equipment will obtain an LOA authorizing Verizon to order an Ethernet virtual connection to the Customer-provided UNI. Customer will ensure there is adequate capacity on the UNI.
- iii) Abuse or Fraudulent Use of SIM Cards. Customer will use SIM cards provisioned by Verizon in connection with Access service only to use that service. Any other use is a material breach of the Agreement.
- iv) Quality of Signal. Customer will check the quality of the signal at the location where the Access with a wireless connection will be installed prior to ordering the service. Wireless network coverage and other factors may affect the availability and performance of the service.
- v) Installation. Unless otherwise provided by Verizon under a separate Service Attachment, Customer will provide the following to support installation activities such as site surveys, testing and activation:
 - Space and power for Verizon terminating equipment if required to deliver service.
 - All facilities and internal cabling to connect Customer's Site to the Demarcation of the Access circuit.
 - Notice to Verizon of the existence and location of wiring or any other risk factors on the Customer's Site which may affect Verizon's installation of the Access circuit.

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1.2.2 **Private IP Service.** Verizon offers 4 variations of this service: Private IP Service, Private IP Layer 2, Private IP Gateway and Private IP Interconnect, subject to availability. The Customer is aware that not all variations may be available in all countries.

1.2.2.1 Available Versions of Private IP

i) Private IP Service

- **Service Definition.** Private IP is a wide area data networking service which provides any-to-any connectivity to transport Customer data between Customer Sites.
- **Standard Service Features**
 - **Route Capacity and IPv4 and IPv6 Protocols.** Verizon will assign a maximum number of routes that Customer may introduce into the Private IP Network based upon the total number of sites expected in a given Customer VPN, as shown in the following table.

Expected Total Number Sites	Maximum Routes IPv4	Maximum Routes IPv6
1 – 50	1,250	150
51 – 250	1,250	750
251 – 500	2,500	1,500
501–1,000	5,000	3,000
1,001+	10,000	6,000

Capacity constraints may vary for Customers using MVIC (available upon request). Customer will select either IPv4 or IPv6 protocol (where available), and a suitable number of IP addresses to be used in conjunction with Private IP and in accordance with Verizon's then-current applicable assignment guidelines.

- **Optional Service Features**
 - **Diversity.** With Diversity service, Verizon provides a second equivalent circuit for the same Customer Site that may be configured as either active or passive, and as providing either Geographic Diversity or Router Diversity, as Customer elects.
 - **Dynamic Network Manager.** With Dynamic Network Manager (f/k/a Dynamic Bandwidth), Verizon provides a web-based interface through which Customer can dynamically manage its CAR and Private IP Port values. Customer accesses the interface through the Verizon Enterprise Center or via an Application Program Interface.
 - **IP Multicasting.** With IP Multicasting, Verizon will simultaneously deliver a single stream of data to multiple recipients in Customer-provided multicast groups.
 - **Multiple Virtual Routing and Forwarding.** With Multiple Virtual Routing and Forwarding, Customer may create multiple virtual private network connections via a single Private IP port. Customer may use those connections to extend the privacy and security of the Private IP service to the various LANs at Customer's Site. Customer understands and accepts that packet drops may occur if Customer creates an oversubscription of virtual private network connections on the Private IP port and Verizon is not responsible for such packet drops.
 - **Class of Service Selection.** Verizon will route Customer traffic based on the priority assigned by Customer using different classes of service designations, which follow the Internet Engineering Task Force Differentiated Services or Diff-Serv model. If Customer does not set different classes, Verizon will route all Customer traffic using the BE class as the default priority designation.
 - **Burstable Billing.** With Burstable Billing, Customer selects a Bandwidth Commitment and may burst up to a higher selected bandwidth as required.
 - **Customer Responsibilities**
 - **Bandwidth Shaping for Ethernet Access Circuit.** If Verizon provisions 'bandwidth shaping' overhead adjustments on the Ethernet Interfaces at the PE egress, it may be necessary for Customer to apply policies at Customer's CE egress to prevent packet loss due to Ethernet protocol overhead used within the Private IP Network (depending on the Private IP platform and Customer's traffic profile).
- #### ii) Private IP Layer 2
- **Service Definition.** Verizon Private IP Layer 2 service provides point-to-point routing, with Customer control of routing, architectural and topology changes.

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- Optional Service Feature. With the Private IP Permanent Virtual Circuits feature, Verizon will add one or more Private IP PVCs on Customer's Private IP Layer 2 port upon Customer's request.
- iii) Private IP Gateway
- Service Definition. With Private IP Gateway service, Verizon provides an interconnection between two private networks based on the characteristics of the gateway, as described below.
 - Standard Service Features. Verizon provides the following Private IP Gateways:
 - Private Wireless Gateway (U.S. Mainland Only). With Private Wireless Gateway, Verizon provides Customer a port that Customer may use to connect Customer's wireless traffic to the Private IP Network.
 - MVIC Service (Select Locations). With MVIC Service, Verizon connects Verizon's Private IP Network to an MPLS Partner's MPLS networks.
 - Secure Cloud Interconnect. With Secure Cloud Interconnect, Verizon provides an interconnection with the network of select third-party cloud providers (with whom the customer has separately contracted) enabling Customer to utilize those third-parties' cloud services over Private IP, Switched E-LAN, or Switched E-LINE network. Verizon also provides network translation functionality (NAT), but Customer may provide Customer's own NAT with the understanding that Customer accepts sole responsibility if Customer fails to properly configure NAT and such failure permits a third party cloud provider to have access to Customer's Private IP addresses. Secure Cloud Interconnect has unique pricing, network designs, and capabilities; details are available on request. In addition, Verizon may terminate Secure Cloud Interconnect, in whole or in part, upon 30 days written notice, where Customer is utilizing Secure Cloud Interconnect on a usage only basis, and Customer has not used this feature for a continuous period exceeding ten months.
- iv) Private IP Interconnect (PIP-I) (Select customers only)
- Service Definition. Private IP Interconnect, or PIP-I, is only available to customers who have been approved by Verizon to receive this feature. With this service, Verizon provides a direct, point-to-point interconnection between Private IP site(s) Customer purchases from Verizon and Customer's third party MPLS-based network, using a shared port gateway designed to support multiple customers.
 - Standard Service Features
 - PIP-I Connection and Port. With PIP-I, Verizon provides a PIP-I Connection and a PIP-I Port. A PIP-I Connection is a physical Port that presents PIP-I at the demarcation point for interconnection to Customer's network. A PIP-I Port is a logical PIP Port associated with a VPN name that attaches to PIP site(s) that Customer has purchased from Verizon.
 - Non-Supported Features. PIP-I does not support multi-Virtual Routing and Forwarding, Dynamic Network Manager and multicasting. PIP-I does not support a redundant configuration.
 - Customer Responsibilities
 - Ordering PIP-I Ports. Customer will order PIP-I Ports only with an assignment to an existing or new PIP VPN name.
 - Ordering Multiple PIP-I Ports. Each PIP-I Connection can be used with multiple PIP-I Ports but each PIP-I Port can be associated with and route traffic to only one PIP-I Connection. Under no circumstances will Customer route traffic presented to PIP-I on one PIP-I Connection to another PIP-I Port on a different PIP-I Connection. If Verizon identifies any such usage of the Service, it reserves the right to immediately terminate the Service to Customer.
 - Restriction on use of PIP-I with Existing Customers of Verizon. Customer will not connect a PIP-I Port to a port on Verizon's MPLS network that is provisioned by Verizon to an existing customer of Verizon.
 - Cross-Connection. With Private IP Port only, Verizon provides a cross-connection to a Verizon IP hub if Customer is located in the same building as the IP hub.
 - Disconnection. Customer shall ensure no PIP-I ports are active prior to disconnect order or the order will not be processed by Verizon.

1.2.3 Internet Dedicated

- 1.2.3.1 Service Definition. Internet Dedicated Service (Internet Dedicated) provides access to the Internet via the Verizon Network.

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1.2.3.2 Standard Service Features. Verizon provides Internet Dedicated with the following standard features:

- 7x24 hour customer support, monitoring and notification
- Static or dynamic IP routing
- Assignment of non-portable IP addresses (IPv4 and/or IPv6 protocol, upon request). IP addresses are provided by Verizon to be used by Customer for transporting Internet traffic with Verizon's Internet Dedicated Service. Acquiring or downgrading Verizon's Internet Dedicated Service as a method solely to obtain or retain IP addresses is not permitted.
- Traffic utilization statistics

1.2.3.3 Optional Service Features. Customer may select any of the following features:

- Diversity. With Diversity service, Verizon provides a second equivalent circuit for the same Customer Site that may be configured as either active or passive, and as providing either Geographic Diversity or Router Diversity, as Customer elects.
- Highlight Reporting Service (available for service in Europe and Asia-Pacific). With Highlight Reporting Service, Verizon provides statistical performance information related to the traffic, health, and availability of Internet Dedicated. Verizon will configure any Verizon-managed access routers to collect such information and Verizon will have access to that information for support purposes. Verizon provides technical support by email or telephone.
- Domain Name Services. Verizon offers primary and secondary domain name hosting services with Internet Dedicated, plus the following domain name services:
 - Domain Name Registration. If Customer orders Domain Name Registration, Verizon will apply for and enter into a registry agreement to register domain names on Customer's behalf.
 - RIPE Registration (available in Europe). If Customer requests RIPE Registration service, Verizon will register an Autonomous System Number and/or provider-independent IP address ranges with the relevant registry (www.ripe.net) on Customer's behalf, subject to applicable registry guidelines and policies.

1.2.4 Broadband

1.2.4.1 Service Definition. Broadband utilizes public IP as transport from Customer Sites to Verizon's network services using a range of broadband access technologies including but not limited to copper, wireless, fiber or cable lines. Broadband must be used in conjunction with a Verizon-provided international network service, and primarily for the purpose of connecting a Customer Site to that network service. Broadband cannot be used solely for Internet access and is not sold on a standalone basis. For each Customer Site Verizon will provision at an agreed bandwidth.

1.2.4.2 Standard Service Features

- IP Addresses. Assignment of a suitable number of dynamic or static (as available) IP addresses (IPv4 protocol) to be used in conjunction with the Service in accordance with the currently applicable assignment guidelines in the relevant region. These IP address are provided from the autonomous system number "ASN" network of a Third Party Vendor.
- Service Equipment. Service Equipment, where relevant, through which Customer can connect its network to the Verizon Network is via an Ethernet interface. In the countries where Service Equipment is not available as part of the Broadband, Broadband will be terminated on CPE.
- Local Access. Verizon orders the local access from the Third Party Vendor who configures and tests the Local Access.

1.2.4.3 Optional Service Features. Additional IP address blocks may be available, though such availability and block size may vary. An IP justification form may be required if additional IP addresses are requested.

1.2.4.4 Customer Responsibilities

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- i) Forms. Where the Third Party Vendor or Verizon requires certain forms to be signed to process Customer’s order (e.g., warranties of agency, letters of agency, service terms), Customer shall sign such forms promptly or, if permitted by Third Party Vendor, Customer authorizes Verizon as Customer’s agent to sign such forms on Customer’s behalf.
- ii) Customer Equipment. Customer is responsible for providing the necessary Customer Equipment to connect its network to the Service Equipment to enable Customer’s use of Broadband and for ensuring that such Customer Equipment is fully compatible with the Service Equipment. Customer can purchase Customer Premises Equipment from Verizon pursuant to a separate Service Attachment.
- iii) Customer-Provided Local Access. Where required by Verizon or otherwise agreed with Customer, a Customer provided Local Access may be used. Local Access should have the technical specifications required for Broadband. For Broadband using a Customer-provided local access, Customer may use the Local Access for PSTN/ISDN services in addition to Broadband; however, certain PSTN/ISDN-services may not be compatible or may operate at a lower speed. PSTN and ISDN services are not part of the Broadband.
- iv) Customer Space. Customer is solely responsible to assess Customer’s space, facilities, computer and transmission capacity needs, interoperability of Broadband with Customer Equipment and Customer’s network. Any extra cabling necessary within the Customer Site, including but not limited to the connection between the Broadband entrance point and Customer’s IP connection point, is not included in the provision of Broadband and is Customer’s responsibility.
- v) Compliance with Instructions. In order to safeguard the integrity of the Third Party Vendor network, or to enable provisioning of Broadband, Verizon or the Third Party Vendor may take certain measures and give instructions to Customer, where necessary, to prevent or correct deficiencies in the Verizon Facilities or Broadband. Customer shall comply with any such instructions promptly.
- vi) Disconnection. Upon termination of the Broadband, Customer shall be required to disconnect the Customer Equipment from the Third Party Vendor’s network.
- vii) POTS Line. If required, Customer will arrange for a Carrier-provided POTS line – standard telephone line – to be in place for Broadband. The POTS line should have the technical specifications required for Broadband.

1.2.5 Secure Gateway Service

1.2.5.1 General. Secure Gateway is a network-based service that securely connects Customer’s private network to the public Internet through a logical, virtual port (“Universal Port” or “Universal Port UBB”). Three versions of Secure Gateway are available:

- 1) Retail and Remote Office (RRO), for users at fixed locations.
- 2) Mobile User or Mobile Client, for mobile users.
- 3) Firewall, a Verizon network-based solution that provides Customer with enhanced security when its end users are using Verizon Private IP Service to access the Internet. Firewall may be purchased in combination with RRO, Mobile User, or Mobile Client – or by itself.

1.2.5.2 Universal Port. Customer selects either a Universal Port or a Universal Port UBB (User-Based Billing), depending on the desired version(s) of Secure Gateway and whether Customer wants charges to be based on its selected port bandwidth (for non-UBB) or its Usage Data Plan (for UBB). Mobile Client is only available with Universal Port UBB. Customers wanting Universal Port with UBB for RRO, Mobile User, or Mobile Client also will need the Virtual Router Service feature (described below).

Universal Port Type	SG Versions Supported	Requires Virtual Router Service?	MRC Based On:
Usage-Based Billing	All – Optimized Service only	Yes	Usage Data Plan
Non-UBB	All except Mobile Client	No	Port Bandwidth

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1.2.5.3 Standard Service Features – Virtual Router Service. Virtual Router Service is a prerequisite for Customer's use of RRO or Mobile User/Mobile Client with Universal Port UBB. Virtual Router Service provides software-enabled "virtual" routers hosted on Verizon's network, each dedicated to Customer, thereby enabling better redundancy and offering a more scalable service to meet Customer's needs. Virtual Router Service enables Customer to connect a combination of RRO devices, as well as Mobile User and Mobile Client users, directly to the Universal Port UBB via encrypted tunnels, thus allowing remote devices and users to route traffic to Customer's Verizon-provided Private IP Service. The bandwidth of Virtual Router Service affects the number of concurrent tunnels supported.

1.2.5.4 Optional Service Features

- i) Partner DSL (Asia-Pac only) – Service Description. Verizon provides Partner DSL Access (Partner DSL) to enable Customer to obtain access with Secure Gateway to Verizon's Private IP network via third-party-provided DSL circuits. Note that the transmission speeds available for selection are based on the maximum possible. If Partner DSL is interrupted or has other performance issues, Verizon will provide to Customer the information it has obtained from the third-party provider.
- ii) Partner DSL – Customer Responsibilities. Customer will:
 - Ensure that its equipment and network are compatible with Partner DSL.
 - Disconnect its equipment and network from the third party provider's network when the Service has ended.

1.2.5.5 Available Versions

- i) Retail and Remote Office
 - Service Definition. With Retail and Remote Office (RRO), Verizon provides Customer with an end-to-end logical connection between Customer's corporate resources on Verizon's Private IP network and Customer's remote sites connected to the Internet or Verizon's IP network – via either a Universal Port or a Universal Port UBB.
 - Standard Service Features
 - Router Management. For RRO, Verizon provides router management that includes configuration, set-up, administration, monitoring, support, and reporting (if applicable) for the RRO devices selected by Customer (each, a Managed Device) upon installation of such devices.
 - RRO Site CPE Monitoring. Verizon provides monitoring, alarm response, and email notification of the RRO CPE on a 24 x 7 x 365 basis.
 - Reporting. With RRO, Customer may also select WAN Analysis Reporting, which is available via a separate Service Attachment.
 - Optional Service Features
 - Managed Device Feature – WAN Backup Service. For RRO routers, Verizon will configure a Managed Device to support backup access (over separately-provided Verizon or third-party Internet service) in the event the primary circuit fails. Verizon will identify where WAN Backup is available outside the U.S. Mainland upon Customer's request.
 - Backup Service Configuration Option. With the Backup Service Configuration Option, Verizon will configure RRO at implementation to be used as a primary service for Customer's remote locations to connect to Verizon Private IP Service, or as a backup service to connect to its Verizon-provided Private IP network and Managed Devices under Verizon's Managed WAN Service.
 - Quality of Service Support. With Quality of Service (QoS) support on the RRO CPE routers, Verizon will route Customer traffic based on the priority assigned by Customer using different classes of service designations, which follow the Internet Engineering Task Force Differentiated Services or "Diff-Serv" model. If Customer does not set different classes, Verizon will route all Customer traffic using the BE class as the default priority designation.
 - Network Engineering Service and Provisioning – Optional Change Management (OCM) (for Networks with 20+ Managed Devices under Full Management in the U.S.). With Network Engineering, Verizon provides network design, planning, operating system vulnerability checks, network documentation change maintenance, and change-management support services for up to

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5 Customer-requested OCM changes per week. Logical changes are provided on a one change-for-2 Managed Devices basis; for example, a 50-device network permits support for up to 25 logical changes. Physical changes requested by Customer are not included within NE, nor is change management support for Managed Devices with more than a single routing table per device such as multi-VRF (virtual routing and forwarding)-configured routers. Verizon will inform Customer where Network Engineering is available outside the U.S. upon Customer's request.

- Managed Device Feature – Switching. For Customers using Cisco-manufactured routers with added switch modules for additional ports and functionality, Verizon provides a switching feature to manage the LAN hardware module (but not the individual ports on the LAN module) that is a part of the Cisco routers.
- Wireless LAN Controller Management. With Wireless LAN Controller Management, Verizon will provide to RRO customers wireless LAN controller management capabilities for Customer network sites with access point CPE compatible with the controller.
- Lightweight Access Point Management. With Lightweight Access Point Management, Verizon will configure a supported CPE device embedded with access point functionality (e.g., a router configured with an antenna) such that it will interoperate with Verizon's Managed Wireless LAN Service.
- Customer Responsibilities
 - OOB Management. Customer will provide an analog telephone connection for out-of-band access to RRO CPE, including, if required, extending the analog telephone connection wiring from the telephone demarcation point to the RRO CPE router. Alternatively, Customer may choose to purchase a Verizon Wireless-provided wireless OOB connection, where available. A third alternative for OOB access is available if Customer chooses the WAN Backup option with a Verizon-provided wireless access used for the backup circuit. In this case, Customer may also choose to use the wireless backup circuit as an alternate access method to the RRO CPE router in lieu of analog or wireless OOB.
 - Alternative Internet Service Provider. Customer may use RRO with Internet service from an alternative service provider (ASP) that offers appropriate Ethernet interface, speed, protocol, and remote access capabilities, the details of which are available from Verizon upon request. Where Customer chooses Internet service provided via an ASP, Customer is responsible for the installation and maintenance of all Customer-provided connections, including but not limited to the telephone line access circuit, to enable OOB management.
- ii) Mobile User or Mobile Client. With Mobile User or Mobile Client, Verizon provides Customer's mobile users secure access to Verizon's Private IP Network via a Verizon-provided or Customer-provided Internet service connection.
 - Mobile User is a single-user service which utilizes software installed on a PC or other device to build an encrypted tunnel to Customer's Universal Port or Universal Port UBB.
 - Mobile Client is a single-user service which utilizes software installed on a PC or other device to build an encrypted tunnel to Customer's Universal Port UBB only.
 - Customer may have both Mobile User and Mobile Client services on the same Universal Port UBB service.
- iii) Firewall. Firewall provides perimeter security via a Verizon-network-based firewall. With Firewall, Verizon provides firewall configuration, administration, support, and the use of a firewall system consisting of firewall equipment and related software that is owned and supported by Verizon on its network. Verizon provides up to seven (7) IP addresses with Firewall; additional IP addresses may be ordered.

1.2.6 Managed WAN

1.2.6.1 Service Definition. Managed WAN Service provides a range of service options enabling Customer to transfer all or part of its wide area network management to Verizon, including network design, CPE configuration, service installation, proactive monitoring, fault notification, reporting, device management and software support (subject to availability).

1.2.6.2 Standard Service Features. The service features and responsibilities are summarized in the table below.

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Division of Responsibilities			
	Monitor and Notify	Physical Management	Full Management
Customer	Customer Manages: <ul style="list-style-type: none"> •Strategic Direction •Fault Isolation •Fault Restoration-Logical •Fault Restoration-Physical •Maintenance-Break/Fix •Change Management-Logical •Change Management-Physical •Configuration Back-Up •Security Policy and Patching 	Customer Manages: <ul style="list-style-type: none"> •Strategic Direction •Fault Restoration-Logical •Change Management-Logical •Security Policy and Patching 	Customer Manages: <ul style="list-style-type: none"> •Strategic Direction •Security Policy
Verizon	Verizon Manages: <ul style="list-style-type: none"> •Monitoring •Fault Notification •Performance Reporting 	Verizon Manages: <ul style="list-style-type: none"> •Monitoring •Fault Isolation •Fault Notification •Fault Restoration-Physical •Maintenance-Break/Fix •Configuration Back-Up •Performance Reporting •Change Management-Physical 	Verizon Manages: <ul style="list-style-type: none"> •Monitoring •Fault Isolation •Fault Notification •Fault Restoration-Logical •Fault Restoration-Physical •Maintenance-Break/Fix •Change Management-Logical •Change Management-Physical •Configuration Back-Up •Performance Reporting •Security Patching
Change management of applicable software licenses that may be configured on Managed Devices does not include responsibility for tracking device-specific licenses where the device vendor permits re-use on new device acquisition.			

- i) Monitor and Notify Service Level. The most basic service option is Monitor and Notify, under which Verizon, provides the following capabilities.
- Monitoring. Verizon proactively monitors all Managed Devices up to the local area network (“LAN”) interface of the Managed Device 24 hours a day, 7 days a week. Verizon will manage devices that are certified by Verizon.
 - Notification and Resolution. Verizon will create a trouble ticket and send a notification to Customer’s designated point of contact within 15 minutes of Verizon’s determination of a Managed Device or transport failure. Upon the creation of a trouble ticket, Verizon will i) if the trouble is due to a Verizon transport service, troubleshoot the transport service until the problem has been verified as fixed and the ticket will then be closed; or ii) if the trouble is due to causes other than a Verizon transport service inform Customer of the fault and monitor the ticket.
 - Managed Services Customer Portal. Verizon will provide a managed services portal (the Verizon Enterprise Center (“VEC”)). The VEC provides a consolidated view of Customer Network information

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24 hours a day, 7 days a week and real time access to project status, contact information, and information about Managed Devices.

- ii) Physical Management Service Level. The Customer can choose Physical Management which contains the capabilities of Monitor and Notify plus additional capabilities described below. As part of Managed WAN Physical service, Verizon provides the following capabilities:
 - Design Services. Verizon will create a Customer design document (“CDD”) based on a written statement of requirements (SOR) agreed to by Customer. Verizon will activate, monitor, and manage the Customer Network as designed in the CDD.
 - Monitoring and Resolution. Verizon provides physical fault detection, isolation, and monitoring services for Managed Devices, 24 hours per day, 7 days per week. Verizon will resolve physical faults whether caused by Verizon, Customer or third party issues. Managed Device logical faults are Customer’s responsibility. Customer will inform Verizon of physical faults once Customer has completed its logical troubleshooting if Verizon is the maintenance provider for Customer’s CPE.
 - Change Management Activities. Verizon will perform the change management activities shown on the VEC as Standard Change Management at no charge. Optional Change Management activities will be performed at the rates shown.
- iii) Full Management. The Customer can choose Full Management, which contains the capabilities of Monitor and Notify and Physical plus additional capabilities described below.
 - Monitoring and Resolution. Verizon will resolve both logical and physical issues, with Customer’s cooperation, either remotely or by dispatching a technician, whether caused by Verizon, Customer or a third party.
- iv) Implementation Options. Managed WAN has 2 implementation options to bring devices under Verizon management: (i) Managed Implementation, which applies to Customer or Verizon provided devices; and (ii) Managed Take Over, which applies to existing, operating networks with Customer-provided devices. Both are subject to an SOR to be agreed upon by the Parties.
- v) Managed Device Software Release Management
 - Installation. Verizon will provide relevant software patches and updates as provided by the Managed Device manufacturer from time to time for installation during a fixed update time period, mutually scheduled by the parties. Warranties on software updates, if available, will be provided directly by the Managed Device manufacturer.
 - Testing. At Customer’s request, Verizon will make reasonable efforts to make available the resources of Verizon’s Customer Test Center (CTC) for the purpose of testing Managed Device manufacturer software prior to the implementation of such software. Verizon’s ability to control the implementation of any new Managed Device manufacturer software release may be limited by rules established by the Managed Device manufacturer software. Such additional CTC testing may be subject to additional fees and result in delay of the software deployment.

1.2.6.3 Optional Service Features

- i) Third Party Transport Service. With the Third Party Transport Service feature, if Customer has 2 or more managed Customer Sites, Verizon will monitor and manage covered third-party provided transport services and inform Customer of the existence of outages or problems with those third-party provided services.
- ii) Device Management. For device management, Customer may select “Router Management,” “SD WAN Management,” “Virtual Host Management,” or “Cloud-Controlled Routing.” Router Management is available with all Managed WAN service levels. SD WAN Management, Virtual Host Management, and Cloud-Controlled Routing are only available with Full Management.
- iii) Managed Device Enhanced Features. For selected devices under Full Management. Verizon can provide configuration, implementation, administration, monitoring, support, reporting (if applicable), and installation of available manufacturer-provided and/or hardware patch/upgrades for the following features as selected by Customer.
 - Firewall. With Firewall, Verizon will manage Customer-selectable zones (e.g. external or untrusted, internal or trusted, DMZ), firewall policies, and firewall rule sets between all zones.
 - Content Filtering. With Content Filtering, Verizon will configure the feature to interface with Customer’s Websense server based on information provided by Customer. Customer can use that server, and/or a backup list of up to 25 URL filters, to control web-based content accessed by end users.

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- Switching (For LAN Module on a Managed Device). With LAN Module Switching, Verizon provides additional LAN ports on the Managed Device. Verizon monitors the LAN module generally, but not individual ports.
- Intrusion Prevention. With Intrusion Prevention, Verizon will detect, alert, and in some cases block attacks (intrusions) on Customer's managed network, using intrusion prevention signature files provided by the Managed Device manufacturer.
- Encryption. With Encryption, in countries where it is available, Verizon will encrypt Customer data traffic between Managed Devices on the Verizon Private IP network. Customer will provide at least two additional Managed Devices with the Encryption feature to act as key servers. If circumstances arise that cause the Encryption feature to fail and prevent communication to and from that Managed Device, Customer will notify Verizon.
- WAN Acceleration. With WAN Acceleration, Verizon will optimize traffic using compression, caching protocol optimization where other Customer Sites on the Customer's managed network have compatible application optimization CPE.
- Wireless LAN Controller Management. With Wireless LAN Controller Management, Verizon will configure the Managed Device to provide Wireless LAN controller management capabilities for Customer Network Sites with compatible access point CPE.
- Lightweight Access Point Management. With Access Point Management, Verizon will configure the Managed Device with embedded Access Point functionality such that it will interoperate with Verizon Managed Wireless LAN service.
- IPSec Tunneling. With IPSec Tunneling, available on certain Managed Devices, Verizon enables the tunneling and encryption of Customer data traffic between two Managed Devices. Enabling this feature on a remote Managed Device is dependent on the same feature being enabled on a separate Customer Managed Device, typically located at the Customer hub site.
- Wireless LAN Access Point. With Wireless LAN Access Point, available on certain Managed Devices that have Access Point functionality, Verizon will configure the Managed Device as a Wireless access point so long as at least one other site or Managed Device in Customer's network has a compatible Wireless LAN Controller.
- Virtual Blade Management. With Virtual Blade Management, Verizon makes available management of the blade on certain Managed Devices that support additional hardware used to host Virtual Machines (VMs) running Virtual Network Services (which above-described combination may also be referred to as "Virtual Network Functions"). To the extent Virtual Network Services are required, they are to be purchased separately.
- Managed VoIP Services including Voice Gateway and Multi-Service IP-to-IP Gateway. With Managed VoIP Services, Verizon will manage VoIP CPE Elements (not VoIP Service devices such as phones) at the same management level as the related Managed Devices. Certain Customer roles and responsibilities for the underlying VoIP Service may be impacted by Managed VoIP Services. Verizon will work with Customer to address such impacts.
- Application Aware Routing (For Select Cisco Devices). With Application Aware Routing, Verizon monitors traffic performance based on flexible Customer-established policies, that classify its traffic into categories to the granularity of applications, and define minimal requirements for loss, delay, and jitter per traffic or application group, such that application traffic can be routed over the preferred network paths as defined by the Customer.
- SD WAN Management (For Viptela Devices). With SD WAN Management, Verizon monitors traffic performance based on flexible Customer-established policies that classify its traffic into application categories and define minimal requirements for loss, delay, and jitter per traffic or application group, such that application traffic can be routed over the preferred network paths as defined by the Customer.
- Software Defined Secure Branch (For select Managed Devices with Versa Software). With Software Defined Secure Branch, Verizon will provide programmable, rules-based WAN routing services, optional security services, centralized management, and integration through APIs. This feature is not available on custom purpose built hardware. This feature maps Customer application traffic over Customer's network in accordance with Customer defined routing policies which can be updated by Customer either manually or automated. Policies are customizable on an application-by-application

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basis. Customer may request a list of the features included in each package by vendor by contacting Customer's account manager. Available services as part of this feature are as follows:

- SD WAN Function. The SD WAN function monitors network performance for each relevant pair of source and destination sites and sends traffic onto those paths that best meet Customer's policies.
- Centralized enforcement of access control and network policies. Any changes to the policy will be applied across the network automatically.
- Encrypted Control and Data Traffic. The traffic can be encrypted end to end for additional protection of the data as it traverses the network.
- Security Function. Verizon will provide security functions including firewall, intrusion prevention, and content filtering services.
- Virtual Host Management. Virtual Host Management supports a universal CPE device deployed to Customer's premises. This hardware device is used to host VMs running Virtual Network Services (which may also be referred to as "Virtual Network Functions") which include Security and WAN Services. Customer acknowledges that Virtual Host Management covers the universal CPE device only, and does not cover any Virtual Network Functions hosted on that universal CPE. For Virtual Network Functions hosted on the universal CPE, Customer must purchase Virtual Network Services under a separate Contract.
- Deep Packet Inspection (DPI). With DPI, there is a second Viptela license added to the Viptela device, allowing Customer to have more granular control over the application flows.
- Cloud Security Services. For select Managed Devices, Verizon will configure and manage the connection from the Managed Device to an external cloud-based security service. Approved security services may be provided by Verizon or third party.
- iv) WAN Backup. With WAN Backup, Verizon configures a Managed Device to support a second access circuit (over separately provided Verizon or third party service) in the event the primary network connection fails.
- v) Network Analysis Service (NA). (For Networks with 20 or more Managed Devices with a United States law contract). With Network Analysis, Verizon will provide monthly network analysis reporting, including interactive monthly calls to review that reporting, starting 60-90 days after installation.
- vi) Network Engineering Service (NE). (For Networks with 20 or more Managed Devices under Full Management). With Network Engineering, Verizon provides engineering planning, design and change-management support services.
- vii) Managed WAN Support for Private IP (PIP) Dynamic Network Manager. Verizon PIP Dynamic Network Manager service is available in either fully automated or semi-automated mode for Managed Devices under Full Management. For Full Management, Verizon is responsible for updating both PE and CE devices. Verizon will make changes only to PE devices for Physical and Monitor and Notify management levels; Customer is responsible for any changes to the CE device.
- viii) Cloud-Controlled Routing Reporting. This feature enables Customer to access comprehensive daily and ad hoc reporting – which may aid Customer in accessing the health and performance of Managed Devices under Cloud-Controlled Routing – via the web portal at <https://dashboard.meraki.com/> or other URL provided by Verizon from time to time (the Web Portal).
- ix) Guest Access. Verizon offers two Guest Access options available per Lightweight Access Point or Wi-Fi-enabled Managed Device under Cloud-Controlled Routing: (i) Cisco Meraki, with additional information available at <https://dashboard.meraki.com/> or other URL provided by Verizon from time to time (the Web Portal); and (ii) Purple Wi-Fi, with additional information available at <http://verizon.purplewifi.net/> or other URL provided by Verizon from time to time (the Guest Access Portal). These Guest Access options provide the following functionality:
 - Guest Wi-Fi. Log-in pages can be created to provide Customer's guests with Wi-Fi access to Customer's network through a tailored splash page presenting Customer's brand identity and offering various login options to facilitate access by Customer's guests.
 - Mobile Location Analytics (MLA). This feature enables Customer to choose to (i) capture information broadcast by the wireless devices of guests and end users (collectively, such data is hereinafter referred to as MLA Data); and (ii) use MLA Data for the protection of Customer's network and marketing purposes.
 - Content Filtering (Purple Wi-Fi-only). Customer can block inappropriate content by requesting either a specific category of sites to be blocked or the specific sites. Customer also has the option to limit traffic via bandwidth controls.

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- x) Splash Page Design Support. Verizon provides splash page design in basic or customized forms. Both include a requirement for guests to consent to an end user license agreement (EULA) to be provided to Customer upon its request for Splash Page Design Support.
- Basic. Basic splash page design support provides up to two hours of minor customization of a one-page, pre-defined, guest access splash page template on either the Cisco Meraki- or Purple WiFi-based platforms. Basic splash page design support consists of adding Customer's logo to the splash page and styling the page with Customer's corporate color scheme and font. Only styling changes will be made. No structural or layout changes will be made to any pre-defined template as part of this Basic option.
 - Customized. Customized splash page design support provides up to eight hours of professional services to fully customize a one-page guest access splash page. Customer's typography, graphics, images, and links may be utilized if provided in HTML or CSS.

1.2.6.4 Customer Responsibilities

- i) Out of Band Access. Unless otherwise agreed, Customer will provide out of band access to each Managed Device over a separate PSTN line or wireless connection (which may include backup wireless), where required and consistent with Verizon specifications for troubleshooting purposes. For Managed WAN Physical, Customer also will provide Verizon read access to the Managed Device configuration, and will maintain any software licenses associated with Managed Devices. Customer will provide Verizon the Simple Network Management Protocol or SNMP read / write community string to any Managed Device whose configuration it wants Verizon to automatically backup.
- ii) Physical Verification of Managed Devices. Upon Verizon's request, Customer will reboot the Managed Devices, provide the LED light statuses of the third party provider Network Terminating Unit where applicable, verify equipment power, verify if all cables are securely connected, and insert a loopback plug.
- iii) Customer Initiated Site Maintenance. Customer will notify Verizon via a Customer Maintenance Change Management Request via the VEC of any maintenance (powering down the site/managed device/third party provider Network Terminating Unit, resetting equipment, re-cabling, physical equipment move) that may affect the operating status of the Managed Devices.
- iv) Customer Owned CPE. Managed Take Over or Managed Implementation may show Customer's CPE needs upgrading before it can be managed. Verizon will manage such CPE after the upgrade is complete. Customer is responsible to refresh the CPE as required, including upgrades for Managed Device Enhanced Features, end-of-life conditions, and the like.
- v) Managed VoIP Services. Customer will do the following for VoIP Services:
- Configuration Requests. Confirm configuration of its active Managed VoIP Services is consistent with its preferences.
 - PSTN Lines. Arrange for the purchase and installation of any PSTN lines for its Verizon or third party VoIP Service design.
 - Feature Changes. Make feature changes at the user or administrator level (e.g. setting up call forwarding for a phone or establishing an auto-attendant) through the Verizon Enterprise Center web portal.
 - IP Phone and PBX Changes. Make IP phone and IP PBX configuration changes (unless Customer is subscribed to Verizon Managed IP PBX Service).
 - Server Support. Implement and maintain a server (e.g., for Cisco, a TFTP [trivial file transfer protocol] server) for IP phone configuration support.

1.2.7 CPE and Related Services

- 1.2.7.1 Service Definition. With Customer Premises Equipment (CPE) and Related Services, Verizon will provide Customer (a) title or use of CPE and Software (collectively, a System), and (b) related Deployment, Maintenance and/or Warranty Services for Systems or for Customer-furnished equipment, subject to availability.
- 1.2.7.2 Available Versions of CPE and Related Services. Verizon offers four versions of CPE and related Services: Equipment Procurement, Deployment, Maintenance and Warranty Services.

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- i) Equipment Procurement. With Equipment Procurement, Verizon provides a System to Customer – either for purchase, MRP or Direct Third Party Arrangement.
 - Purchase. With purchase, Verizon provides Customer title to hardware and a license for its software.
 - MRP. With MRP, Verizon provides Customer use of hardware and a license for its software.
 - Direct Third-Party Arrangement. With Direct Third-Party Arrangement, Verizon provides Customer use of hardware and a license for software and with the understanding that Customer enters into a separate arrangement with a third party from which Verizon has agreed to accept payments on Customer’s behalf. Customer remains responsible to Verizon for payment and other obligations under this Service Attachment if they are not fully satisfied by the third party.
- ii) Deployment Services. With Deployment Services, Verizon provides staging, installation, implementation, move/add/change, de-installation, and/or custom services ordered by Customer.
 - Standard Service Features. Verizon provides Deployment Services in a timely manner, during Business Hours, and will make reasonable efforts to meet Customer-requested dates. Verizon will notify Customer when Deployment Services are complete (known as the In Service Date).
 - Optional Service Features. Customer may order any of the Deployment Service features below independently of any other, except for Basic and Enhanced Staging, which are alternative forms of the same feature.
 - Basic Staging. With Basic Staging, Verizon will stage and then ship the System to the Customer Site(s). Verizon will unpack and verify CPE with package documentation, record serial numbers, load operating system and incremental operating system updates, apply Customer-provided asset tags, power-up test, repackage, and ship (as applicable).
 - Enhanced Staging. Enhanced Staging includes all of the features of Basic Staging plus Verizon will configure the System as requested by the Customer.
 - Installation. With Installation, Verizon will install the System at the Customer Site(s), verify System power-up and operation of network interfaces.
 - Implementation. With Implementation, Verizon will install Service Equipment required for the relevant Verizon managed network services. Verizon also will perform on-Site tests to ensure management applications are properly applied and operational.
 - Move, Add, Change (MAC)
 - Move. For moves, Verizon will de-install the Customer designated equipment from the current designated Customer Site and then install the same equipment in the new designated Customer Site within the same building as shown in the applicable Service Order. Customer will provide packaging to protect the equipment to be moved.
 - Add. For adds, Verizon will install the System at the Customer Site.
 - Change. For Customer-requested changes, Verizon will deliver the System components required to implement the requested change to the Customer Site.
 - De-installation. With De-installation service, Verizon will power down and pack equipment in Customer-provided packaging. Premises cables will be left in place.
 - Custom. Custom Deployment Services are provided as described in a statement of work (SOW) agreed upon under this Service Attachment.
 - Customer-Furnished Equipment (CFE). Verizon will provide Deployment services for approved CFE, which is treated as a System for that purpose.
- iii) Maintenance Services. Verizon offers both Verizon-branded and Third Party Services.
 - 1) Verizon-branded Maintenance (Verizon Care). With Verizon Care, Verizon will repair or replace defective covered Systems.
 - Standard Service Features. Verizon offers three levels of Verizon Care, as indicated below.

Verizon Care Level	Support	Response Time	Management
Verizon Care	8 x 5	Next Business Day	No
Verizon Care Advanced	24 x 7	4 hours	No
Verizon Care Premium?	24 x 7	4 hours	Yes

- Verizon will make all reasonable efforts to isolate System defects of which it has received notice.
- Verizon will repair or replace defective Systems or parts as needed.
- Where Systems or parts are replaced, Verizon will use new or like new replacements of like kind and functionality from a manufacturer of Verizon’s choice.

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- Verizon will restore the System to its prior working condition, except that Verizon will restore software to the last configuration implemented by Verizon, or to a later configuration if provided to Verizon by the Customer.
- Verizon will provide Verizon Care during the period of time that the manufacturer supports the affected System. After that, Verizon will use reasonable efforts to provide Verizon Care until Customer upgrades or replaces the affected System.
- **Optional Service Features**
 - **Customer-Furnished Equipment.** For CFE, Verizon will provide Verizon Care for approved CFE, which is treated as a System for maintenance purposes.
 - **Maintenance Reporting (which is also known as Verizon Advanced Care Reporting).** With Maintenance Reporting, Verizon provides reports which track and inventory Customer Systems. Verizon will work remotely with Customer to coordinate the configuration and deployment of collection software on the designated Customer provided server in accordance with the manufacturer's requirements at time of deployment. Customer will provide remote VPN to support the data collection. If Customer does not want network information to be transmitted and used for reports, Customer may request Verizon to remotely disable collection features or uninstall collector software, at which time Verizon will no longer be able to provide this Service.
- 2) **Third Party Services.** With Third Party Services, a vendor (as Verizon's subcontractor) provides Customer the level of service indicated in the applicable third party service agreement (TPSA) and end user license agreement (EULA), subject to the general terms of Customer's Agreement with Verizon.
 - **Standard Service Features.** The TPSA and EULA are generally available on the vendor's website as it may be updated from time to time. When ordering Third Party Services, Customer acknowledges having read and understood the applicable TPSA and EULA. If a third party provides notice to Verizon that Customer has breached the TPSA and/or EULA, Verizon will have the right to terminate the applicable Third Party Service. A partial list of current TPSAs is provided below, however, additional TPSAs may be provided to Customer from Verizon from time to time as required by a Service Order or via the vendor's website. Verizon provides no warranties, guarantees or assurances of quality for Third Party Services but will pass through to Customer the benefit of any applicable third party warranties.
 - **Cisco Services.** <http://www.cisco.com/go/servicedescriptions/>
 - **Juniper Services.** <http://www.juniper.net/support/guidelines/990216.pdf>.
 - **Polycom Services.** <http://www.portal.polycom.com>.
 - **Riverbed Services.** <http://www.riverbed.com/license>
 - **Sonus Services.** <http://www.sonusnet.com/global-services/customer-support/maintenance-plans.aspx> and <http://www.sonusnet.com/Products/Sonus-Software-EULA.aspx>.
 - **MobileIron.** MobileIron server software may only be installed in Customer owned, maintained and/or controlled servers housed on Customer's premise, or in data center space controlled by a third party, located within the United States.
 - **AirWatch.** http://www.air-watch.com/downloads/legal/20130815_AirWatch_EULA.pdf. Customer's acceptance of a Service Order containing AirWatch software represents agreement to license such AirWatch software under the AirWatch EULA. Maintenance and Support is included as part of manufacturer's subscription license plan or at an additional annual fee under a perpetual license model as shown in a Service Order. In the case of a perpetual license, annual Maintenance and Support commences upon delivery of the software.
 - **Actifio:** For EULA please see <http://www.actifio.com/eula>. Also for TSPA see www.actifio.com/resources/actifio-support-and-maintenance-policy/ for Actifio support and maintenance and <http://www.actifio.com/resource-center/> for Actifio hardware, software and services descriptions.
- iv) **Warranty Service.** With Warranty service, Verizon will replace defective covered peripheral or endpoint equipment (e.g., IP phones, modems) using new, like new, or refurbished parts or equipment of like kind and functionality. Verizon will remotely validate that the equipment is defective and ship replacement equipment for delivery on the next Business Day. Customer is responsible for installing the replacement equipment.

1.3 **Optional Service Features.**

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1.3.1 **Managed LAN.** Managed LAN Service provides a range of capabilities for managing Customer's local area network up to the access ports on the LAN Switches, including design, planning, implementation, and network management (subject to availability).

1.3.1.1 Standard Service Features. The service features and responsibilities are the same as those summarized in the table set forth in Section 1.2.6.2 above.

- i) Monitor and Notify Management. The most basic level of Managed LAN is Monitor and Notify, under which Verizon provides the following capabilities.
 - 1) Monitoring. Verizon proactively monitors all designated LAN switches 24 hours a day, 7 days a week. Verizon will manage only devices that are certified by Verizon.
 - 2) Notification. Verizon will create a trouble ticket and send a notification to Customer's designated point of contact within 15 minutes of Verizon's determination of a managed LAN switch failure. Upon the creation of a trouble ticket, Verizon will i) troubleshoot the transport service until the problem has been verified as fixed and the ticket will then be closed, if the trouble is due to a Verizon transport service; or ii) inform Customer of the fault and monitor the ticket if the trouble is due to causes other than a Verizon transport service.
 - 3) Managed Services Customer Portal. Verizon will provide a managed services portal on the Verizon Enterprise Center or other website provided by Verizon from time to time (VEC). The VEC provides a consolidated view of Customer Network information 24 hours a day, 7 days a week and real time access to project status, contact information, and information about Customer's managed LAN switches.
- ii) Physical Management. Customer can choose Physical Management which contains the capabilities of Monitor and Notify plus additional capabilities described below
 - 1) Design Services. Verizon will create a Customer design document (CDD) based on a written statement of requirements (SOR) agreed to by Customer. Verizon will activate, monitor, and manage the Customer Network as designed in the CDD.
 - 2) Monitoring and Management. Verizon provides physical fault detection, isolation, and monitoring services for LAN Switches, 24 hours per day, 7 days per week. Verizon will resolve physical faults whether caused by Verizon, Customer or third party issues. LAN Switch logical faults are Customer's responsibility. Customer will inform Verizon of physical faults once it has completed its logical troubleshooting if Verizon is maintenance provider for Customer's CPE.
 - 3) Change Management Activities. Verizon will perform the change management activities shown on the VEC as Standard Change Management at no charge. Optional Change Management activities will be performed at the rates shown.
- iii) Full Management. The Customer can choose Full Management, which contains the capabilities of Monitor and Notify and Physical plus additional capabilities described below.
 - 1) Monitoring and Management. Verizon will resolve both logical and physical issues, with Customer's cooperation, either remotely or by dispatching a technician, whether caused by Verizon, Customer or a third party.
- iv) Implementation Options. Managed LAN has two implementation options to bring devices under Verizon management. Managed Implementation, which is designed to bring a new customer Managed LAN network online and Managed Take Over, which applies to existing, operating networks with Customer-provided devices. Both are subject to an SOR to be agreed upon by the Parties.
- v) Managed Device Software Release Management
 - 1) Installation. Verizon will provide relevant software patches and updates as provided by the Managed Device manufacturer from time to time for installation during a fixed update time period, mutually scheduled by the Parties. Warranties on software updates, if available, will be provided directly by the Managed Device manufacturer.
 - 2) Testing. At Customer's request, Verizon will make reasonable efforts to make available the resources of Verizon's Customer Test Center (CTC) for the purpose of testing Managed Device manufacturer software prior to the implementation of such software. Verizon's ability to control the implementation of any new Managed Device manufacturer software release may be limited by rules

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established by the Managed Device manufacturer software. Such additional CTC testing may be subject to additional fees and result in delay of the software deployment.

1.3.1.2 Optional Service Features

- i) Device Management. For device management, Customer may select either “Switch Management” or “Cloud-Controlled Switching”. Switch Management is available with all Managed LAN service levels. Cloud-Controlled Switching is only available with Managed LAN Full.
- ii) Wireless LAN Controller Management Feature. With Wireless LAN Controller Management (available at Full Management level and supported on specific models of LAN Switches), Verizon manages compatible Wi-Fi access points in the Customer Network using the Wireless LAN Controller capability on the LAN switch.
- iii) Port Monitoring. With Port Monitoring, (available at Full Management level), Verizon will monitor up to the maximum number of ports shown below per LAN Switch size. For Verizon to monitor them, ports must interface directly to another Customer internal network device which is available to Verizon on a continuous basis. Verizon will not monitor ports connected to end user devices (which may be off for a wide range of reasons unrelated to their performance).

Port Monitoring			
Switch Size	Small	Medium	Large
Maximum Number of Ports Monitored	2	6	12

- iv) Routing Support. With Routing Support (available at Full Management level), Verizon will manage the configuration of intra-LAN (Layer 3) routing protocols for those LAN Switches that support it.
- v) Network Analysis Service. (For Networks with 20 or more LAN Switches with a United States law contract). With Network Analysis, Verizon will provide monthly network analysis reporting, including interactive monthly calls to review that reporting, starting 60-90 days after installation.
- vi) Network Engineering Service. (For larger Networks, i.e., those with 20 or more Managed Devices under Full Management). With Network Engineering, Verizon provides engineering planning, design and change-management support services.
- vii) Cloud-Controlled Switching Reporting. This feature enables Customer to access comprehensive daily and ad hoc reporting – which may aid Customer in accessing the health and performance of Managed Devices under Cloud-Controlled Switching – management via the web portal at <http://www.verizonenterprise.com/medium/wifi/> or other URL provided by Verizon from time to time (the Web Portal).

1.3.1.3 Customer Responsibilities

- i) Out of Band Access. Unless otherwise agreed, Customer will provide out of band access to each Managed Device over a separate PSTN line or wireless connection (which may include backup wireless), where required and consistent with Verizon specifications for troubleshooting purposes. For Managed LAN Physical, Customer also will provide Verizon read access to the Managed Device configuration, and will maintain any software licenses associated with Managed Devices. Customer will provide Verizon the Simple Network Management Protocol or SNMP read/write community string to any Managed Device whose configuration it wants Verizon to automatically backup.
- ii) LAN Switch Removal, Repair, and Access. Customer will notify Verizon before removing or repairing the LAN Switch. For LAN Switches under Full Management, Customer will notify Verizon before physically accessing, configuring, amending, or modifying a LAN Switch. Customer will provide Verizon with full access to the LAN Switches as needed to provide the Managed LAN Service.
- iii) Customer Provided Facilities. Customer is responsible for all equipment, software, wiring, power sources, telephone connections and/or communications services necessary to use Managed LAN Service (Customer Facilities), which Customer will ensure is compatible at all times. Customer may meet this responsibility by contracting separately with Verizon to perform these tasks.
- iv) Customer Owned CPE. Managed Take Over or Managed Implementation may show Customer’s CPE needs upgrading before it can be managed. Verizon will manage such CPE after the upgrade is complete.

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Customer is responsible to refresh the CPE as required, including upgrades for LAN Switch features, end-of-life conditions, and the like.

1.3.2 Managed WAN Optimization Service. Managed WAN Optimization Service (Managed WOS or MWOS) provides activation, management, and monitoring service for WAN Accelerators within Customer's Verizon Managed WAN service as well as optional features (subject to availability).

1.3.2.1 Standard Service Features. Customer may order 1 of 3 levels of Managed WOS in combination with its Managed WAN Services: 1) Monitor and Notify; 2) Physical Management; or 3) Full Management, each as described below.

- i) **Monitor and Notify.** The most basic level of Managed WOS is Monitor and Notify, under which Verizon provides the following capabilities.
 - **Monitoring.** Verizon proactively monitors each WAN Accelerator 24 hours a day, 7 days a week.
 - **Notification.** Verizon will create a trouble ticket and send a notification to Customer's designated point of contact within 15 minutes of Verizon's determination of a WAN Accelerator failure. Upon the creation of a trouble ticket, Verizon will inform Customer of the fault and monitor the ticket.
 - **Customer Portal.** Verizon will provide a Customer Portal (the Verizon Enterprise Center or other website provided by Verizon from time to time).
- ii) **Physical Management.** Physical Management contains the capabilities of Monitor and Notify plus the additional capabilities of initial pre-implementation network design consultation, implementation, physical and logical WAN Accelerator fault isolation, detection, and monitoring. Verizon will manage the physical fault resolution by Verizon or an Approved Maintenance Provider.
- iii) **Full Management.** Full Management contains the capabilities of Physical Management plus the following additional capabilities:
 - **Application Analysis Service.** Verizon will provide Application Analysis service as a network consulting service which provides ongoing WAN Accelerator performance reports analysis, WAN Accelerator reporting overview, and follow-up recommendations relating to key areas of WAN Accelerator network operation.
 - **Reporting.** Verizon will provide quarterly aggregate performance and utilization analysis and reporting to Customer for Customer's WAN Accelerator network. In addition, ad hoc reports can be requested by Customer and will be fulfilled at Verizon's discretion. Reports are delivered via the Customer Portal or Customer may request email delivery. Verizon will schedule a telephone conference with the Customer to present and review the monthly reporting at a mutually acceptable time. Certain CPE configurations may require a Management Console to provide performance analysis and reports for Full Management.
 - **Problem Notification and Resolution.** Verizon will provide problem notification and such resources as necessary to isolate and resolve performance issues with the WAN Accelerator network.
 - **Performance Review.** Verizon and the Customer will review the performance of the WAN Accelerator network every 3 calendar months. Customer may accept or reject Verizon's recommendations at its option and accepted recommendations may be implemented by a Customer-initiated change management request.

1.3.2.2 Optional Service Features

- i) **Implementation.** Customer can order either managed implementation or managed take-over implementation options to implement Managed WOS at each Customer Site. Managed implementation and managed take over for Managed WOS is performed in the same manner as Managed WAN and under the same terms and conditions as the Verizon Managed WAN terms.
- ii) **WAN Analysis Standard Select Reporting.** As part of Monitor and Notify, Customer may order WAN Analysis Reporting pursuant to the terms of the WAN Analysis Service Attachment. With this service, Verizon provides reporting services using an automated reporting and analysis tool that selects and condenses the management information base (MIB) data into graphical reports available on demand via the Customer Portal.

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- iii) Network Engineering Service. (For Customer Networks with 20 or more Managed Devices under Full Management). With Network Engineering, Verizon provides engineering planning, design and change-management support services.
- iv) Wireless OOB. Verizon may provide Customer with the option to order wireless out of band (OOB) access for approved Managed Devices. Wireless OOB provided on the SIM card will be machine-to-machine (M2M) data only (no voice) and carrier service data (CSD) and the PIN code of the SIM card will be removed.

1.3.2.3 Customer Responsibilities. Customer is responsible for the following:

- i) General. Customer is responsible for the LAN connection and the operation and management of equipment necessary for inter-connection of the WAN Accelerator(s) and/or the Network or otherwise for use in conjunction with Managed WOS. Customer Equipment must continue to be compatible with Verizon's technical requirements related to Managed WOS.
- ii) Monitor and Notify. With Monitor and Notify, Customer is responsible for trouble isolation, diagnostics, repair and maintenance dispatch for the WAN Accelerator and associated downstream attached devices (e.g. cabling, servers, non-managed switches, firewalls, and personal computers). Customer is also responsible for the management of all equipment connected to the WAN Accelerator. Customer will provide Verizon with the SNMP "Read Access Community String" for all monitored WAN Accelerators. Customer is responsible for making and managing changes to its WOS network and any routine maintenance of each WAN Accelerator.
- iii) Physical Management. With Physical Management, logical faults are Customer's responsibility. Customer will inform Verizon once it has completed its logical troubleshooting.
- iv) Full Management. With Full Management, Customer is responsible for the resolution of Customer related issues.
- v) Customer Supplied WAN Accelerator. If the WAN Accelerator is not provided by Verizon, Customer will ensure that it complies with Verizon's reasonable instructions and requirements to modify the WAN Accelerator to enable Verizon to provide, and Customer to receive, Managed WOS.
- vi) Customer Portal. Customer is limited to 10 user accounts and is responsible for ensuring that all users understand and comply with Verizon's confidentiality requirements.
- vii) In-Band and OOB Access. Unless otherwise agreed, Customer will provide both in-band and OOB access to each Managed Device consistent with Verizon specifications for troubleshooting purposes. For Physical or Full Management, Customer also will provide Verizon read access to the Managed Device configuration, and will maintain any software licenses associated with Managed Devices. Customer will provide Verizon the SNMP read / write community string to any Managed Device whose configuration it wants Verizon to automatically backup. Managed WOS charges do not include OOB charges and such charges are payable by Customer directly to the provider, even if ordered via Verizon. OOB charges for Verizon-provided OOB are payable to Verizon. OOB access will only be used for Managed Device OOB management by Verizon.
- viii) Dedicated Analog Line. Where Managed WOS is provided with a non-Verizon supplied internet network connection and Customer has ordered Physical or Full Management, Customer must supply Verizon with OOB access via a separate dedicated analog line or CDMA or GSM/GPRS modem or dedicated analog line, as applicable.
- ix) Performance Review. Customer will ensure that its contact details are up to date for quarterly review planning. If Verizon cannot reach the Customer contact by the provided phone or email, the review may be cancelled at Verizon's sole discretion.
- x) Disconnection of PSTN OOB. Upon termination of the Managed WOS for whatever reason, it is Customer's responsibility to disconnect the PSTN lines at Customer Sites where Customer has provisioned the PSTN lines for OOB Access, as applicable.

1.3.3 Virtual Network Services. Virtual Network Services + (VNS) is a virtual network service which provides functions (VNFs) deployed on cloud-based virtual machines (VMs) in the Hosted Network Services (HNS) environment, or premise-based universal CPE hardware (uCPE) VMs, subject to availability.

1.3.3.1 Standard Service Features. With VNS, Verizon provides a choice among standard software-based services: Virtual Network Services – Routing, Virtual Network Services - Security, Virtual Network

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Services - SD-Wan, Virtual Network Services – Software Defined Secure Branch, Virtual Network Services-Sessions Border Controller (SBaaS) and Virtual Network Services - WAN Optimization.

- i) Feature Package. With VNS, each function may be available in up to 3 feature packages: Essential, Core, and Complete.
- Essential. Essential provides functionality common within the industry.
 - Core. Core provides additional functionality.
 - Complete. Complete provides all the services that the vendor makes available functionality.
- ii) Service Sizing. Once a feature package is chosen, Customer will then choose the service size based on the transfer rate of the associated network connection(s) or the number of maximum connections allowed or maximum number of concurrent calls, dependent on the VNF service chosen. The sizing options are specified in the table below.

Service Feature	Capacity Unit	Extra-Small	Small	Medium	Large	X-Large	XX-Large
Routing	Bandwidth (Mbps)	Up to 10	Up to 20	Up to 50	Up to 100	Up to 1000	Up to 2000
Security	Bandwidth (Mbps)	Up to 10	Up to 20	Up to 50	Up to 100	Up to 1000	Up to 2000
SBCaaS	Max Concurrent Calls	N/A	Up to 250	Up to 1000	N/A	N/A	N/A
WAN Optimization	Max Connections	150	650	2300	6000	14000	100000
SD-WAN	Bandwidth (Mbps)	Up to 10	Up to 20	Up to 50	Up to 100	Up to 1000	N/A
Software Defined Secure Branch	Bandwidth (Mbps)	Up to 10	Up to 20	Up to 50	Up to 100	Up to 1000	N/A

- iii) Virtual Network Services - Routing. With VNS - Routing, Verizon will provide the following routing functions based on the feature package chosen:
- Routing Services. Management of virtualized routers that provide routing capabilities for traffic traversing MPLS, Internet, or wireless circuits.
 - IP SEC VPN. The provision of IP Sec VPN, a protocol suite for secure IP communications which authenticates and encrypts each IP packet of a communication session, utilizing a set of security protocols at the network or packet processing layer of network communications.
- iv) Virtual Network Services – Security. With VNS - Security, Verizon will provide security functions including firewalls to establish a barrier between a trusted, secure network and another unsecure network, such as the Internet. Additional security functions that may be available are as follows:
- Data Loss Prevention (DLP). DLP utilizes business rules to classify and protect confidential and critical information to prevent access by unauthorized end users.
 - Threat Prevention. Threat Prevention protects Customer from malware and fraud that may be found in links in emails or IMs, or malware attachments on servers that access the internet.
 - Distributed Denial of Service (DDOS). DDOS helps prevent distributed denial of service attacks.
 - Intrusion Detection Services (IDS). IDS is a security management system for networks that analyzes information from various areas within a network to identify possible security breaches, which include both intrusions (attacks from outside the organization) and misuse (attacks from within the organization).
 - Intrusion Prevention Services (IPS). IPS monitors Customer's network activities for malicious activity and blocks such activity when identified.
 - URL/Web Filtering. URL or Web Filtering helps Customer to prevent computer users from viewing inappropriate web sites or content, or to prevent access of known malware hosts, checking the origin or content of a web page against a set of rules provided by Customer and the security service vendor.

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- Antispam. Antispam detects e-mail messages that are unsolicited advertisements, *i.e.* spam, and divert the messages to a spam folder (junk mailbox).
 - Antivirus. Antivirus detects and removes malicious software through an antivirus engine that is frequently updated as new threats emerge.
 - IP Sec VPN. IP Sec VPN provides a protocol suite for secure IP communications by authenticating and encrypting each IP packet of a communication session, utilizing a set of security protocols at the network or packet processing layer of network communications.
- v) Virtual Network Services - SD-WAN. With VNS - SD-WAN, Verizon will provide intelligent and programmable, rules-based WAN routing services, centralized management, and integration through APIs. The features packages associated with VNS – SD-WAN are installed on either or both the uCPE hardware as a VNF or in the Hosted Network Services platform. This Service Feature maps Customer application traffic over any combination of the internet, wireless or MPLS networks in accordance with Customer defined routing policies. Policies are customizable on an application-by-application basis. As network conditions shift, real-time automated and manual route changes enable Customer Data to be delivered over the best available transport for each application. Additional features that may be available are as follows:
- Application Aware Routing (AAR). Verizon will provide AAR which is intended to overcome the limitations of a site connected to more than one network with respect to routing metrics. AAR allows for flexible utilization of all available network capacity attached to a network site and Customer can establish policies that classify its traffic into categories to the granularity of applications, and define minimal requirements for loss, delay, and jitter per traffic class. AAR also will monitor network performance for each relevant pair of source and destination sites and send traffic onto those paths that best meet Customer's policies. If network conditions change and such policies cannot be enforced, AAR dynamically rearranges how application traffic is distributed across the available traffic paths in the background, so that an end user will not experience application level performance outside the boundaries set by the policies to the extent that there is enough bandwidth for the traffic.
 - Centralized enforcement of access control and network policies. Any changes to a policy will be applied across the network automatically.
- vi) Virtual Network Services - WAN Optimization. With VNS - WAN Optimization Verizon will provide functions which enhance the performance of Customer's WAN network connectivity, through both network packet and application aware optimization. Additional features which may be available are as follows:
- Application Streamlining and Optimization. Application streamlining which isolates much of chatty application protocol traffic to the LAN instead of the WAN in order to minimize latency.
 - Compression. Compression which relies on data patterns that can be represented more efficiently and are applied on-the-fly to data passing through hardware or VMs.
 - Data Streamlining. Data streamlining which includes the de-duplication of data such that 16 byte data references can replace words and even full documents to minimize resending redundant data.
 - TCP Acceleration/Transport Streamlining. TCP Acceleration/Transport streamlining which optimizes TCP data packet sizes and reduces the number of round trips data takes.
- vii) Virtual Network Services – Software Defined Secure Branch. With VNS – SD Secure Branch, Verizon will provide programmable, rules-based WAN routing services, optional security services, centralized management, and integration through APIs. This feature installed on either or both on premises or in the Hosted Network Services platform. This feature maps Customer application traffic over Customer's network in accordance with Customer defined routing policies which can be updated by Customer either manually or automated. Policies are customizable on an application-by-application basis. Customer may request a list of the features included in each package by vendor by contacting Customer's account manager. Available services as part of this feature are as follows:
- Application Aware Routing Function. With Application Aware Routing, SD WAN monitors network performance for each relevant pair of source and destination sites and sends traffic onto those paths that best meet Customer's policies.
 - Centralized enforcement of access control and network policies. Any changes to the policy will be applied across the network automatically.
 - Encrypted Control and Data Traffic. The traffic can be encrypted end to end for additional protection of the data as it traverses the network.

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- Security Function. Verizon will provide security functions including firewall, Intrusion Prevention (IPS), and content filtering services. Security functions are only available with Core and Complete service levels.
- viii) Virtual Network Services – Sessions Border Control. With VNS-Sessions Border Controller (SBCaaS), Verizon will provide security for VoIP traffic. In addition to VoIP, VNS - SBCaaS includes features that Customer may use for protocol interworking, QoS measurement and enhancement. The VNS – SBCaaS will be supported on the Hosted Network Service platform. VNS - SBCaaS includes call routing. Customer may request a list of the features included in each feature package by vendor by contacting Customer's account manager. Additional features which may be available are as follows:
- Basic Call Routing Engine. Support for call routing based on called and calling party, trunk groups, codec filtering and Call Route Prioritization.
 - Advanced Call Routing. Support for large routing table, SIP username/URL routing, advanced route prioritization including time of day, day of week, call screening and blocking.
 - Signaling Services. SBC implemented as a B2BUA supporting SIP and H.323 call control including interworking between SIP and H.323 networks. In addition, support for SIP-I/T are also included.
 - Media Services. NAT and NAPT traversal, media anchoring, transcoding, DTMF detection and insertion.
 - Security. Session aware firewall, topology hiding, Line rate DoS/DDoS protection, Rogue RTP protection, Malformed packet protection, media encryption (SRTP) and Signaling encryption (IPsec, TLS).
 - QoS. Bandwidth Management, TOS Packet Marking, Call Admission Control.
- ix) VNS Full Service Management Level (VNS Full). Verizon will provide management for each VNS function and this will be bundled with management of Universal CPE Device Management supported under the Managed WAN Service Attachment. If the VNS service is hosted in the HNS environment, the HNS hardware and systems are part of the service and does not require the Managed WAN Service Attachment. VNS Full also provides the following:
- Notification. Verizon provides fault notification for the Managed VNFs. Verizon will create a trouble ticket and attempt to notify Customer's designated point of contact via e-mail or automated phone message within 15 minutes of Verizon's determination of a Managed VNF or transport failure. Verizon will begin troubleshooting the data networking circuit until the problem has been verified as fixed and the ticket will then be closed, if the trouble is due to a Verizon data networking circuit; or ii) inform Customer of the fault and monitor the ticket if the trouble is due to causes other than a Verizon data networking circuit and upon resolution by Customer, the ticket will be closed.
 - Managed Services Customer Portal. The managed services portal (the Verizon Enterprise Center or other website provided by Verizon from time to time ("Customer Portal")), is an Internet web portal that provides a view of Customer Network information 24 hours a day, 7 days a week. Customer is limited to 10 user accounts and is responsible for ensuring that all users understand and comply with Verizon's confidentiality requirements. The Customer Portal can be accessed at: www.verizonenterprise.com.
 - Change Management Activities. Certain change management activities shown on the Customer Portal as Standard Change Management are provided at no additional charge.
 - Monitoring and Management. Verizon provides proactive monitoring of all Managed VNFs 24 hours a day, 7 days a week. Verizon will monitor the Managed VNFs via use of the simple network management protocol (SNMP) and internet control message protocol (ICMP commonly called a "ping") for status and error conditions (e.g. SNMP trap messages). Customer will inform Verizon of physical faults once it has completed its logical troubleshooting if Verizon is maintenance provider for Customer's CPE. If a problem is software-related, Verizon will remotely bring the Managed VNF back to operational condition. Management of Managed VNFs includes management of applicable software licenses that may be configured on Managed VNFs.
 - Managed Implementation. With Managed Implementation, Verizon will bring a new Customer Network online and under Verizon management.
 - Managed VNF Enhanced Features. The features are provided as an embedded operating service feature. Verizon will provide relevant software patches and upgrades as provided by the Managed VNF manufacturer from time to time for installation during a scheduled maintenance period.

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- o Managed VNS Support for Dynamic Bandwidth Feature. With dynamic bandwidth, Verizon will provide support for VNS Full, and only if Customer orders Verizon Network services (under a separate service attachment). When Customer places an order in the Verizon PIP dynamic bandwidth portal, changes to the CE router are manually made by Verizon with concurrent changes to the PE router. Verizon's objective for completion of the CE changes is 72 hours from Customer's placement of the order. Limitations for this semi-automated support include:
 - Only one change per United States Business Day per CE router is permitted.
 - Not more than 4 changes per month per CE router are permitted.
 - Not more than 5 changes per United States Business Day per Customer Network are permitted.
 - Changes can only be submitted Sunday 12:01 PM Eastern United States time through Friday 5:00 PM Eastern United States time.
 - The dynamic bandwidth schedule change feature is not available.
 - The Verizon PIP add or remove enhanced traffic management (ETM) feature is not available.
- x) VNS Full without Policy Management Level (VNS without Policy Management). With VNS without Policy Management Level, Verizon will monitor and manage VNS feature packages per full management service level, except Customer will be responsible for policy management via a portal.
- xi) VNS Monitor Management Level (VNS Monitor). With VNS Monitor Management Level, Verizon will monitor VNS feature packages. VNS Monitor Management Level will provide notifications of VNF service outages only.

1.3.3.2 Optional Service Features. For VNS Full without Policy Management and VNS Monitor, Verizon will provide a consultant who will create a Customer Design Document (CDD) based on a written Statement of Requirements agreed to by Verizon and Customer. The CDD is an internal Verizon document which describes the Customer Network. Verizon will activate, monitor, and manage the Customer Network as designed in the CDD.

1.3.3.3 Verizon Responsibilities.

- i) Demarcation. Verizon will provide the demarcation of VNS at the Local Area Network (LAN) interface of the Managed VNF.

1.3.3.4 Customer Responsibilities.

- i) IP Addresses. Verizon will designate IP addresses for use with VNS. Customer will not use non-approved IP addressing on VNS. Verizon also reserves the right to use border gateway protocol ("BGP") routing when VNS terminates Verizon transport.
- ii) Customer Notifications. Customer shall report detected service failures and provide information to the Verizon Customer Service Center.
- iii) Back Up. Customer is responsible for the adequacy of any duplication or documentation for its electronic files at all times. Neither Verizon nor its designees are responsible or liable for Customer's failure to duplicate or document files or for data or files lost during the performance of VNS.
- iv) Reports. All copies of any reports, recommendations, documentation, Customer Portal printouts, or other materials in any media form provided to Customer by Verizon will be treated by Customer as Verizon Confidential Information. Customer Confidential Information, if embedded in the above, shall continue to be treated as Customer Confidential Information.

1.3.4 **Managed Wireless LAN Service.** Verizon's Managed Wireless LAN service (Managed WLAN or Service) extends Customer's Verizon-managed WAN or LAN infrastructure to include wireless LAN access.

1.3.4.1 Standard Service Features. Optimized Managed WLAN is offered at three management levels. The CCAP feature is available only with the Full Management level.

Service features and responsibilities are summarized in the table below:

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Division of Responsibilities – Management Levels (Each Level includes all of the items of the previous Level)			
	Monitor and Notify	Physical Management	Full Management
Customer Manages:	Strategic Direction	Strategic Direction	Strategic Direction
	Fault Isolation	Fault Restoration-Logical	Security Policy
	Fault Restoration-Logical	Change Management-Logical	
	Fault Restoration-Physical	Change Management-Physical	
	Maintenance-Break/Fix	Security Policy and Patching	
	Change Management-Logical		
	Change Management-Physical		
	Configuration Back-Up		
	Security Policy and Patching		
Verizon Manages:	Monitoring	Monitoring	Monitoring
	Fault Notification	Fault Isolation	Fault Isolation
	Performance Reporting	Fault Notification	Fault Notification
		Fault Restoration-Physical	Fault Restoration-Logical
		Maintenance-Break/Fix	Fault Restoration-Physical
		Configuration Back-Up	Maintenance-Break/Fix
		Performance Reporting	Change Management-Logical
			Change Management-Physical
			Configuration Back-Up
			Performance Reporting
			Security Patching

To enable the flow of data traffic to support Customer’s business applications (e.g., email), tunnels will be set up between an access point identified below and another device or infrastructure identified below:

Access Point or Service Node	Device or Infrastructure	Enables Flow of Traffic to:
Aruba Instant Access Point (“IAP”)	Virtual Wireless LAN Controller	Customer’s wireless applications
Lightweight Access Point (“LAP”)	Wireless LAN Controller	Customer’s wireless applications
Cloud-Controlled Access Point (“CCAP”)	Cloud Infrastructure*	Customer’s wireless applications

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* Verizon maintains the Cloud Infrastructure in a redundant fashion, with multiple data centers backing up each other. Failover Cloud Infrastructure instances run in stand-by mode and activate if primary Cloud Infrastructure instances fail.

- i) Monitor and Notify Management.
- Monitoring. Verizon proactively monitors all Managed CPE designated by Customer up to the local area network (“LAN”) interface 24 hours a day, seven (7) days a week.
 - Notification. Verizon will create a trouble ticket and send a notification to Customer’s designated point of contact within 15 minutes of Verizon’s determination of a Managed CPE or transport failure. Upon the creation of a trouble ticket, Verizon will (i) troubleshoot the transport service until the problem has been verified as fixed and the ticket will then be closed, if the trouble is due to a Verizon transport service; or (ii) inform Customer of the fault and monitor the ticket if the trouble is due to causes other than a Verizon transport service.
 - Managed WLAN Reporting. This feature provides Customer with comprehensive daily and ad hoc reporting to quickly assess the health and performance of Managed WLAN, and may include – depending upon the type of reporting received (see below) – any of the following: daily uptime reports, daily managed device summary reports, daily inventory reports, daily new rogues reports, configuration audit reports, and wireless net usage reports.
 - If Customer is using Cisco Meraki CPE, Managed WLAN reporting is available via the web portal at <https://dashboard.meraki.com/> or other URL provided by Verizon from time to time (the “Web Portal”).
 - If Customer is using CPE other than Cisco Meraki, Managed WLAN reporting is available on the Verizon Enterprise Center (“VEC”)-based Managed Services Customer Portal (the “Customer Portal”). Customer may obtain up to 10 user accounts on the Customer Portal and is responsible for ensuring that all users understand and comply with Verizon’s confidentiality requirements.
- ii) Physical Management.
- Design Services. Verizon will create a Customer design document (CDD) based on a written statement of requirements (SOR) agreed to by Customer. Software or CPE upgrades that may require Customer investment will be included in the SOR, particularly if such upgrades are required to address Customer’s requirements for particular functionality. Customer will purchase any required CPE pursuant to a separate CPE Order. Verizon will activate, monitor, and manage the Managed CPE as designed in the CDD.
 - Monitoring and Management. Verizon provides physical fault detection, isolation, and monitoring services for Managed CPE, 24 hours per day, 7 days per week. Verizon will resolve physical faults whether caused by Verizon, Customer, or third-party issues. Managed Device logical faults are Customer’s responsibility. Customer will inform Verizon of physical faults once it has completed its logical troubleshooting if Verizon is maintenance provider for Customer’s CPE.
- iii) Full Management.
- Monitoring and Management. Verizon will resolve both logical and physical issues, with Customer’s cooperation, either remotely or by dispatching a technician, whether caused by Verizon, Customer or a third party.
 - Change Management Activities. Verizon will perform the Standard Change Management activities shown in the Customer Portal at no charge.
 - CCAP Software Release Management
 - Installation. Verizon will provide relevant software patches and updates as provided by the CCAP manufacturer from time to time for installation during a fixed update time period, mutually scheduled by the parties that can only be changed via the change management process. Verizon provides no warranty on software updates directly provided by the CCAP manufacturer.
 - Software Testing. Upon Customer’s request and at Verizon’s discretion, Verizon will make reasonable efforts to make Verizon’s Customer Test Center (CTC) resources available to Customer to test CCAP manufacturer software before it is implemented, subject to manufacturer implementation requirements). Such additional CTC testing will be on a project basis and may be subject to additional fees for testing as well as result in delay of the software deployment pursuant to a separate professional services Service Attachment and SOW.
- iv) Implementation Options. Managed WLAN offers two implementation options to bring devices under Verizon management – Managed Implementation and Managed Take Over. With Managed

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Implementation Verizon provides support for the planning, system engineering, and overall project management of a new network. With Managed Takeover, Verizon reviews, optimizes, and takes over management of a Customer's existing WLAN data network. Both are subject to an SOR to be agreed upon by the Parties.

1.3.4.2 Optional Service Features

- i) Network Engineering (NE) Service (for larger Networks, i.e., those with 20+ Managed CPE under Full Management). With Network Engineering, Verizon provides additional reporting, analysis, engineering planning, design, and change-management support services.
- ii) Guest Access. Verizon offers two options per IAP, LAP, or CCAP, as applicable, to enable Customer's guests to obtain wireless access to Customer's network (Guest Access): (i) Cisco Meraki, with additional information available at <https://dashboard.meraki.com/> or other URL provided by Verizon from time to time (the Web Portal); and (ii) Purple Wi-Fi, with additional information available at <http://verizon.purplewifi.net/> or other URL provided by Verizon from time to time (the Guest Access Portal). These Guest Access options provide the following functionality:
 - Mobile Location Analytics (MLA). This feature enables Customer to choose to, entirely at its discretion and control (i) capture information broadcast by the wireless devices of guests and end users (collectively, such data is hereinafter referred to as MLA Data); and (ii) use MLA Data for the protection of Customer's network and marketing purposes, subject to applicable laws and regulation.
 - Content Filtering (Purple Wi-Fi only). Customer can block inappropriate content by requesting either a specific category of sites to be blocked or the specific sites. Customer also has the option to limit traffic via bandwidth controls.
- iii) Splash Page Design Support. Verizon provides splash page design in basic or customized forms. Both include a requirement for guests to consent to an end user license agreement (EULA) to be provided to Customer upon its request for Splash Page Design Support.
 - Basic. Basic splash page design support provides up to two hours of minor customization of a one-page, pre-defined, guest access splash page template on either the Cisco Meraki- or Purple WiFi-based platforms. Basic splash page design support consists of adding Customer's logo to the splash page and styling the page with Customer's corporate color scheme and font. Only styling changes will be made. No structural or layout changes will be made to any pre-defined template as part of this Basic option.
 - Customized. Customized splash page design support provides up to eight hours of professional services to fully customize a one-page guest access splash page pursuant to a separate professional services Service Attachment and SOW. Customer's typography, graphics, images, and links may be utilized if provided in HTML or CSS.
- iv) Wireless Assessment. Customer may request a wireless site assessment via a separate Professional Services Service Attachment and Statement of Work with Verizon or provide a completed wireless assessment from a third party agreed to by Verizon. The wireless site assessment determines the wireless requirements, suitable locations for the Managed CPE, and identifies possible interference based on the results of a radio frequency (RF) analysis. If Customer opts not to contract for or provide such a wireless assessment, Verizon will deploy and monitor the WLAN based upon Customer's requirements, but no SLA will apply to such WLAN.
- v) Network Discovery. If Customer orders Network Discovery, Verizon will electronically collect information on CPE connected to Customer's Network.

1.3.4.3 Customer Responsibilities

- i) General. Customer is responsible for trouble isolation, diagnostics, repair, and maintenance dispatch of CPE managed by the Customer. Customer is also responsible for application of the Verizon-provided SNMP "read access community string" for all monitored WLAN Controllers, or (with respect to Optimized Service) Virtual Wireless LAN Controllers with IAP Management and the application of Verizon-assigned management IP addresses, as required for Verizon management.
- ii) OOB Access. Unless otherwise agreed, Customer will provide out of band access to each WLAN Controller over a separate PSTN line or wireless connection, where required and consistent with Verizon

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- specifications for troubleshooting purposes. Customer will provide Verizon the Simple Network Management Protocol (“SNMP”) read/write community string to any Managed Device whose configuration it wants Verizon to automatically backup.
- iii) **Authorized Users.** Customer is responsible for all guests’ and other end users’ use of the Customer’s WLAN. Verizon will inform Customer by email when it detects a rogue access point. Customer is responsible for determining whether or not the access point in question is unauthorized.
 - iv) **Supported CPE.** Managed CPE must be under minimum maintenance coverage of at least 8 hours a day x 5 days a week with a next-business-day response time.
 - v) **Interference.** Customer will inform Verizon prior to any deployment of industrial, scientific, and/or medical wireless equipment or other equipment that could affect the performance of Managed WLAN.
 - vi) **Remediation Work.** Verizon will notify Customer if any remediation work is required on the Managed CPE, which must be completed by Customer prior to Managed Implementation or Managed Take-over. Customer will also be responsible to ensure Managed CPE remains supportable.
 - vii) **Detected Failures.** Customer will report detected Managed WLAN failures and provide any related information to the appropriate Verizon Customer service contact.
 - viii) **Disconnection of PSTN and Wireless OOB.** Upon termination of the Managed WLAN Service for whatever reason, Customer will terminate OOB Access service.
 - ix) **Guest Access Notice.** Customers utilizing the MLA feature must display a notice, in a conspicuous location proximate to the area where the MLA data is collected, that at a minimum (i) identifies Customer as the Data Controller (as defined in applicable law); (ii) describes the type of personal information collected; (iii) describes the purpose(s) for which Guests’ and Users’ personal information is processed; (iv) explains how such Guests and Users can opt out from the collection and processing of their personal information; and (v) notifies Guests and Users that their decision not to opt out constitutes consent to the collection, processing and use of their personal information.

1.4 **Customer Responsibilities**

1.4.1 **Colocation.** To the extent a Managed Device is co-located within a Verizon Facility, Customer will, by ordering Managed Global Network, automatically authorize full access by Verizon or its Designees to the cabinet and the Managed Device. This authorization will remain in effect for the duration of Verizon’s provision of Managed Global Network. Failure of Customer to permit such access at any time during the duration of Verizon’s provision of Managed Global Network will discharge Verizon from its obligations under Managed Global Network.

1.4.2 **Customer Network.** Unless otherwise specified in the Agreement, Customer shall be responsible for obtaining, installing, inter-connecting, and maintaining all equipment, software, wiring, power sources, telephone connections and/or communications services necessary for inter-connection with the CPE and/or the Customer Network or otherwise for use in conjunction with Managed Global Network.

1.4.3 **Customer Site Internal Cabling.** Customer is responsible for providing all internal cabling between the router and the LAN Switches and all internal cabling between the Customer Equipment and the Managed Devices to Verizon’s specifications.

- Customer shall install an analogue phone jack within 1.5 meters of each CPE location and will maintain each PSTN line in good working condition at all times during the duration of Verizon’s provision of Managed WAN.
- If applicable, Customer shall provide adequate power receptacle no further than 1 meter from the CPE install location. Verizon shall supply a power strip to plug into the receptacle. All Managed Devices will be plugged in to the power strip. It is Customer responsibility to ensure adequate power supply to the Managed Device. Appropriate circuit breakers are the responsibility of Customer.
- Customer shall provide an uninterrupted power supply (UPS) device for all Managed Devices. Customer will maintain each UPS device in good working condition at all times during the duration of Verizon’s provision of Managed WAN.
- Upon termination of Managed Global Network for whatever reason, it is Customer’s responsibility to disconnect the PSTN lines at Customer Sites where Customer has provisioned the PSTN lines.

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- 1.4.4 **IP Addresses.** Verizon reserves the right to use secondary IP addressing if Customer is using unregistered IP address space. If Customer will not allow secondary IP addressing, Customer must pay reasonable costs for a dedicated management domain or an IP proxy hardware solution. Additionally, Verizon reserves the right to use border gateway protocol (BGP) routing used to access and monitor the Customer Network.
- 1.4.5 **Supported CPE.** Only Verizon certified devices are supported under Managed Global Network and must have an approved Verizon configuration as outlined in Customer's SOR.
- 1.4.6 **Managed Device Access.** Unless directed by Verizon, Customer shall not, access, configure, amend, modify, repair or remove the Managed Devices. Customer shall not retain any access rights to the Managed Devices and grants to Verizon all such access rights to the Managed Devices as required to provide Managed Global Network.
- 1.4.7 **Customer Notifications.** Customer shall report detected service failures and provide information to the Verizon Customer Service Center.
- 1.4.8 **Physical Verification of Managed Devices.** Upon Verizon's request, Customer will reboot the Managed Devices, provide the LED light statuses of the third party telecommunications provider Network Terminating Unit (Telco NTU) where applicable, verify equipment power, verify if all cables are securely connected, and insert a loopback plug.
- 1.4.9 **Customer Initiated Site Changes.** Customer shall notify Verizon via a Customer Site Change Management Request of any change at a Customer Site affecting Managed Global Network (e.g., powering down the site/Managed Device/Telco NTU, resetting equipment, or re-cabling).
- 1.4.10 **Customer Site Access.** As applicable for installation or maintenance orders and as offered by each region, Customer will:
- Notify Verizon of any site-specific requirements that might affect Verizon's ability to access such site, e.g., safety or security training ("Training"). Verizon will comply with such Training requirements however Verizon reserves the right to bill Customer for the time required for Training at Verizon's then current labor rate. Customer will provide necessary badges, escorts, etc. required for site access per Customer's security and safety policies.
 - Remove existing equipment or cables that interfere with the provision of CPE Services.
 - Identify and disclose to Verizon concealed equipment, wiring or conditions that might be affected by or might affect the CPE Services. If during the provision of CPE Services, Verizon encounters any concealed or unknown condition not expressly set forth in a Contract, and such condition affects the charges or schedule for performance of CPE Services, the charges and/or the schedule will be equitably adjusted using the Change Order procedure.
 - Customer will provide System interconnection requirements, including obtaining telephone service for testing where necessary or authorize Verizon, at Customer's expense, to make service requests upon third parties for such System interconnection requirements, pursuant to a letter of authorization or similar document.
 - Designate waste deposit points on each floor on which the System is to be installed where Verizon will place waste for removal by Customer.
 - Cooperate with Verizon's requests for assistance.
 - Be responsible for providing adequate back-up of data and software and for restoring data and software to any system that is or may be affected by a CPE Service, including but not limited to drivers applications, and operating systems as required prior to Verizon provision of the CPE Service.
 - Be responsible for the accuracy and completeness of all information it provides. If information is incomplete or incorrect, or if information is discovered during the course of the performance of CPE Services that could not be reasonably anticipated by Verizon, any additional work required will be treated as a change to the scope of the System or CPE Services and will require a Change Order.

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1.4.11 **Customer Responsibilities for Managed Installation and Implementation.** As applicable, Customer must:

- Provide licensed copies of operating system and applications software, as applicable;
- Install or re-install software not provided by Verizon and Customer has all responsibility for such software (e.g., charges and license fees, version level maintenance and upgrade, resolution of problems, etc.);
- Control all activities associated with the existing customer equipment, including without limitation changes, additions or deletions of devices made by any non-Verizon provided technicians.
- Ensure conformance with any applicable codes, regulations, and laws, including but not limited to electrical, building, safety, and health;
- Properly dispose of or in the European Union return to Verizon for disposal as per Verizon's instructions, of all decommissioned equipment in accordance with applicable law.

2. SUPPLEMENTAL TERMS

2.1 **Changes In/Additions to System - Change Orders.** Verizon will comply with, to the extent it deems feasible and reasonable, any proposed changes to Managed Global Network under these terms and any Contract ("Change Orders"). No Change Order will become effective, and no changes in Managed Global Network will be initiated, until the Change Order is accepted by Verizon. Change Orders are accepted by the same process as Contracts are accepted. If changes result in an increase or decrease in charges such adjustments will be reflected in a written Change Order.

2.2 **Scope of Users.** Managed Global Network is provided to Customer for its internal business purposes only. Resale to or use by other entities or persons is prohibited.

2.3 **Software License Obligations.** Customer shall comply with all obligations set forth in any end user software licenses for software provided by Verizon. Customer acknowledges that it is not relying on any representations or warranties made by a manufacturer except for those warranties expressly made in a software end user license agreement (EULA) (if applicable to Customer).

2.4 **Service Disclaimers.** Verizon makes no warranties, guarantees, or representations, express, or implied that i) Managed Global Network will protect the Customer Network from intrusions, viruses, Trojan horses, worms, time bombs, cancelbots or other similar harmful or destructive programming routines; ii) any security threats and vulnerabilities will be prevented or detected; or, iii) that the performance by the Verizon of Managed Global Network will prevent unauthorized access to Customer's systems. Customer is responsible for maintaining an overall security program, including but not limited to: (i) exercising due diligence in protecting Customer systems and information that might be used to access, exploit, or otherwise affect Managed Global Network (ii) modifying, updating, deleting and otherwise administering such access information and passwords with respect to Customer's Authorized User accounts, and (iii) promptly notifying Verizon in writing of any security compromise with respect to such information or Authorized User accounts.

2.5 **Availability.** Availability of Managed Global Network varies by country and therefore the full suite of Managed Global Network may not be available concurrently in all locations.

2.6 **Access**

2.6.1 **Third Party Vendors/Carriers.** When the Access circuit is procured from a third party carrier, and the third party carrier requires certain forms to be signed to process Customer's order (e.g., Warranties of Agency, Letters of Agency, Right of Entry forms, service terms, etc.), Customer will sign such forms promptly in order to procure the Access in a timely manner.

2.6.2 **Access Availability.** The actual availability of Access cannot be determined definitively until the date of installation. If Customer-ordered Access is determined to be unavailable, Verizon will notify Customer promptly, cancel the unavailable order, and upon Customer request, requote the Access based on the latest availability information. There will be instances where a circuit is quoted, using

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the information available at the time of a quote, but at the time the order is placed or upon installation, the Access is deemed not available and other Access, sometimes with higher charges may be required and in such instances the circuit is requoted to Customer.

2.6.3 **Diversity Availability.** Diversity which involves a third party Access provider will be provided only at Customer Sites where such diversity is available and provided by the relevant access provider as selected by Verizon. In the event that Verizon becomes aware of a third party provided Access service failure or outage which impacts the diversity of circuits, Verizon will use commercially reasonable efforts to work with the third party Access provider to restore the diversity as soon as reasonably possible.

2.6.4 Country-Specific Service Limitations

2.6.4.1 **Permitted Use.** For Access provided outside Hawaii and the U.S. Mainland or within Alaska, Customer will use Access circuits only in conjunction with a Verizon-provided network service. If Customer violates this use requirement, Verizon may terminate the Access circuit or take other appropriate action to meet its legal and regulatory obligations.

2.6.4.2 **United States – Interstate Service Only.** Access in the US Mainland is offered only on a jurisdictionally interstate basis. With respect to its use of Access, Customer agrees that more than 10 percent of Customer's per circuit traffic crosses state line boundaries (which is commonly referred to as 10 PIU – Percent Interstate Usage).

2.6.4.3 **Vietnam Responsibility Contract.** Where Customer subscribes for Access in Vietnam through Verizon, Customer shall be required to enter into a Responsibility Contract (or other similar agreements) with the Access service provider. Customer is hereby notified that Verizon is not permitted to modify the terms of the Responsibility Contract and is not allowed to enter into that contract on Customer's behalf.

2.7 Private IP

2.7.1 **India Ports.** This clause applies if the Private IP Service contains ports in India. Prior to the Service Activation Date Customer will complete and sign, or will procure the completion and signing by its Indian Affiliate (or other end user) receiving the Private IP Service in India, the document in the form set out in Schedule 1 hereto ("Proforma"). To the extent that the information required by the Proforma cannot be completed (or is otherwise not completed) until after the Service Activation Date Customer authorizes Verizon to complete the Proforma or undertakes to provide any additional necessary information as requested by Verizon for that purpose.

2.7.2 **Monitoring.** Customer understands that the Government of India monitors telecommunications traffic terminating into and originating from India for national security reasons.

2.7.3 **Restriction on Selling Encryption Services.** Customer will not employ bulk encryption equipment in connection with Verizon Facilities in India. Customer is permitted to use encryption up to 40 bit key length in RSA algorithm. If Customer requires encryption higher than this limit, then Customer must obtain approval from the relevant telecom authority and will deposit the encryption key, split in two parts with such telecom authority.

2.7.4 **Provisioning Entities in China.** Licensed local telecommunication suppliers will be used as Provisioning Entities for any portion(s) of the Private IPs not provided by Verizon or its Affiliates. In China, where Verizon is not licensed to provide any portion of the Private IP and such portion is provided by a licensed local telecommunications supplier, such portion of the Private IP will be part of a greater international network of Private IP provided by Verizon to Customer. In the event of regulatory changes in China affecting the local supplier's ability to provide the Service, Verizon will be entitled to terminate the Service, without any further liability, and will transition Customer to another alternative local supplier at a price to be agreed between the parties.

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2.7.5 **Use Restrictions in Turkey.** Due to blocking orders issued by the Turkish government prohibiting access to thousands of sites on the Worldwide Web, the use of the Service by Customer or any of its authorized users to access the Worldwide Web from within Turkey, whether directly or indirectly, and whether such access is technically implemented inside or outside Turkey, is strictly prohibited. Customer will take appropriate measures to comply with this prohibition, including expressly notifying any authorized users of the Service in Turkey of the prohibition. Any violation of this prohibition may result in immediate suspension of the Service by Verizon until, in Verizon's sole judgment, the violation has been cured. Customer will indemnify and hold harmless Verizon from any fines, penalties, losses, damages, costs or expenses arising out any violation by Customer or its authorized users of the foregoing prohibition. Each party will promptly notify the other of any such claim.

2.7.6 **Voice over IP (VoIP) Restrictions.** Customer acknowledges that a number of jurisdictions impose restrictions and/or licensing or registration conditions on VoIP transmission over the Network. To the extent such regulations apply, Customer shall comply with those regulations and indemnify, defend, and hold Verizon harmless for any claims arising from Customer's violation of such regulations.

2.8 Internet Dedicated

2.8.1 **Resale.** Internet Dedicated Service is designed for use by Customer and its direct end users. If Customer wishes to resell Internet Dedicated in its entirety to another person or entity, it will first work with Verizon to agree upon the terms and conditions appropriate for resale.

2.8.2 **Installation.** Installation of Internet Dedicated will be performed Monday through Friday during Normal Working Hours, excluding holidays, as determined by Verizon. At Customer's request, Verizon will use commercially reasonable efforts to perform installation outside of Normal Working Hours for an additional charge.

2.8.3 **Service in India**

2.8.3.1 No Internet Telephony in India. Verizon's license from the Indian Ministry of Communications, Department of Telecommunications (DOT) requires Verizon to restrict use of its Internet Dedicated Service for Internet telephony. Customer expressly agrees that it shall not use, or permit others to use, the Service for Internet telephony except in one of the following three ways: (i) personal computer (within or outside India) to personal computer (within or outside India); (ii) personal computer (within India) to the public switched telephone network (PSTN) outside of India (PSTN connection gateway located outside India); or (iii) IP-based H.323 or SIP terminal connected directly to a licensed ISP within India to a H.323, SIP, or similar terminal connected directly to a licensed ISP anywhere in the world (including India).

2.8.3.2 Restriction on Selling Encryption Services. Customer will not employ bulk encryption equipment in connection with Verizon Facilities in India. Customer is permitted to use encryption up to 40 bit key length in RSA algorithm. If Customer requires encryption higher than this limit, then Customer must obtain approval from the relevant telecom authority and shall deposit the encryption key, split in two parts with such telecom authority.

2.8.3.3 End User Identification in India. Customer acknowledges that DOT and other Indian governmental authorities may from time to time require Customer to identify the end users of Internet Dedicated in order to monitor and prevent unlawful activity over Verizon's Network. Where Customer uses Wi-Fi connectivity in relation to Internet Dedicated, Customer shall employ appropriate authentication processes to secure Verizon's Network and retain records of all authorized end users of Internet Dedicated. Such records shall include sufficient details to permit DOT or other Indian governmental authorities of India to identify and locate end users.

2.8.3.4 Additional Documentation in India. Customer will complete and sign the document in the form set out in Schedule 2.

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2.9 Broadband

- 2.9.1 **Technical Feasibility.** In order to determine whether Customer can receive Broadband, the Third Party Vendor may conduct a technical feasibility check within 15 days of receipt of a Service Order signed by Customer.
- 2.9.2 **No Control.** Customer acknowledges where Broadband is provided via a Third Party Vendor, Verizon exercises no control over that Third Party Vendor, or any performance issues relating to Broadband. Broadband is provided as-is. Verizon does not warrant that Broadband will be available, uninterrupted or error-free.
- 2.9.3 **Support.** In the event of Broadband interruptions or other performance issues, Verizon helpdesk will contact the Third Party Vendor and relay any information received from the Third Party Vendor to Customer. If required, Customer will arrange for a Carrier-provided POTS line – standard telephone line – to be in place for Broadband. The POTS line should have the technical specifications required for Broadband.
- 2.9.4 **Termination.** In the event Broadband is cancelled or is no longer offered by the Third Party Vendor or when acting as an intermediary, its underlying suppliers, for any reason at all, Verizon shall have a right to terminate the Broadband upon providing reasonable notice to Customer. In such cases, Verizon shall make reasonable efforts to provide a replacement service. If Customer does not wish to accept the functionally equivalent service or where such functionally equivalent service is not available, Broadband will be cancelled.
- 2.9.5 **Security.** Customer acknowledges that it is responsible for the security of its network and facilities when using Broadband.
- 2.9.6 **Speeds.** Any transmission speeds for Broadband refers to the maximum theoretical speed achievable with Broadband under ideal conditions. Customer acknowledges that the actual achieved speeds may be lower than the theoretical speeds for a variety of reasons including without limitation, network congestion, line interference and Internet congestion.
- 2.9.7 **Force Majeure.** Notwithstanding the terms of the Master Terms, Customer's right to terminate Broadband due to a Force Majeure Event shall only be applicable where such Force Majeure Event continues for a period of 90 days.
- 2.9.8 **Delays in Installation.** In the event that Customer cancels the original installation date, Verizon reserves the right to terminate Customer's Service Order where Customer has failed to agree with Verizon on a revised installation date for the Broadband within 25 days from the original installation date. In such circumstances Customer will be liable for any costs incurred by Verizon resulting from cancellation of Broadband.
- 2.9.9 **VOIP Restrictions.** Customer acknowledges that a number of jurisdictions impose restrictions and/or licensing or registration conditions on VOIP transmission over the Verizon Facilities. To the extent such regulations apply, Customer shall comply with those regulations and indemnify, defend, and hold Verizon harmless for any claims arising from Customer's violation of such regulations thereof.
- 2.9.10 **Use Restrictions in Turkey.** The use of Broadband by Customer or any of its authorized users to access the Worldwide Web from within Turkey, whether directly or indirectly, and whether such access is technically implemented inside or outside Turkey, is strictly prohibited. Customer will take appropriate measures to comply with this prohibition, including expressly notifying any authorized users of the Service in Turkey of the prohibition. Any violation of this prohibition may result in immediate suspension of Broadband by Verizon until, in Verizon's sole judgment, the violation has been cured. Customer will indemnify and hold harmless Verizon from any fines, penalties, losses, damages, costs or expenses arising out any violation by Customer or its authorized users of the foregoing prohibition.

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2.10 Secure Gateway

- 2.10.1 Secure Gateway Availability. Secure Gateway is not available for sale and deployment in India and Russia.
- 2.10.2 Resale. Secure Gateway is designed for use by Customer and its direct end users. If Customer wishes to resell Secure Gateway in its entirety to another person or entity, it will first work with Verizon to agree upon the terms and conditions appropriate for resale.
- 2.10.3 Wireless OOB. Where Verizon provides a wireless out-of-band (OOB) service, Customer will not interfere with it, or use it for any purpose other than enabling OOB management by Verizon. Disconnecting the Wireless OOB service voids any SLAs provided by Verizon.
- 2.10.4 Mobile User/Mobile Client. Mobile User and Mobile Client each require the Mobile Workforce Manager service, which is available from Verizon under a separate Service Agreement. Customer also will obtain all necessary licenses from the third-party provider of the Mobile Client for each end user that utilizes the Mobile Client service.
- 2.10.5 Partner DSL. If Partner DSL is no longer available from the third party provider for any reason, Verizon may terminate Partner DSL with reasonable notice to Customer. Where possible, Verizon will attempt to provide a replacement service.
- 2.10.6 Acceptable Use Policy. For purposes of Verizon's Acceptable Use Policy, Secure Gateway is deemed to be a Verizon Internet Service. If no policy exists for the country in which an Authorized User connects to the Verizon network, the U.S. Policy applies.
- 2.10.7 Provisioning Entities in China. In the event of regulatory changes in China affecting Verizon's ability to provide the Service through its current local supplier, Verizon may terminate the Service without liability, or transition its provision of the Service to Customer via a different local supplier at a price to be agreed between the Parties.

2.11 Managed WAN and Managed LAN

- 2.11.1 Restriction on Encryption Functionality in India (Managed WAN). Customer will not perform any bulk encryption in connection with Verizon Facilities in India. The use of encryption shall be governed by the government policy/rules made under the Information Technology Act, 2000. Customer is responsible for any encryption/decryption activity.
- 2.11.2 Restriction on Encryption Functionality in India (Managed LAN). Customer will not employ bulk encryption equipment in connection with Verizon Facilities in India. Customer may use encryption up to 40 bit key length in RSA algorithm. If Customer requires encryption higher than this limit, then Customer will obtain approval from relevant telecom authority.
- 2.11.3 NE and NA Services Disclaimer. Customer will make its own independent decision whether to consider or implement any Verizon recommendation, referral or introduction in connection with NE and/or NA (collectively Recommendations), for which Verizon has no liability.
- 2.11.4 Portal User Names and Passwords. Customer must immediately notify Verizon upon learning of any unauthorized use of Customer's login credentials. Customer is responsible for all activities and charges incurred through the use of the compromised login credentials.

2.12 CPE and Related Services

- 2.12.1 Delivery. Where Verizon has a legal presence, System delivery to Customer Sites will be Delivered Duty Paid (DDP). Otherwise, delivery will be Delivered At Place (DAP).

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2.12.2 Title and Security Interest

2.12.2.1 Purchases. Where a System is purchased and delivered within the same jurisdiction where Verizon has established a legal presence, Verizon keeps title until fully paid; then title passes to Customer. Customer will not give anyone else other than a Customer affiliate, a security interest in the System, or allow a lien to be placed on it, until Customer has paid Verizon in full. For other purchase transactions, title to the System passes to Customer when it is shipped to Customer, or at the time indicated on the Service Order if different. As between Verizon and Customer, Verizon retains all right, title and interest in and to all software provided by Verizon.

2.12.2.2 MRP. Title and security interest terms for MRP transactions are located in the "Title and Security for Systems Under MRP" section below.

2.12.2.3 Maintenance. For Systems to which Customer holds title, upon replacement, Customer will hold title to the exchange unit and Verizon will hold title to the replaced System or the part of a System that was replaced.

2.12.3 Risk of Loss

2.12.3.1 Risk of Loss to a System. Risk of loss or damage to a System passes to Customer when delivered to the Customer Site, or co-located in Verizon's facilities, or Customer takes shipping responsibility (e.g. when Customer takes over shipping from point of import), whichever is earlier. Customer will give notice to Verizon if the System is lost or damaged as soon as Customer becomes aware of it.

2.12.3.2 Risk of Loss to Customer Furnished Equipment. Risk of loss or damage to CFE passes to Verizon when delivered to the Verizon-designated location, or Verizon takes shipping responsibility, whichever is earlier. After delivery to the Verizon-designated location, risk of loss or damage to CFE passes back to Customer when delivered to the Customer Site or Customer takes shipping responsibility, whichever is earlier.

2.12.3.3 Cancellation and Early Termination. Prior to Customer Acceptance, either party may cancel a Service Order or a SOW for convenience, in whole or in part, upon written notice to the other Party. Except for MRP, after Customer Acceptance, either party may terminate a Service Order for CPE Services for convenience, in whole or in part, upon 30 days prior written notice to the other Party. Except for MRP, if a CPE Service is terminated by Customer pursuant to this section, Verizon has no further responsibility under the Service Order and Customer will promptly pay Verizon an amount up to the full amount of the remaining payments that would have been due under the Service Order if not terminated and any expenses incurred by Verizon, which Customer acknowledges are liquidated damages reflecting a reasonable measure of actual damages and not a penalty. Where multiple SOWs are associated with this Service Attachment, the termination of one or fewer than all of the SOWs will only affect the terminated SOWs, and any additional SOWs will remain in effect.

2.12.4 Acceptance and Service Activation. With respect to Deployment Services, the Service Activation Date for a System occurs upon Customer Acceptance. Customer will test the System and either accept or reject it within 5 Business Days after installation (the Test Period). Customer accepts the System by signing the Verizon-provided acceptance document or other mutually-agreed procedure (Customer Acceptance). Customer rejects the System by giving Verizon written notice of its specific material failure. Verizon will address within 10 days any issues documented by Customer during the Test Period. If during the Test Period, Customer does not reject the System, or begins using it for non-testing purposes, Customer will be deemed to have accepted the System.

2.12.5 Accrual for Maintenance Services. Maintenance Services start 30 days after Verizon accepts Customer's Service Order. After the maintenance period stated in the Service Order ends, Verizon will continue to provide that Maintenance Service(s) at the then current rate, until Customer and

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Verizon agree to a new Service Order (with new period(s) and rate(s)) or one of them terminates the Maintenance Service(s) under the terms of the Agreement.

2.12.6 Maintenance Coverage. Customer will confirm with Verizon that it is able to provide Maintenance Service(s) before ordering if, i) Verizon did not install the equipment or software intended to be covered by maintenance, ii) the equipment or software is out of warranty or out of third party maintenance coverage, or iii) Verizon has not provided Maintenance on the equipment or software for more than 60 days. If Verizon did not install the CPE, Customer warrants that such CPE is in good working order and meets all applicable manufacturer specifications. If the CPE is found not to be in good working order and/or not in compliance with all applicable manufacturer specifications, Verizon will be under no obligation to provide CPE Services; provided however, Customer may, upon written notice, request Verizon to upgrade and/or repair such CPE at Verizon's then current time and material rate.

2.12.7 Additional Terms for Maintenance. If (i) Verizon did not install the System intended to be covered by maintenance, ii) the System is out of warranty or out of third party maintenance coverage, or iii) Verizon has not provided Maintenance Service on the System for more than 60 days, then the System must be accepted by Verizon prior to being eligible for Maintenance Service. Customer warrants that such System is in good working order and meets all applicable manufacturer specifications. Verizon may recommend corrections or improvements to operating environments or configuration to be performed at Customer's cost and expense. Failure to comply with Verizon's recommended corrections or improvements may cause Verizon to reject the specific part or System and remove it from the Maintenance Service. If the System is found not to be in good working order and/or not in compliance with all applicable manufacturer specifications, Verizon will be under no obligation to provide Maintenance Service; provided however, Customer may, upon written notice, request Verizon to upgrade and/or repair such System at Verizon's then current time and material rate.

2.12.8 Warranty.

2.12.8.1 CPE Services. Verizon warrants it will perform the CPE Services (excluding Third Party Services) under this Service Attachment in a good and workmanlike manner. Customer's sole remedy for a breach of this warranty is for Verizon to re-perform the defective work.

2.12.8.2 Systems. Verizon is not the manufacturer or licensor of the System but will transfer or pass through to Customer the benefit of any and all manufacturer warranties on the same terms as offered by the manufacturers which are capable of being transferred or passed through. If the System is not under Maintenance Services and becomes defective within the manufacturer's warranty period, Customer may contact the manufacturer directly for their warranty policy.

2.12.8.3 CPE Deployment Services Warranties. Verizon warrants that any cables and connectors between the System and any other equipment on Customer's premises that are provided by Verizon will be in good working order for a period of 30 days after installation unless the failure of the cables and connectors is caused by Customer's misuse or abuse.

2.12.8.4 THE WARRANTIES IN THIS SERVICE ATTACHMENT ARE IN LIEU OF ALL OTHER WARRANTIES FROM VERIZON TO THE EXTENT PERMITTED BY LAW. These warranties do not cover damage to or malfunction of the System caused in whole or in part by Customer or third parties through other than normal use of the System or caused by an event external to the System.

2.12.9 Customer Obligations. In order for Verizon to provide CPE and related Services quickly and effectively, Customer will do the following:

- Assist Verizon as necessary with local requirements for bringing the System into the countries where Customer Sites are located including acting as the importer of record and paying import duties, fees and taxes, if any, using Customer's Tax Registration Number (without limitation). As importer of record, Customer may be subject to the obligations placed on 'Producers' under the Waste Electrical and Electronic Equipment Directive 2002/96/EC or similar local directives or regulations.

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- Immediately notify Verizon of any anticipated delay.
- Provide System interconnection requirements, non-Verizon facilities and permits.
- Be responsible for (i) repairs or replacement necessitated by accident, casualty, neglect, misuse, intentional acts, harmful code (i.e., any virus or machine-readable instructions and data designed to intentionally disrupt the operation of the System or intentionally destroy or damage System or data) or any cause other than normal use of the System; (ii) damage caused by Customer, Customer facilities; and (iii) use of the System with any other device or system not supplied or approved by Verizon, or use of any part of the System in a manner not recommended by a manufacturer.
- Designate an authorized point of contact.
- With respect to Maintenance Services:
 - Return replaced parts within 15 Business Days, at Verizon's expense.
 - Ensure System is not moved or modified by anyone other than a Verizon representative.
 - Allow Verizon to inspect, test, repair, and replace System(s), including suspending normal operations of the System to do so. Verizon will use reasonable efforts to minimize the impact of its work on Customer's network.
 - Provide remote connectivity which Verizon can use to quickly and remotely diagnose all Systems under a Maintenance Service.
 - Notify Verizon immediately in writing of any material modifications made to Customer's network, and provide Verizon with information reasonably requests in order to perform Maintenance Service(s).
 - Maintain back-up copies of the original software, current platform configurations, and operating system and make copies available to Verizon when requested to aid in troubleshooting and/or problem resolution.

2.12.10 Limitation of Liability. SUBJECT TO THE "EXCLUSIONS" SECTION OF THE AGREEMENT, VERIZON'S, VERIZON'S AFFILIATES, AND ANY VERIZON ASSIGNEE'S TOTAL LIABILITY FOR ANY DAMAGE WHICH MAY ARISE HEREUNDER, FOR ANY CAUSE WHATSOEVER, AND REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT OR IN TORT, INCLUDING VERIZON'S, VERIZON'S AFFILIATES AND ANY VERIZON ASSIGNEE'S NEGLIGENCE, OR OTHERWISE, IS LIMITED TO THE LESSER OF I) THE PURCHASE PRICE OF THE SPECIFIC SERVICE ORDER GIVING RISE TO THE CLAIM; AND II) THE LIMITATION OF LIABILITY IN THE AGREEMENT.

2.12.11 Hazardous Substances. Customer certifies that it is not aware of the presence of any asbestos or other hazardous substance (as defined by any applicable hazardous waste or environmental law or regulation) at any Customer Site. If Verizon representatives encounter any such substance, Verizon may immediately suspend performance of Services and Customer agrees to take all necessary steps to remediate such hazardous substance, at its own expense. If Customer does not, adequately remediate the hazardous substance, Verizon may terminate for Cause.

2.12.12 Export, Import and Sanctions Compliance.

2.12.12.1 Compliance Obligations. Consistent with its obligation to comply with applicable law, including restrictions on the export, import, and use of certain hardware, software, and technical data provided under this Service Attachment, in particular Customer commits not to:

- export, re-export, transfer or retransfer the System and/or CPE Services without first complying fully with all applicable export laws and obtaining any and all required export, import and/or sanctions licenses.
- conduct business with any company, individual, organization or country that is subject to trade sanctions, embargoes, or other restrictions under applicable laws, or for any end-use prohibited under applicable law without complying fully with all applicable law and obtaining any and all required export, import and/or sanctions licenses.

2.12.12.2 Exclusion of CISG. The United Nations Convention for the International Sale of Goods does not apply.

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- 2.12.13 CPE Manufacturer End of Support. In the event the manufacturer of the CPE covered by this Service Attachment discontinues a piece of CPE, and/or the associated support of such CPE, Verizon will only be obligated to provide CPE Services on the affected CPE for the period of time that the manufacturer continues to support such CPE. At the end of such period Verizon will cease to support such CPE, but will use reasonable efforts to provide CPE Services on the affected CPE until Customer upgrades or replaces such CPE.
- 2.12.14 MRP-Specific Terms
- 2.12.14.1 System Use. Customer may use a System only on a Customer Site or co-located in Verizon's facilities. The System must be dedicated to use for Customer's benefit and only for Verizon services in accordance with Verizon's reasonable instructions from time to time. All moves, modifications, or relocations of a System must be performed by Verizon. Systems may not be moved across international borders. To obtain MRP for Equipment Procurement, Customer also must purchase Verizon Deployment with Enhanced Staging and Implementation, and Maintenance Service or Verizon Warranty Service as applicable.
- 2.12.14.2 Term. The duration of the financing commitment for each System is specified in the Service Order as a Service Commitment (Financing Commitment) and begins on Customer Acceptance. Except in the case of Cause attributable to Verizon, Customer's payment obligation under a Service Order is absolute and unconditional after Customer Acceptance, without set-off, abatement, or deduction.
- 2.12.14.3 Title and Security for Systems Under MRP. With MRP, Customer does not have title to the System or any of its sub-element. Customer waives and releases any right, title and interest that it may have in a System, other than its right to use the System.
- 2.12.14.4 Event of Loss. Customer will promptly notify Verizon in writing if any item of the System becomes unfit or unavailable for use (e.g. lost, stolen, damaged, or destroyed) (an Event of Loss). Customer may choose to repair or restore the System to the condition it had prior to the Event of Loss, or replace the damaged System with Like Equipment, each at Customer's cost and expense. Otherwise, Customer will pay Verizon within 60 days after such Event of Loss the System Casualty Value as of the date of the Event of Loss, and title to the damaged System will pass to Customer upon such payment. Like Equipment is equipment which (a) has been manufactured by the same manufacturer as the System; (b) is of the same type and model as the System (or the manufacturer's equivalent type and model), with all engineering changes incorporated as specified by the manufacturer; (c) has an equal or greater market value as the System Element replaced by Like Equipment; and (d) meets all requirements for the System as set forth in the Service Order or these Service Terms. System Casualty Value is an amount equal to (i) the present value of all remaining MRC for the System, or affected element, from the date of the Event of Loss through the end of the Financing Commitment, plus (ii) for MRP, the purchase price as of the date of the Event of Loss for such System, or affected element, as provided by Verizon promptly after its receipt of a notice of Event of Loss.
- 2.12.14.5 Condition of the System. Customer will ensure that the System is covered by Verizon Care for the duration of the Financing Commitment or its renewal.
- 2.12.14.6 No Customer Assignment; Lien. Customer will not: (a) assign, transfer or otherwise dispose of any System or its individual elements, or any right or obligation relating to the System or CPE Services under this Service Attachment, (b) provide a right of use of any of the System and CPE Services to any other person, (c) permit the System and CPE Services to be under the dominion and control of any other person, or any maintenance provider acting on behalf of Customer other than Verizon, or (d) create, incur, or permit to exist any security interest, lien or encumbrance with respect to any System.

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- 2.12.14.7 Insurance. For Systems under MRP, Customer will obtain and maintain for the duration of the Agreement, including the full Financing Commitment and any extension of it, at its own expense, (a) commercial general liability insurance in an amount not less than \$2,000,000 per occurrence, with a separate \$4,000,000 annual general aggregate and products-completed operations aggregate, including coverage for, but not limited to, premises-operations, products/completed operations, and the tort liability of Verizon assumed by Customer in the Agreement; and (b) all risk property insurance against loss or damage to the System as a result of fire, explosion, theft, vandalism, natural catastrophe and such other risks of loss as are normally maintained under an all-risk property insurance policy, for the full replacement cost value of the System, without a coinsurance provision, in such form and with such insurers having an A.M. Best rating of at least A-VII or an equivalent rating from a recognized rating agency or, as is otherwise reasonably satisfactory to Verizon. Each insurance policy will waive the subrogation rights of the insurance company against Verizon and name Customer as insured and Verizon and its successors and assigns as additional insureds and loss payees as their interests may appear on a primary and non-contributory basis and provide that it may not be cancelled or materially altered to the detriment of Verizon without at least 30 days' prior written notice thereof being given to Verizon (14 days for Contracts under Swiss law) in the event of non-payment of premium. Customer will provide Verizon with a certificate of insurance evidencing the coverage required by these MRP terms. Where applicable, if at any time Customer fails to provide the necessary insurance and Customer does not provide insurance from another insurance company, the required insurance may be provided on behalf of Customer at Customer's sole cost and expense, i.e., forced place insurance.
- 2.12.14.8 Early Termination. Notwithstanding any other provision in this Service Attachment, if Customer terminates MRP early for any reason (including without limitation a Force Majeure Event) except for Cause, or if Verizon terminates for Cause, Customer will (i) pay to Verizon an amount equal to the aggregate of all remaining monthly recurring charges as set forth in the Service Order from the date of termination through the end of the Financing Commitment discounted at an annual rate of 3%, plus (ii) return of the System as provided below. Customer acknowledges that this amount is liquidated damages reflecting a reasonable measure of actual damages and not a penalty. Customer agrees that as between Verizon and Customer Verizon has the right to determine which portion of Customer's MRP charges represents Services and which represent the System.
- 2.12.14.9 Return of Equipment. Upon any termination of MRP, Customer will return the complete System at its expense, to Verizon or Verizon's designee, so that it is received: (i) no later than 15 Business Days after the termination is effective; and (ii) at the location as provided in writing by Verizon and in the condition provided below. If Customer fails to return the System within the above time period, then that failure constitutes Cause.
- 2.12.14.10 Condition of Returned Equipment. When a System is returned to Verizon or its designee, Verizon will cause the System to be inspected and certified acceptable for the manufacturer's maintenance service. If any of the System is not in good repair, condition and working order, excluding ordinary wear and tear, Customer will pay Verizon the reasonable out-of-pocket expenses incurred in bringing the System up to that status, but not in excess of the System Casualty Value.
- 2.12.14.11 End of MRP Financing Commitment. At the end of the Financing Commitment, the MRP service will continue until terminated by either Party, with or without Cause, effective 90 days after written notice of termination is given to the other Party.
- 2.12.14.12 Property Taxes. In addition to any Taxes or Governmental Charges, Customer will pay Verizon the amount of any personal property taxes incurred on the System. Such personal property taxes will be included in the charges shown in the Service Order, provided however, that changes to such taxes (e.g. for tax rate increases) may require that a new Service Order be issued.
- 2.12.14.13 No Warranties or Representations. To the extent permitted by law, under MRP, Verizon or its assignee makes no warranty or representation, express or implied, including but not limited to fitness for a particular purpose, merchantability, quality, design, condition, capacity, suitability or

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performance of the System, the material and workmanship thereof or as to intellectual property rights, it being agreed that all such risks as between Verizon and Customer are to be borne by Customer alone and at Customer's expense. For the avoidance of doubt, Verizon will transfer or pass through to Customer the benefit of any and all manufacturer or licensor and/or owner(s) warranties for the System on the same terms as offered by such manufacturers, licensors and/or owner(s) which are capable of being transferred or passed through. To the extent deemed applicable and to the extent permitted by applicable law, Customer waives any and all rights or remedies conferred upon a lessee under section 2a-508 through 2a-522 of the United States uniform commercial code or similar provisions under another commercial code or statute with respect to a default by a lessor as such sections may be applied to MRP.

2.12.14.14 Cancellation. A Customer cancelling any Service Order or a SOW for convenience before it has been accepted is subject to cancellation charges, based on the stage the CPE Service or System has reached toward such acceptance, which may include charges: (i) for all System elements and CPE Services provided up to the date of cancellation; (ii) for all expenses incurred up to the date of cancellation, including but not limited to the costs of cancelling purchase orders, shipping charges for the return of System elements, if permitted by Verizon, removal of System elements and other contractual obligations made by Verizon to meet its obligations under the Contract, and (iii) a minimum restocking fee of 35% of the price of the System, as shown on the applicable quote, Service Order or SOW, for any System elements returned, provided such return is permitted by the provider of the System element, and as authorized by Verizon. Customer acknowledges that this amount is liquidated damages reflecting a reasonable measure of actual damages and not a penalty.

2.12.15 Country Specific Provisions for Systems and CPE Services

2.12.15.1 Greece. For CPE Services and Systems provided in Greece, Verizon bears the after sales responsibilities according to the provisions of article 5 of LAW 2251/2004, as in force.

2.12.15.2 Italy. For CPE Services and Systems provided in Italy, in accordance with articles 1341 and 1342 of the Italian Civil Code, Customer acknowledges it has carefully read the entire text of this Service Attachment and hereby specifically approves the provisions contained in the following Clauses of the Service Attachment: Charges; "Customer Obligations"; "Risk of Loss"; "Delivery"; "Import of Equipment"; "Cancellation and Early Termination"; "Warranty"; "Limitation of Liability"; "Insurance"; "Hazardous Substances"; "Third Party Services"; "Export, Import and Sanctions Compliance".

2.12.15.3 Turkey.

- Notice of Termination and Default. Termination, suspension or cancellation of a Service Order provided in Turkey by Customer is valid only upon at least 30 days prior written notice to Verizon with the requested termination date falling on the last day of the following calendar month. Notice of default by either Verizon or Customer in Turkey under this Service Attachment will be served on the non-defaulting Party either: (i) through a notary; or (ii) by registered mail with an acknowledgement of receipt of such notice.
- Paper Invoices. Invoices for CPE Services and Systems for Turkey will be sent to Customer in hard copy paper form.
- No Retention of Title; Bank Guarantee. No provision in this Service Attachment granting to Verizon a post-transfer retention of title in a System applies where the System is to be delivered in Turkey. Where a System is delivered in Turkey, title passes to the Customer upon physical transfer, provided that Customer has first issued an irrevocable bank guarantee issued by a bank lawfully established in Turkey in an amount no less than the value of the relevant System component(s).

2.12.15.4 China Encryption. This clause only applies to CPE containing encryption features which will be delivered and used by Customer in the People's Republic of China and where use of that CPE is regulated by the Office of State Commercial Cryptography Administration (OSCCA). Customer will obtain and maintain all necessary permits, licenses and other authorizations ("Permits")

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necessary for the use of the CPE at all relevant times. Verizon does not warrant or make any representations that such Permits for the use of the CPE will be granted by the OSCCA.

2.12.15.5 Poland - Notification Requirements for Encryption. When Customer serves as the importer of record for Verizon-provided System in Poland, Customer is responsible for obtaining all import-related authorizations or permits, including but not limited to, submitting any required "Notification of the Intended Import," or "Intra-EU Transfer of Dual-Use Items Used for Telecommunications," or for "Information Security with the Polish Internal Security Agency" (the "Agencja Bezpieczeństwa Wewnętrznego").

2.12.15.6 India - Restriction on Selling Encryption Services. Customer will not employ bulk encryption equipment in connection with Verizon Facilities in India. Customer is permitted to use encryption up to 40 bit key length in RSA algorithm. If Customer requires encryption higher than this limit, then Customer must obtain approval from the relevant telecom authority and deposit the encryption key, split in two parts with that telecom authority.

2.12.15.7 IPT Covenants for Asia Pacific (AP) Countries.

- Toll Bypass. The Parties will not use the System and the underlying network service upon which IP Telephony (IPT) is provided to bypass international/long distance charges in contravention of applicable law or regulation, specifically inclusive of telecommunications law and regulations in any country where any part of the underlying network service or the System is used.
- PSTN Interaction. The underlying network service and the System may permit egress/ingress to/from the local PSTN for international IPT sessions only in the so-called PSTN Countries: Australia, the European Union member countries, Switzerland, Japan, Korea, Singapore and the United States. In all other countries (the Excluded Countries), the international communications capabilities of the System and underlying network service will be used only for on-net-to-on-net sessions among a pre-defined set of end-users located at Customer and Customer Affiliate premise locations or connected via secure connection to a pre-defined PC/laptop (Closed User Groups). Customer and Customer's Affiliates will prevent use by the general public, and the System and underlying network service cannot be used to provide any part of a 'for-hire' telecommunications service.
- Third Party Solutions. If Customer desires to connect a Verizon IPT solution with a third party's IPT solution not under Verizon management or control, Customer will ensure that the third party IPT functionality complies with all the terms of this Service Attachment.
- India OSP Requirement. If any users in India of the System or underlying network service are in call centers or network operation centers, engaged in business process outsourcing, tele-marketing, tele-education, tele-medicine, tele-trading, or provision of e-commerce services, Customer will obtain Other Service Provider (OSP) registration from the Indian Department of Telecommunication covering those activities and associated infrastructure prior to using the CPE or the underlying network service.
- Indemnity for Service. Customer will comply and cause each of its Affiliates and any direct or indirect users of the System or the underlying network service to comply with the terms this IPT Covenants for Asia Pacific (AP) Countries section and Customer will indemnify, defend and hold Verizon and its Affiliates harmless for breach of any of the IPT Covenants for Asia Pacific (AP) Countries section conditions by it or any of its Affiliates or any direct or indirect user of the System or underlying network service.
- Information. Customer will cooperate with Verizon to provide any relevant information regarding Customer's IPT solution to any national regulatory authority upon their request, and Customer will provide compliance certifications in form and substance acceptable to Verizon upon request.

2.12.15.8 Payment Terms for Certain Verizon Legal Entities. Unless otherwise agreed by Verizon, Customer will pay all invoices for CPE and CPE Services placed on the following Verizon entities in the currency of the jurisdiction in which that entity is located.

- Verizon Communications Technology (Beijing) Co. Ltd.
- Verizon Communications Philippines, Inc.
- Verizon Communications Malaysia, Sdn. Bhd.
- Verizon Communications India Private Limited
- Verizon (Thailand) Limited

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- Verizon Pakistan (Private) Limited
Payments for CPE and CPE related Services to the entities above will be made only by telegraphic transfer to the bank accounts specified in the relevant invoice.

2.12.15.9 Service Orders with Verizon Communications Technology (Beijing) Pte Ltd. The following terms apply to Service Orders with Verizon Communications Technology (Beijing) Pte Ltd.

- FAPIAO. Verizon will use commercially reasonable efforts to issue a tax invoice (fapiao) with its commercial invoices, and has no further obligation to Customer, with regards to the fapiao once Verizon has sent the fapiao to Customer. Charges are payable upon issuance of the commercial invoice whether or not Verizon is able to issue the fapiao. Customer is deemed to have received the fapiao and the commercial invoice on its respective delivery date. Customer will cooperate with Verizon to address any errors or omissions which Verizon reasonably believes affect a previously issued invoice and/or fapiao, and Customer will return that original invoice or fapiao within 5 Business Days of Verizon's written request.
- Credits and Consolidated Invoicing. If Customer is entitled to a credit, it will be applied against the next month's invoiced charges and, if fapiaos have previously been issued, in the next month's fapiao. Unless otherwise agreed by Verizon, all CPE and CPE Services charges subject to local Renminbi billing will be consolidated into a single monthly invoice against the Customer billing account nominated by Verizon and advised to Customer.

2.12.15.10 Tax Information Form. To facilitate billing (and any applicable tax exemption) for Service Orders with Customers in China, South Korea, Pakistan, Philippines, Taiwan and Thailand, Customer will submit a Tax Invoice Form (as provided by Verizon) to Verizon as part of its signed Contract package.

2.12.15.11 Service Orders with Verizon Pakistan (Private) Limited. For Service Orders with Verizon Pakistan (Private) Limited, consistent with Pakistan tax regulations, if Customer is issued a credit note from Verizon, Customer will promptly issue a debit note to Verizon within 14 days from the date of credit note, in a format acceptable to the Pakistan tax authorities. Failure to comply with this clause will void the credit note and Customer will be liable for the original invoiced amount.

2.12.15.12 Germany, Switzerland and Poland. Notwithstanding any terms to the contrary, for CPE Services and Systems provided in Germany, Switzerland and Poland, certain terms in the following sections Section are revised as follows:

- Section 3.15.4(i) the present value of all remaining MRC for the System, or affected element, from the date of the Event of Loss through the end of the Financing Commitment discounted at an annual rate of 3%.
- Section 3.15.8(i) pay to Verizon an amount equal to the aggregate of all remaining monthly recurring charges as set forth in the Service Order from the date of termination through the end of the Financing Commitment discounted at an annual rate of 3%.

2.13 Managed WAN Optimization Service

2.13.1 Reports. All reports and data are Verizon Confidential Information. Customer Confidential information embedded in such reports and data remains Customer Confidential Information. The Parties acknowledge that except as explicitly stated, reports are not designed for use in calculating SLA service performance, and so may not be useful for supporting SLA claims.

2.13.2 WAN Accelerator and Software. The WAN Accelerator, Management Console and related software, as well as software upgrades, may be ordered by a separate service attachment with Verizon and are governed by that agreement. Customer's use of WAN Accelerator and Management Console is subject to the manufacturer's end user agreement and software license, if any.

2.13.3 Management Level. The Managed WOS management level must be equal to or less than the management level of the Managed WAN Services at the same Customer Site. For locations with WAN

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Accelerator modules within a Managed WAN Managed Device, the level of Managed WOS must be the same as the level of Managed WAN Services on that Managed WAN Managed Device.

2.13.4 Maintenance Provider. WAN Accelerators and Management Consoles must be under a 24 x 7 maintenance coverage plan with a 4 hour response time with an Approved Maintenance Provider. Verizon Data Maintenance – Network may be ordered by a separate agreement with Verizon.

2.13.5 Collocation. If the WAN Accelerator managed as part of Managed WOS is collocated within a collocation facility, Customer's order of Managed WOS authorizes full access by Verizon representatives to the cabinet and the WAN Accelerator.

2.14 Virtual Network Services

2.14.1 Dodd-Frank Act. To the extent that Customer utilizes VNS to support the provision of payment processing, mobile payments, money transfers or other financially related products or services to consumers that are subject to the Dodd-Frank Act, Customer is solely responsible for the provision of such services and complying with all the requirements and regulations set forth in the Dodd-Frank Act and by the Consumer Financial Protection Bureau pertaining thereto.

2.14.2 Services Disclaimer. Verizon makes no warranties, guarantees, or representations, express, or implied that i) VNS will protect the Customer Network from intrusions, viruses, Trojan horses, worms, time bombs, cancelbots or other similar harmful or destructive programming routines; ii) any security threats and vulnerabilities will be prevented or detected; or, iii) the performance by Verizon of VNS will render Customer's systems invulnerable to security breaches.

2.14.3 Encryption.

2.14.3.1 India. There shall not be any bulk encryption employed in connections with Verizon Facilities in India. The use of encryption shall be governed by the government policy/rules made under the Information Technology Act, 2000.

2.14.3.2 China. Customer shall be responsible to obtain encryption approvals from the relevant regulatory authorities.

2.14.4 Inconsistencies. With respect to VNS provisions explicitly applicable only to specific countries or regions, in case of any inconsistency between those provisions and the provisions of these terms that apply to all locations, the applicable country or region-specific provision(s) will take precedence, prevail and apply.

2.15 Managed Wireless LAN Service

2.15.1 Scope. Managed WLAN includes coverage for only those items – radios, LAN ports, or interfaces – that are directly connected to Managed CPE. Customer must purchase the Full Management Service Management Level to obtain Managed WLAN's CCAP feature. With Managed WLAN +, Customer can request a change to the management level (i.e., Monitor and Notify, Physical, Full) for Managed CPE by executing a Change Order amendment to its Agreement.

2.15.2 Network Discovery. Customer will provide Verizon with accurate information about proper scope of the Network Discovery, represents that it has all necessary authority to have Verizon undertake the Network Discovery requested under these terms, and will indemnify Verizon and its employees, affiliates and agents against any liability if it does not. Verizon reserves the right to stop or withhold from performing Network Discovery, at its sole discretion. Customer's sole remedy for any failure, inadequacy or other problem of Network Discovery is to request that Verizon re-perform it. Network Discovery is not included within the Managed WLAN SLA.

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- 2.15.3 Data Loss. Neither Verizon nor its vendors are responsible for data or files lost during the performance of Managed WLAN.
- 2.15.4 Restriction on Encryption Functionality in India. Customer will not perform any bulk encryption in connection with Verizon Facilities in India. The use of encryption is governed by the government policy/rules made under the Information Technology Act, 2000. Customer is responsible for any encryption/decryption activity; however Verizon will help facilitate decryption as and when lawfully requested.
- 2.15.5 Customer Changes After Wireless Assessment. Changes to Customer Network may affect, Verizon's ability to provide Managed WLAN in whole or in part. Such changes will suspend application of the SLA until a new Wireless Assessment has been done and any necessary adjustments are completed at Customer's expense.
- 2.15.6 Online Content. With respect to Verizon's provision of optional Guest Access and/or Splash Page Design Support, Customer acknowledges that Verizon does not (i) provide any online content to, or interact with end users or Customer's guests; (ii) own the content on Customer's Splash Page; or (iii) control content on Customer's Splash Page except as otherwise expressly provided herein.
- 2.15.7 Splash Page End User License Requirement. With splash page design support (both Basic and Customized), guests must consent to a Verizon-provided end user license agreement (EULA). This EULA states that guests' Wi-Fi-based activity will be monitored and information from such monitoring will be used for protection of Customer's Network, content filtering, and marketing purposes.
- 2.15.8 Indemnity – Guest Access. Customer will indemnify and hold Verizon harmless from any claims based on the monitoring, capture, storage, use, or sharing of any data collected via Guest Access, including but not limited to claims by a guest or other end user that it did not provide its consent, that a guest or other end user was under the age of thirteen or was not offered a reasonable opportunity to opt-out of the collection of information as required in Guest Access Notice, above.
- 2.15.9 Children's Online Privacy Protection (U.S.-only). Managed WLAN is not designed or intended to provide the tools to obtain the parental consent required under the Children's Online Privacy Protection Act with regard to a website's collection of personal information from children under age 13. To the extent that Customer operates a website or online service that is directed to children under the age of 13 or a website or online service that may collect personal information from children under age 13, Customer acknowledges that it must comply with the federal Children's Online Privacy Protection Act and provide advance parental notice and obtain advance parental consent prior to collecting such personal information.
- 2.15.10 Network Engineering Services Disclaimer. Customer is solely responsible for determining the suitability of third-party products and services, and Verizon has no liability related to or arising from Customer's contracting for or use of them, even where recommended by Verizon. This provision does not apply to the work of subcontractors or other agents done on Verizon's behalf.
- 2.15.11 BGP Routing. Verizon may use border gateway protocol (BGP) routing used to access and monitor the Managed CPE.
- 2.15.12 Reports. All copies of any reports, recommendations, documentation, Customer Portal printouts, or other materials in any media form provided to Customer by Verizon are Verizon Confidential Information.
3. **SERVICE LEVEL AGREEMENT**. The service level agreement (SLA) for the Managed Global Network may be found at the following URL:

[Managed Global Network Service Level Agreement](#)

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4. **FINANCIAL TERMS.** Customer will pay the monthly recurring charges (MRCs) and non-recurring charges (NRCs) for Managed Global Network as specified below and in an applicable Contract. Customer will pay additional MRCs and NRCs for equipment management required or other required or optional services or features that may be ordered by Customer under the Contract. All MRCs are fixed for the Service Commitment. The charges shown herein are in United States dollars with the understanding that Customer will be billed in the invoice currency for the associated service.

4.1 **Administrative Charges.** The following administrative charges are applicable to Managed Global Network and the elements comprising Managed Global Network. Administrative Charges will be charged, and Customer will pay, for each service element comprising the Managed Global Network as applicable. Additional administrative charges (shown as “Ancillary Charges”) are found in the Master Terms and at the following URL: www.verizonenterprise.com/external/service_guide/reg/applicable_charges_toc.htm

4.1.1 Access

Local Access Administrative Charges	Charge Instance	NRC
Administrative Change	Per Change	\$60
Cancellation of Service Order	Per Circuit	\$800
Expedite in the U.S.	Per Circuit	\$1,400
Expedite in Canada and France	Per Circuit	\$6,000
Expedite in other countries	Per Circuit	\$3,000
After Hours Installation	Per Circuit	\$600
Pending Order Change	Per Circuit	\$200
Physical Change	Per Circuit	\$200
Service Date Change	Per Circuit	\$100
Bandwidth Reconfiguration	Per Circuit	\$200

4.1.2 Private IP (PIP)

PIP Administrative Charge	Charge Instance	Port Type	Speed	NRC
Administrative Change (all regions)	Per Change	n/a	n/a	\$60
Cancellation Order (all regions)	Per Port	n/a	n/a	\$800
Expedite (US)	Per Port	n/a	n/a	\$1,000
Expedite (outside the US)	Per Port	n/a	n/a	\$2,000
Physical Change (all regions)	Per Order	n/a	n/a	\$200
Reconfiguration	Per Port	Standard Port	64Kbps	\$50
Reconfiguration	Per Port	Standard Port	256Kbps, 512Kbps	\$100
Reconfiguration	Per Port	Standard Port	1M, T1, 2M, E1	\$200
Reconfiguration	Per Port	Standard Port	Above E1	\$600

4.1.3 Managed WAN, Managed LAN, Secure Gateway, Managed WAN Optimization Service and Managed Wireless LAN

Managed WAN, Managed LAN, Secure Gateway, and Managed WAN Optimization Administrative Charges	Charge Instance	NRC

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Dispatch Charge	Dispatch/Re-Dispatch	\$300
Expedite Fee	Upon Customer Request	\$1,100
After Hours Installation	Per site	\$600

4.1.4 Broadband

Administrative Services	NRC
Installation Expedite Fee	\$2,000 per circuit
Cancellation (cancellation of Internet Broadband Service post-Order, prior to completion of Installation)	\$800 per circuit

4.1.5 Internet Dedicated

Administrative Charges	Charge Instance	NRC
Administrative Change	Per Change	\$60
Cancellation of Service Order	Per Port	\$800
Expedite	Per Port	\$1,000
Out of Hours Installation	Per Port	\$1,000
Pending Order Change	Per Order	\$60
Physical Change	Per Order	\$60
Reconfiguration	Per Port	\$300

4.1.5.1 The MRC for Internet Dedicated Services Tiered Service is fixed for the Service Commitment.

4.1.5.2 For Internet Dedicated Services Burstable Select Service, MRCs will be invoiced in advance and the usage charges will be invoiced in arrears. The usage for the calendar month, in which the Burstable Select Service is activated, is only taken into account if the Service was activated before the 15th day of the relevant calendar month. The overage charge for this calendar month will be invoiced at the full price per Mbps and will not be prorated.

4.2 **Quoted Charges.** Customer will pay the charges stated on the Service Order provided that the charges are current. For purposes of this provision, “current” means (a) that the charges were first quoted within 45 days of the order’s acceptance, except; (b) when a purchased System is not quoted in the same currency that the ordered System has been purchased in, then current means the charges were first quoted within 14 days of the Service Order’s acceptance; for charges first quoted between 15 and 45 days of Service Order submission, charges may be adjusted to reflect currency changes up to the time of Service Order acceptance.

4.3 **Requested Implementation Date.** If Customer requests a Requested Implementation Date (RID) for delivery of Managed Global Network, Verizon will determine the date of delivery following acceptance of the Service Order. For upgrades of an existing circuit to Dynamic Network Manager, the date of delivery will be the first Business Day of a calendar month.

4.4 **Installation and Expedite Fees.** Verizon will install the System as provided in a Contract. Such installations shall take place during Normal Working Hours. In the event that Customer requests an expedited installation at a Customer Site or requires installation at a Customer Site outside Normal Working Hours, such installation will be at Verizon’s sole discretion. For a Customer-requested change to the RID, Verizon may charge, and Customer will pay, related expedite charges, (if any), any third party costs, including but not limited to third party access circuits and/or equipment, incurred as a result of the change for that Customer Site (invoiced as the “Service Date Change”). In such cases, Customer shall pay the additional expedited install NRCs (“Expedite Fee”) or an out of hours install NRCs (“After Hours Fee”), as applicable. For an expedited install, Verizon will advise Customer of the expedited install date (“Expedite Date”) after acceptance of the Contract. If Verizon fails to meet the Expedite Date, Customer will not be liable for the Expedite Fee unless such failure is caused, in whole or in part, by Customer failing to meet its obligations with respect to the installation. If an expedited install requires third party involvement there may be a further third party charge.

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4.4.1 Verizon may request that a site survey is carried out at the Customer's cost to assess the Customer's Site readiness for Managed Global Network. If a site survey deems that Customer Equipment requires upgrading, the upgrade must be carried out prior to installation of Managed Global Network.

4.5 **Access Surcharges.** Local Access Services provided in the U.S. are subject to the following surcharges:

- [Federal Universal Service Fund \(FUSF\)](#)
- [Carrier Cost Recovery Charge](#)
- [Administrative Expense Fee](#)

4.6 **Secure Gateway Charges**

4.6.1 **Universal Port.** Customer will pay the applicable NRCs and MRCs for Universal Port based on the selected bandwidth of the Universal Port. A secondary Universal Port is configured as a back-up and included at no additional charge, but it may not be used for load sharing.

4.6.2 **Universal Port UBB ("Usage-Based Billing")**

4.6.2.1 **Usage-Based Billing.** Customer will pay the applicable NRCs and MRCs for Universal Port UBB. Charges will apply to the Usage Data Plan subscribed to by Customer. Customer usage is measured per month, and usage is reset to zero for the next month's measurement. Any usage in a given month above the selected Usage Data Plan will be billed on a per-Gigabyte (GB) basis. No credit is issued for Customer's usage below the selected Usage Data Plan. Customer may change its Usage Data Plan at any time.

4.6.2.2 **Traffic Measured for Usage-Based Billing.** All Customer traffic routed through the Universal Port UBB will be monitored and measured by Verizon for inclusion in the monthly invoice. Traffic will be measured for the Virtual Router Service as well as for the Firewall service.

4.6.2.3 **Virtual Router Service.** Customer will pay the applicable NRCs and MRCs for Virtual Router Service. Virtual Router Service charges are determined and will be applied to Customer's account after Customer has selected Universal Port UBB and any combination of Retail & Remote Office and Mobile User features. Charges for Virtual Router Service will be based on the number of tunnels and maximum bandwidth required to support Customer's remote sites and end users.

4.6.2.4 **Retail & Remote Office (RRO) Charges.** Customer will pay the applicable NRCs and MRCs for "Router Management" set forth in the Contract based on the size of the Managed Device. Customer must order or provide at least one "standard" Managed Device for each RRO site that will be connected to Customer's Secure Gateway Universal Port.

4.6.2.5 **Optional – Managed Device Enhanced Feature – Switching.** Customer will pay the NRCs and MRCs set forth in the Contract or Service Order, as applicable, for the Managed Device Enhanced Feature–Switching.

4.6.2.6 **Optional WAN Backup for RRO.** Customer will receive WAN Backup (where available) for each RRO site for an additional NRC and MRC, which MRC is fixed for the Service Commitment. The optional WAN Backup capability provides a communication path if the primary access method become unavailable.

4.6.2.7 **Firewall.** There are no charges for Firewall additional to the Universal Port or Universal Port UBB charges set forth above. Customer receives up to 7 IP addresses with Firewall.

4.6.2.8 **Optional Service for Firewall – IP Addresses.** Customer may order additional IP addresses for Firewall. Customer will be charged an additional MRC, fixed for the Service Commitment, for such additional IP addresses.

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4.6.2.9 **Optional Service for Firewall – Managed Security Services.** Customer may order Managed Security Services, pursuant to separate Service Terms, to work in conjunction with Universal Port, Universal Port UBB, and Firewall.

4.7 Other Required Services

4.7.1 **RRO.** Internet Broadband Service is required for RRO. Customer may purchase such service from Verizon pursuant to a separate Contract or from a third-party alternative service provider (“Alternative Service Provider”)Alternative Service Provider-provided broadband Internet service is required for sites in Alaska and Hawaii and for other sites where Verizon cannot provide such services.

4.7.2 **Mobile User.** Internet Broadband Service, purchased from either Verizon or an Alternative Service Provider, is required for Mobile User. Also required for Mobile User is Customer’s purchase of Verizon’s Mobile Workforce Manager pursuant to separate Service Terms.

4.7.3 **Internet Service Options.** Internet Service options available for purchase from Verizon pursuant to separate Service Attachments include Internet DSL, cable, wireless, and Internet Dedicated, as further described below in Service Description and Requirements.

4.8 **Managed WAN Device Sizes.** Customer will pay the applicable MRCs and NRCs for “Router Management” (as set forth in a Contract) based on size of Managed Device.

Router Size	Type	Number
Extra Small	Cisco Routers:	8XX Series
	Adtran Routers:	Special Netvanta 3201 Model
	Viptela	vEdge 1XXX
Small	Cisco Routers:	Series 1XXX and 2XXX Series
	Adtran Routers:	Netvanta Series 1XXX, 2XXX, and 3XXX Total Access Series 9xx
	Viptela	vEdge 1XXX
Medium	Cisco Routers:	Series 3XXX and 4XXX
	Adtran Routers:	Netvanta Series 4XXX and 5XXX
	Viptela	vEdge 2XXX
Large	Cisco Routers:	Series 7XXX and ASR 1XXX

4.9 **Managed LAN Switch Sizes.** Customer will pay the applicable MRCs and NRCs for “Switch Management” (as set forth in a Contract) based on size of LAN Switch.

Switch Size	Type	Number
Small	Cisco Switches:	Series 2XXX Series
Medium	Cisco Switches:	Series 3XXX and 4XXX
Large	Cisco Switches:	Series 6XXX

4.10 **Secure Gateway Devices Sizes.** Customer will pay the applicable NRCs and MRCs for “Router Management” (as set forth in a Contract) based on the size of the Managed Device.

Router Size	Type	Number
Extra Small	Cisco Routers:	8XX Series
Small	Cisco Routers:	Series 1XXX and 2XXX

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		Series
Medium	Cisco Routers:	Series 3XXX
Large	Cisco Routers:	Series 72xx and ASR1xxx

Customer must order or provide one RRO CPE for each RRO site that will be connected to Customer's Secure Gateway Universal Port.

- 4.11 **CPE Charges Landed Costs.** Customer will pay charges including but not limited to any and all import duties, freight, shipping, and delivery charges or charges arising in connection with the delivery of the System, as well as VAT/GST charges, if applicable (collectively "Landed Costs"). The invoice for Landed Costs may be delivered as a separate invoice.
- 4.12 **Managed CPE.** The sizes of Managed CPE apply to the corresponding rates shown in the Contract.
- 4.13 **One-Time Management Charges – Managed WAN, Managed LAN, Secure Gateway, Network APM, Managed WLAN.** Optional Change Management ("OCM") provides additional remote change management support for the referenced Managed Global Network services for the NRCs shown below. Customer can order specific OCM activities through the Verizon Customer Portal. The Standard Change Management activities shown in the Customer Portal are included in the MRC for Managed Global Network.

Managed Global Network Optional Change Management Charges		
Change	Change Instance (Charged per device unless noted)	NRC
After Hours: Changes	Per request per site	\$600.00
Implementation (Modify Existing)	Change per device	\$50.00
Design (Single Feature/Protocol)	Change per device	\$250.00
Design Plus (Multiple Feature/Protocol)	Change per device	\$400.00

- 4.14 **Implementation, Feature, and Optional Charges.** Upon Customer's order, Customer will pay the NRCs and MRCs, as applicable, shown in the Contract for Optional Reporting, Managed Device Enhanced Features, Network Analysis, Network Engineering, Wireless OOB, and Port Monitoring.
- 4.15 **Managed Implementation or Take-Over Charges.** Depending upon network readiness, additional equipment or equipment upgrade may be required. Equipment costs are not included in the NRC shown in a Contract. CPE may be provided under a separate service attachment. The NRC and MRC shown in the Contract apply per Managed Device.
- 4.16 **Virtual Network Services Charges**
- 4.16.1 **Rates and Charges.** Customer will pay the monthly recurring charges (MRCs) and non-recurring charges (NRCs) for VNS as specified in the applicable Contract and at the following URL: www.verizonenterprise.com/external/service_guide/reg/applicable_charges_toc.htm and Customer's Service Commitment and/or Volume Commitment will be as specified in the applicable Contract. Customer will pay additional MRCs and NRCs for any equipment management required or for optional services or features that may be ordered by Customer under the Contract. VNS MRCs are fixed for the Service Commitment. The charges shown herein are quoted in United States dollars and will be billed in the invoice currency.
- 4.16.2 **One-Time Management Charges.** Optional Change Management (OCM) provides additional remote change management support for VNS. Customer can order specific OCM activities through the Verizon Customer Portal. The Standard Change Management activities shown in the Customer Portal are included in the MRC of the VNS Service.
- 4.16.3 **Managed Implementation Charges.** Depending upon network readiness, additional equipment or equipment upgrade may be required. Equipment and equipment management costs are not included

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in the NRC shown in a Contract. CPE may be provided under a separate service attachment. The NRC and MRC shown in the Contract apply per Managed VNF.

5. **DEFINITIONS.** The following definitions apply to Managed Global Network, in addition to those identified in the Master Terms and the administrative charge definitions at the following URL: www.verizonenterprise.com/external/service_guide/reg/definitions_toc_2017DEC01.htm

Definitions	Definition
After Hours	Outside of Business Hours.
Alternative Service Provider	A third party service provider.
Approved Maintenance Provider	A provider of maintenance services as approved by Verizon from time to time that is contracted for by the Customer. The current Approved Maintenance Providers are Verizon Data Maintenance, Cisco, Datacraft, Dimension Data, Juniper Networks and Wafer Systems.
Aruba Instant Access Point (IAP):	The equipment that transmits and receives the radio signal at a Customer Site.
ASN	Autonomous System number
Bandwidth Commitment	The portion of a port speed which Customer may use in a monthly period without incurring a Burstable Overage charge.
CE	Customer Edge
Cloud-Controlled Access Point (CCAP)	The Cloud Infrastructure-controlled equipment that transmits and receives the radio signal at a Customer Site.
Cloud Infrastructure	The Cloud Infrastructure consists of all cloud-hosted elements that are used to provision and manage the architectural aspects of the system comprised of the CCAP and related equipment; such aspects to include security policies, intrusion prevention signatures, radio frequency management, and quality of service. Internet access services, non-CCAP equipment at the Customer Site, including the Managed CPEs, are not part of the Cloud Infrastructure.
Customer Network	A collection of Managed Devices and Managed VNFs and the network it is connected to.
Customer Portal	An Internet web portal that will provide a secure, scalable, consolidated view of Managed WOS information 24 hours a day, 7 days a week with real time access to project status, contact information, and information about Managed WAN Accelerators and Management Consoles. The Customer Portal can be accessed at: www.verizonenterprise.com .
Delivered Duty Paid (DDP)	As defined in "Incoterms 2010" published by the International Chamber of Commerce.
Delivered at Place (DAP)	As defined in "Incoterms 2010" published by theml International Chamber of Commerce.
Demarcation	The point where the access circuit is delivered. For jointly used office buildings, it is often a common entrance point for telecommunication providers, which may not be the Customer's physical location.
Dispatch	A Customer service request that results in Verizon going on to, or attempting to go on to, a Customer Site.
DSL	Digital subscriber line: is a family of technologies that are used to transmit digital data over telephone lines.

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Definitions	Definition
Expedite	A Contract that is processed, at the request of the Customer, with the objective of installing or changing the service in a time period shorter than the Verizon's standard installation time period for that service, whether or not the installation or change is completed in that time period.
Geographic Diversity	Automatically directs the second Customer circuit to a different Verizon gateway at a different Verizon POP.
In-Band Access	In-Band access provided through a Verizon Managed WAN site connected to Customer's LAN network.
ISDN	Integrated Services Digital Network
LAN Switch	Means the LAN switches and associated OOB modems or terminal servers, as specified by reference to these Service Terms, which will be managed at Customer Site by Verizon.
Lightweight Access Point (LAP)	The equipment that transmits and receives the radio signal at a Customer Site.
Managed CPE	WLAN equipment managed by Verizon under the terms of this Service Attachment, whether provided by Customer or purchased by Customer from Verizon, including equipment to be managed by Verizon as part of a Managed Take-over, as applicable. Managed CPE includes Wireless LAN Controllers, Lightweight Access Points, Aruba Instant Access Points, Cloud-Controlled Access Points, and associated accessories, including but not limited to antennas, power injectors, and mount kits, as applicable, installed at a Customer Site by Verizon for Managed WLAN.
Managed Device	Items of CPE that have been designated as supported by Managed Global Network
Managed VNF	A Virtual Network Function ("VNF") that has been designated as supported by VNS.
Management Console	A device required by certain CPE vendor configurations in addition to the WAN Accelerator to provide performance analysis and reports for Full Management.
Management Information Base (MIB)	A database of information stored by SNMP-compliant Managed CPE.
Measured Use Level	To calculate Customer's "Measured Use Level," Verizon samples Customer's Service usage periodically throughout a given month. Customer's usage at the 95th percentile of samples (i.e., samples representing the highest five percentiles of usage are discarded) is Customer's Measured Use Level. For example, if Verizon took 100 samples of Customer's T3 Service in a given month and Customer's highest six samples were 15.67 Mbps, 14.73 Mbps, 14.72 Mbps, 13.22 Mbps, 12.35 Mbps, and 11.39 Mbps, Customer's Measured Use Level would be 11.39 Mbps for that month.
MLA Data	MLA Data consists of the information transmitted by the wireless devices of guests and other end users, including the geo-location of those devices and the devices' MAC address before the end user logs onto Customer's Network via a splash page.
MPLS	Multi-Protocol Label Switching - an Internet Engineering Task Force standard.
MPLS Partner	A third party MPLS provider with whom Verizon has an agency or reseller arrangement to provide interconnection to that party's in-country network.
MVIC	MPLS VPN Interprovider Connection

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Definitions	Definition
OOB	Out of Band
PE	Provider Edge
Permanent Virtual Circuit (PVC)	A logical Customer-dedicated communications path defined between two port connections.
Port	An entrance to and/or exit from a network.
PSTN	Public Switched Telephone Network
Reconfiguration	A reconfiguration charge applies for the modification of an existing PIP Service, at Customer request, that requires Verizon to re-terminate a circuit to a different router or reconfiguration of the port.
Router Diversity	Automatically directs the second Customer circuit to a different switch or router.
SNMP community string	A SNMP community string is a password that allows access to CPEs MIB statistics.
Third Party Vendor	A third party supplier of Broadband to Verizon whether that supplier provides the Broadband directly or as an intermediary
Time Division Multiplexing (TDM)	A technique for transmitting two or more signals over the same telephone line, radio channel, or other medium. Each signal is sent as a series of pulses or packets, which are interleaved with those of the other signal or signals and transmitted as a continuous stream.
Trouble Ticket	A ticket opened within Verizon's NOC from an internal Verizon report or a report by a Customer to Verizon of either perceived Outage or Managed Global Network degradation.
Virtual Private Network (VPN)	Uses a logical connection to route traffic between network sites.
WAN Accelerator	Application accelerator equipment (including modules in Managed WAN Devices) and software.
Wireless LAN Controller (WLAN Controller or WLC):	The equipment that handles the system-wide functions of Managed WLAN, including but not limited to security policies, intrusion prevention, radio frequency management, and quality of service.

Schedules – Customer Indian Affiliate/user Undertakings

Schedule 1 – For Customers ordering Private IP Service that contain ports in India, please click the following URL, for the Customer Indian Affiliate/user Undertakings:

www.verizonenterprise.com/external/service_guide/reg/g_india_schedule1.pdf

Schedule 2 – Please click the following URL for Schedule 2 Proforma for checking bona fide of Verizon Internet Dedicated Customers:

www.verizonenterprise.com/external/service_guide/reg/cp_ids_plus_schedule_2_proforma.pdf