

NATIONAL SECURITY ASSESSMENT: U.S. Information Network Infrastructure



SCOPE OF ASSESSMENT

The U.S. Department of Commerce, Bureau of Industry and Security (BIS), Office of Technology Evaluation (OTE), in coordination with the U.S. Department of Defense, Office of the Assistant Secretary for Defense Networks and Information Integration, is conducting a national security assessment regarding the U.S. telecommunications infrastructure and its supply chains. The principal goal of this data collection is to quantify replacement cycles for information network equipment; document network maintenance and procurement practices, and understand issues affecting network reliability and integrity. This effort will also identify best practices to help ensure the operational reliability of critical national information network infrastructure.

RESPONSE TO THIS SURVEY IS REQUIRED BY LAW

A response to this survey is required by law (50 U.S.C. app. Sec. 2155). Failure to respond can result in a maximum fine of \$10,000, imprisonment of up to one year, or both. Information furnished herewith is deemed confidential and will not be published or disclosed except in accordance with Section 705 of the Defense Production Act of 1950, as amended (50 U.S.C App. Sec. 2155). Section 705 prohibits the publication or disclosure of this information unless the President determines that its withholding is contrary to the national defense. Information will not be shared with any non-government entity, other than in aggregate form. The information will be protected pursuant to the appropriate exemptions from disclosure under the Freedom of Information Act (FOIA), should it be the subject of a FOIA request.

Notwithstanding any other provision of law, no person is required to respond to nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number.

BURDEN ESTIMATE AND REQUEST FOR COMMENT

Public reporting burden for this collection of information is estimated to average 14 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information to BIS Information Collection Officer, Room 6883, Bureau of Industry and Security, U.S. Department of Commerce, Washington, D.C. 20230, and to the Office of Management and Budget, Paperwork Reduction Project (OMB Control No.---- - ----), Washington, D.C. 20503.

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Section II WHO MUST RESPOND TO THIS SURVEY

Select the description that most closely reflects your company's operations from 2006–2010.

1.	My company operates in the following ways, as a: <i>[Check all that apply]</i> Note: If your company <i>only</i> engages in reselling information network capacity, you may be exempt from having to complete this survey. See BIS staff contact information above.		Facility-based carrier		Capacity reseller
			Managed Services Provider		Other <i>[Describe in space below]</i>

Comments:

2.	My company owns and/or operates in the United States the following types of data and communications network facilities: <i>[Check all that apply]</i>	Owns	Operates		Owns	Operates	
				Terrestrial wired networks			Satellite ground stations
				Cellular wireless networks			Undersea cable landing stations
				Cable Information/ Television Networks			Other <i>[Describe in space below]</i>

Comments:

Please select the description that most closely reflects your company's operations from 2006–2010.

3.	My company operates as a: <i>[Check all that apply]</i>		Local exchange carrier		Inter-Exchange carrier		Wholesale transport carrier
			Cable TV provider		"Triple-Play" service provider (Cable TV, Telephone, Internet)		Other (Explain below)
			Lessor of Information Infrastructure (e.g. dark fiber)		Internet service provider		None of the Above

Comments:

EXEMPTION FROM SURVEY

If you selected "No" for questions 1-3, you may be exempt from completing this U.S. Government survey. Please call one of the BIS contacts listed in "General Instructions" to verify your status. Then, complete, print out, and send a signed copy of the "Certification" page in PDF format *[only after your BIS point-of-contact confirms your company's or organization's exemption]* to our office via e-mail at: infonetworksurvey@bis.doc.gov.

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U.S. Information Network Infrastructure Survey

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Section III

GENERAL INSTRUCTIONS

A.

	<p>Your company is required to complete this survey <u>using the Excel-based survey template</u>, which must be downloaded from the BIS website. At your request, BIS staff will e-mail the Excel survey template directly to your company. For your convenience, a PDF version of the survey is available on the BIS website to aid internal data collection. DO NOT use the PDF to submit your company's response to BIS.</p>
<p>B.</p>	<p>If information is not available from your records in the form requested, you may furnish estimates.</p>
<p>C.</p>	<p>General Instructions: Please respond to every question. Surveys that are not fully completed will be returned for completion. Use comment boxes to provide information to supplement responses provided in the survey form.</p> <p><u>Under no circumstances</u> may data or information be pasted, or otherwise electronically transferred, into survey answer boxes. All responses must be keyboarded in answer boxes or selected from the survey document's drop-down menus. Surveys containing pasted responses can not be scored in BIS compilers and <u>will be returned to respondents for proper completion</u>.</p> <p>For assistance regarding the survey, contact any of the Office of Technology staff members listed below.</p> <p>Important: This survey <u>may not</u> be submitted in paper form. Please submit the completed survey document in <u>Microsoft Excel 1997-2002</u> format at www.infonetworksurveysubmissions@bis.doc.gov. If you can not upload the survey document, contact Office of Technology Evaluation staff</p>
<p>D.</p>	<p>Points of Contact for Questions Regarding This Survey:</p> <p>Erika Maynard, Trade and Industry Analyst – 202-482-5572; emaynard@bis.doc.gov Anna Bruse, Trade and Industry Analyst - 202-482-7418; abruse@bis.doc.gov Michael Caughey, Trade and Industry Analyst – 202-482-5415; mcaughey@bis.doc.gov Michael Finucane, Trade and Industry Analyst - 202-482-3893; Mfinucan@bis.doc.gov Woodrow McClure, Trade and Industry Analyst – 202-482-2081; wmclure@bis.doc.gov Mark Crawford, Senior Trade and Industry Analyst - 202-482-8239; mrcrawfor@bis.doc.gov</p>
<p>C.</p>	<p>For letter correspondence to the Office of Technology Evaluation, please write to:</p> <p>Brad Botwin, Director, Industrial Studies Office of Technology Evaluation, Room 1093 U.S. Department of Commerce 1401 Constitution Avenue, NW Washington, DC 20230 bbotwin@bis.doc.gov</p> <p>Please do not mail or e-mail completed surveys to our office; all surveys must be submitted electronically to our secure website.</p>
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Section IV- a	
Definitions – Wired Network Systems	
Term	
Add/Drop	Allows optical wavelengths to be added or dropped at any line amplifier location.
Add-Drop Multiplexer (ADM)	A device that enables data to enter and leave a SONET bit stream without having to de-multiplex the stream. An Add/Drop Multiplexer (ADM) is an example of Line-Terminating Equipment (LTE) that originates or terminates one or more sections of a line signal.
Aggregation Routers	A router that enables service providers and enterprise edge networks to combine lower rate services (such as simultaneously host resource-intensive integrated data, voice and video business and consumer services) into a higher rate communications path. Also known as aggregation service routers, these devices may incorporate platform software virtualization to enable "instant-on" provisioning and simultaneous use of a wide range of service functionality, including firewall, Internet protocol security (IPSec), virtual private networks, deep-packet inspection (DPI), and session border control activities.
Anti-Virus Systems	Products and technology used to detect, protect and remove malicious code from infected systems. Antivirus product vendors share information and resources to ensure rapid response to malicious code outbreaks. Most antivirus vendors participate in independent testing that certifies their products to detect and/or disinfect viruses.
Asynchronous Transfer Mode (ATM)	A cell-based transmission and switching technique employing asynchronous time division multiplexing. It encodes data into small fixed-sized cells (cell relay) and provides data link layer services that run over Open Systems Interconnection (OSI) model Layer 1 physical links. ATM is a core protocol used over the SONET/SDH backbone of the Integrated Services Digital Network.
Asynchronous Transfer Mode (ATM) Core Switch	A switch device whose primary purpose is to switch fixed ATM cells based on information carried in the ATM cell header (a specialized region where the address information is stored for the source and destination). A core ATM switch grooms traffic for port capacities greater than or equal to 622 megabits per second.
Authorized Distributors	Companies that are contractually authorized by original component manufacturers (OCMs) and original equipment manufacturers (OEMs) to market and sell their products.
Automated Optical Patch Panel	An automated system for engaging and disengaging optical patch cords through a mechanical, optical mechanical, or other robotic mechanisms.
Backbone	The primary network path for transporting traffic between network segments; also defined as a high-speed line, or a series of connections that form major pathways within a network.
Business Support System (BSS)	Business support systems typically refer to "business systems" for dealing with customers, supporting processes such as taking orders, processing bills, and collecting payments.
Capacity Reseller	Local exchange carriers and independent operators of fiber optic networks that possess surplus, unutilized "lit" fiber capacity, or inactive "dark" fiber capacity, for lease a short-term or long-term basis to carriers in need of additional capacity.
Carrier Ethernet Services Router	Carrier-class Ethernet router devices that support standardized services, including native Ethernet, Ethernet private line, Ethernet virtual private line, Ethernet private LAN, and Ethernet virtual private LAN, and Ethernet private tree.
Cellular Networks	Analog or digital systems that facilitate communications between mobile devices such as telephone handsets that operate in the 800-900, or 1,800-1,900 mega hertz frequency ranges. This encompasses the Personal Communications Services (PCS) standard. These systems support time division multiple access (TDMA), code division multiple access (CDMA), global system for communications (GSM) access methods.
Central Office	The location where common carriers, or service providers, terminate customer lines and locate the switching equipment that interconnects those lines. A centralized location for the Switching, Transmission and Power equipment that provide telephone service.
Class 5 Telephony Switch	A telephone switch or telephone exchange in the Public Switched Telephone Network (PSTN) located at the local telephone company's central office, directly serving subscribers. Class 5 switch services include basic dial-tone, calling features, and additional digital and data services to subscribers using the local loop. Class 5 switches were slower to convert from circuit switching technologies to time division multiplexing than the other switch classes.
Competitive Local Exchange Carrier (CLEC)	A telecommunications provider company or carrier that competes with established carriers (e.g., incumbent local exchange carriers (ILECs)).

Core Ethernet Aggregation and Switching	Core ethernet switches supporting ports where band-width is greater than or equal to 10 gigabits per second. Based on Ethernet protocol as the primary switching mechanism, and may also incorporate for the purposes of quality of service Multi-Protocol Label Switching (MPLS) and VLAN switching techniques.
Coarse Wave Division Multiplexer (CWDM)	Coarse wavelength division multiplexing (CWDM) is a method of combining several wave lengths widely spaced (greater than or equal 5 nm) on a single fiber. CWDM systems typically do not support inline optical amplification.
Core	The highest capacity equipment (routers, switches, optical transports, fiber, etc.) and links in a network.
Core Internet Protocol/Multi-Protocol Label Switching	Core Internet Protocol/Multi-Protocol Label Switch typically have port speeds of greater than or equal to 10 gigabits per second.
Data Center	A facility housing computer systems, information network switches, information network servers, data storage systems, and associated components. These facilities generally provide redundant power supplies, redundant data communications connections, environmental controls (e.g., air conditioning, fire suppression) and security devices. Such facilities are also called a server farm.
Digital Cross Connect System (DCS)	A network device used by telecom carriers and large enterprises to switch and multiplex low-speed data signals onto high-speed lines. Digital cross-connects (DCSs) are widely used in conjunction with central office switches and may be installed both before and/or after the switch. Cross-connections are established via an administrative process and are semi-permanent. DCS systems typically operate on digital containers in time division multiplex protocols and rates.
Dense Wave Division Multiplexer (DWDM)	A device that channels data from different sources together on an optical fiber, with each signal carried at the same time on its own separate light wavelength. DWDM systems typically supporter greater than 16 wave lengths per fiber but may scale to 80 wavelengths or more.
EFIT	Equipment and engineering, furnish, install, and test (EFIT)
Ethernet	A link layer protocol (Layer 2) based on the suite of standards defined by the IEEE 802.3 committee.
Ethernet switch	A system that switches Ethernet frames based on medial access control (MAC) addresses and/or virtual local area networks (VLAN) IDs.
Facility-Based Carrier	A long-distance service provider that owns its own physical facilities.
Fixed Add-Drop Multiplexer (FOADM)	FOADMs are optical multiplexers based on simple static filters that permit add/drop of predefined wavelength traffic along fiber optidc networks.
Frame Relay (FR)	Frame Relay is a wide area network (WAN) protocol that operates at the physical and data link layers of the Open Systems Interconnection (OSI) reference model. Originally designed for use across Integrated Services Digital Network (ISDN) interfaces, frame relay puts data in a variable-size unit called a frame and leaves any necessary error correction (retransmission of data) up to the end-points. Based on older X.25 packet-switching technology designed for transmitting analog data (such as voice conversations), frame relay uses two packet techniques: a) variable-length packets and b) statistical multiplexing. Although generally reliable, the protocol does not guarantee data integrity and discards packets when there is network congestion.
Frame Relay Switch	Frame relay switches process and route data frames.
Free-Space Optical Transmission (FSO)	This technology transmits invisible, eye-safe light beams from one "telescope" to another using lasers in the infrared spectrum (700-1600 nm) where capacity can reach 10 gigabits per second (Gb/s). The light beam carries whatever optical transmission signal (layer 2 or MAC) and protocol framing a manufacturer chooses to support, typically SONET, ATM, 10/100/1000 Ethernet, or other voice, data, or video protocols.
Gateway GPRS Support Node (GGSN)	Organizes the inter-workings between the general packet radio services (GPRS) network and external packet switched networks to which the mobile systems may connect, including Internet and X.25 networks. The GGSN is a combination of a gateway, router, and firewall as it hides the internal network configuration from those outside. The GGSN receives data addressed to a specific user, checks if the user is active, and then forwards the data. In the opposite direction, the GGSN routes packet data from the mobile system to the destination network.
Gateway GPRS Support Node (GGSN)	The interface between the GPRS wireless data network and other networks such as the Internet or private networks.
High-bandwidth Microwave	The use of wireless communications systems to send data from an end user to a node in a major network such as the Internet or an

Backhaul	organization's proprietary network usually at data rates of 200–300 Kbps and higher.
Host-based Firewall	Host-based firewalls reside on individual devices like desktop workstations or servers and are concerned with protecting only that particular computer. Host-based firewalls are also typically software-based rather than a hardware device, involving a firewall program that runs in the background while computer users work.
Hub	A communications infrastructure device to which nodes on a multi-point bus or loop are physically connected. Commonly used in Ethernet and Fiber Channel networks to improve the manageability of physical cables. Hubs maintain the logical loop topology of the network of which they are a part, while creating a "hub and spoke" physical star layout. Unlike switches, hubs do not aggregate bandwidth. Hubs typically support the addition or removal of nodes from the bus while it is operating.
Hybrid DWDM Transport-Optical Cross Connect System	A hybrid DWDM Transport and Optical Cross Connect System (e.g. Infinera).
In-Band	Refers to management channels and mechanism inherently provided by telecommunications elements to facilitate remote management and configuration. Examples of in-band management, include, but are not limited to, overhead bytes in physical layer containers such as SONET/SDH DCC, or OTN GCC, optical supervisory channel, or other facility provided by the equipment for management purposes.
Information Assurance Products	Devices (hardware and/or software) whose sole function is to provide network security such as firewall protection, intrusion detection systems, deep packet inspection, network or link encryptors, etc.
Information Technology (IT)	All aspects of information creation, access, use, storage, transport and management. The term 'information technology' addresses all aspects of computer and storage systems, networks, users and software in an enterprise.
Intelligent Optical Switch (IOS)	"Intelligent" refers to optical switches using dynamic routing and signaling software and protocols (e.g. GMPLS, G.ASON) to create and manage a flexible mesh infrastructure to deliver services in real time. These optical switches employ routing and management software to automate provisioning, routing, and restoration of light paths along with integrated SONET/SDH, OTN, and wavelength functions.
Intelligent Photonic Cross Connect System (PXC)	An intelligent photonic cross-connect is a switch that connects optical signals arriving at a location to other optical facilities (fibers) to enable optical signals to travel to various destinations. The photonic designation means that these are optical connections (no optical to electrical-to-optical (OEO) conversion takes place). The optical signals connected can be either individual wavelengths or the entire contents of a fiber facility, depending on the application or the type of switch. The "intelligent" designation indicates that the switch has knowledge of the facilities to which it is connected, and can make switching decisions based on that knowledge. Generally, this knowledge is obtained by communicating with other switches in the network via a control plane.
Inter-Exchange Carrier (IXCs)	Inter-exchange carriers provide inter-LATA service (basically, long-distance service). In some instances they co-locate equipment at LEC facilities and tap into the LECs switching equipment so that LEC customers can make long-distance calls across the IXCs network. All LECs must provide inter-exchange carriers with access locations called a point-of-presence (PoP).
Internet Protocol (IP)	A Layer 3 networking protocol first defined fully in RFC 791 and later refined in RFC 2460. The first RFC is IPV4 and the second is IPV6.
Layer 1	Open systems interconnect OSI physical layer, which defines communications characteristics such as property of the physical medium, data rates, modulation format, and coding and framing.
Legacy Dense Wave Division Multiplexing Systems	Older dense wave division multiplexing (DWDM) systems operating at less than or equal to 16 wave lengths that do not have reconfigurable add/drop capability, and that have no real traffic management capability (e.g.: those without switching or aggregation of end user traffic.) These systems were first deployed in the mid 1990s.
Link-Layer Transmission/Switching Aggregation Systems	Layer two, the second lowest layer in the Open Systems Interconnection (OSI) seven-layer model. The data link layer splits data into frames to transmit on the physical layer and receives acknowledgement frames. These systems (ATM, Ethernet, MPLS, Frame Relay, etc.) switch and aggregate traffic based on link-layer protocols/
Local Exchange Carrier (LEC)	Local exchange carrier (LEC) describes a public telephone company in the U.S. that provides local service. Local exchanges connect to other local exchanges within a local access and transport area (LATA) or to inter-exchange carriers (IXCs) such as long-distance carriers AT&T, CenturyLink, Sprint, and Verizon.
Local Area Network (LAN)	An information network connecting computers and devices in a home, business, school, office building (or cluster of closely positioned buildings) across a limited geographical area.
Local Tandem Switch	A high capacity backbone switch or core switch positioned in the physical core, or backbone, of a Public Switched Telephone Network

	(PSTN). This device interconnects edge switches, or Central Office (CO) switches. Local tandem switch ties two local central offices together.
Long Distance Tandem Switch	Long-distance tandem switch ties a central office or a local tandem switch to a long-distance network.
Long-Haul Dense Wave Division Multiplexing Terminal	A system that multiplexes more than one wavelength on to an optical fiber for transmission over a distance greater than or equal to 250 kilometers.
Malware	Malicious software installed without permission that does harm to computer equipment, data repositories, and network information systems. Malware includes: viruses , worms , trojan horses , crimeware, logic bombs, backdoors, and spyware . Malware is not be confused with defective software – software intended for a legitimate purposes that contains errors or bugs.
Managed Services Provider	A network operator, or contractor, that optimizes the quality of services and delivering of application layer traffic (e.g., voice, data, video).
Metro Core	Metro core networks are required to efficiently aggregate multiple service types including legacy SONET/SDH and packet-based growth services in networks surrounding large metropolitan areas.
Microwave Transmission	Radio transmission using very short wavelengths with extremely high frequency bands.
Multiplexing	In data transmission, a function that permits two or more data sources to share a common transmission medium such that each data source has its own channel. Methods of multiplexing include time division multiplexing, and wavelength division multiplexing.
Multi-Protocol Label Switching (MPLS)	A means for switching data traffic using a label in the header of a variable length IP packet.
Multi-service provisioning platform (MSPP)	Transport technology known collectively as the multi-service provisioning platform (MSPP), which supports SONET/SDH and Ethernet over SONET services. TDM-based MSPPs replace traditional ADM metro area equipment.
Network Management Routers	Routers that exclusively support communications associated with the management of network operations.
Network Operations Center (NOC)	One or more locations from which control is exercised over a telecommunications, computer, or television broadcast network. NOCs monitor networks for alarms or certain conditions that may require special attention to avoid impact on the network's performance. For example, in a telecommunications environment, NOCs monitor for power failures, communication line alarms (such as bit errors, framing errors, line coding errors, and circuits down) and other performance issues.
Network Time Protocol (NTP)	A protocol for synchronizing the clocks of computer systems over packet-switched, variable-latency data networks. It is designed particularly to resist the effects of variable latency by using a jitter buffer.
Original Component Manufacturer (OCM)	A company that controls the design and manufacture of components used in information networks and that owns the associated intellectual property necessary to create the product and enable its functionality. OCMs typically sell their products directly to manufacturers or through licensed “authorized” distributors.
Original Equipment Manufacturer (OEM)	A company that controls the design and manufacture of hardware or software products used in information networks and owns the associated intellectual property necessary to create the product and enable its functionality. OEMs typically sell their products through formally “authorized” distributors.
Operational Support Systems (OSS)	Systems employed by carriers in managing the information networks, including supporting load monitoring, provisioning services, configuring network components, equipment surveillance, and managing faults. Services may include the capability to create, deploy, manage, maintain, and bill for telecommunications services. OSS may also encompass network hardware and software maintenance contracts and professional services applicable to the installation and operation of a customer's infrastructure.
Optical Amplification/ Repeater System	A device that amplifies an input optical signal without converting it to electrical form. Alternatively, a repeater that regenerates the signal by converting in to the electrical domain.
Optical Cross Connect System (OXC)	An optical network element that grooms and switches incoming optical signals (greater than or equal to 50 megabits per second) to appropriate output ports. OXCs generally switch signals using Layer 1 protocols such as SONET, SDH, and OTN. OXCs can have optical or electrical switch matrices.
Optical Transport Network	Optical Transport Network (OTN) is an industry standard optical transport protocol defined by the ITU G.709 standard.
Packet Optical Transport	Also known as Packet Optical Network Platforms (PONPs)], this device combines three essential elements: a wave division

System (P-OTS)	multiplexer with a reconfigurable add-drop module (ROADM); a TDM interface to multiplex and groom traditional TDM traffic; and an Ethernet switching device. P-OTS may also support(OTN), IP/MPLS switching.
Packet-Switch	A device for routing data through a network by reading addresses in variable-sized packet headers or labels to determine their destination.
Point-of-Presence (POP)	A physical location, usually a building where the Inter-exchange Carrier system, that is interconnected with the Local Exchange Carrier Network.
Primary Reference Source (PRS)	Systems critical for synchronizing information networks. Typically these synchronizing devices are cesium-based clocks for Stratus 1 applications. Status 2 timing devices, which are slightly less precise, may be rubidium-based, or utilize global positioning satellites (GPS).
Reconfigurable Optical Add-Drop Multiplexer (ROADM)	Switching is enabled in these devices using an all-optical switch fabric that does not require optical-to-electrical or electrical-to-optical conversion. A ROADM system can support multiple DWDM transmission spans and client-level grooming.
Resilient Packet Rings (RPR)	A data link layer that utilizes dual, counter-rotating rings for fault tolerance in for carrier SONET and Ethernet networks. RPR, (a.k.a. IEEE 802.17) is similar to dynamic packet technology (DPT) and spatial re-use protocol (SPR) approaches to enhancing the efficiency of SONET/SDH multiplexers in transmitting packets on ring networks.
Router	A hardware and software system that directs data packets toward their intended destinations. Routers have various physical interfaces such as Ethernet, T1, E1, DS3, OC-3, etc. Routing is based upon the destination address contained within the header of the IP data packet.
Security Operations Center	The security operations center monitors activity and events in client environments to ensure that anomalous behavior is detected, identified, classified and acted upon where appropriate. Some carriers combine this function with their network operation centers.
Session Border Controllers (SBC)	Devices deployed in some voice over Internet protocol (VOIP) networks to control signaling and/or data flows used to establish, conduct, and terminate telephone calls or other interactive media communications. SBCs typically reside between two service provider networks in a peering environment; or between an access network and a backbone network to provide service to residential and/or enterprise customers.
Synchronous Digital Hierarchy (SDH)	An international standard for synchronous data transmission over fiber optic cables. SDH, as defined by the European Telecommunications Standards Institute (ETSI), specifies a standard rate of transmission at 155.52 Mega bits/s, STM-1. STM-1 is equivalent to SONET's Optical Carrier (OC) level-3.
Signal Transfer Point (STP)	A packet switching device that performs a message routing function in a common channel signaling (CCS) network. It receives, discriminates, and transfers CCS messages between the signaling points connected to it. STP devices can function in a network as separate network elements or as a part of a switch.
Synchronous Optical Networking (SONET)	SONET defines a standard rate of transmission at 51.84 Mega bits/s, STS-1. SONET is defined in Telcordia Technology's Generic Requirements Document GR-253-CORE.
SONET Path Terminating Equipment	Path-Terminating Equipment (PTE) interfaces non-SONET equipment to the SONET network. At this layer, the payload is mapped and de-mapped into the SONET frame.
SONET/SDH/OTN Add-Drop Multiplexer	A device that enables data to enter and leave a SONET bit stream without having to de-multiplex the stream. An Add/Drop Multiplexer (ADM) is an example of Line-Terminating Equipment (LTE) that originates or terminates one or more sections of a line signal.
Switch	A network infrastructure component to which multiple nodes attach. Unlike hubs, switches typically have internal bandwidth that is a multiple of link bandwidth, and the ability to rapidly switch node connections from one to another. A typical switch can accommodate several simultaneous full duplex transmissions between different pairs of nodes. A switch filters, forwards and directs frames or circuits based on a destination address.
Tandem Switch	Switches that consolidate traffic, reduce trunk group requirements, and switch inter-office traffic. Also referred to as "local" and "access" tandems, these switches handle originating or terminating traffic between End Offices and the Inter-exchange Carrier's Point-of-Termination. An Access Tandem is also used to distribute originating or terminating traffic between a CLEC end office and an intra-LATA toll point or an Inter-exchange Carrier's Point of Termination.
Tier I	Another definition is that the service provider is considered Tier 1, if it does not pay any other provider for transit of its traffic across its backbone.

Time Division Multiplexing (TDM)	Time division multiplexing (TDM) was designed to delivery a steady stream of data, i.e., digitized voice. The data rate for each channel is exactly what is needed to carry a digitized voice-64Kbits/sec. TDM is a multiplexing technique that divides a circuit into multiple channels based on time. The technique is associated with telephone company voice services. T1 and T3 circuits are divided into multiple channels using time division multiplexing.
Satellite Ground Stations	A satellite ground station or earth station sends or receives data or messages to and from orbiting satellites. Stations conduct tele-communications with spacecraft and/or receive radio waves from astronomical radio sources. Earth stations communicate with space-craft by transmitting and receiving radio waves in the super high frequency or extremely high frequency bands (e.g., microwaves).
Satellite Teleport Stations	Permanent satellite uplink facilities built to maintain high quality communications with orbiting satellites, and consisting of a number of facilities for data transmission and reception via a satellite connection.
Satellite Transmission	Telecommunication activity using a downlink from a satellite down to one or more ground stations or receivers, and an uplink from a ground station up to a satellite.
Signaling Gateway	A device that enables connectivity between different signaling networks by resolving signaling differences between legacy switches and new network equipment (such as VoIP Gateways). Signaling Networks may use standardized signaling gateway protocols like SS7, ISDN, and other CAS or CCS based signaling protocols. The Signaling Gateway usually is installed between the legacy network signaling node and new network equipment such as a VoIP Gateway.
Transmission Control Protocol/Internet Protocol (TCP/IP)	A family of IP-based protocols which facilitate reliable transmission of data packets over various media in various circumstances. TCP/IP provides the basis of the Internet and also of many subscriber services. Also, a set of protocols developed to link dissimilar computers across many kinds of networks.
Two-Factor Authentication	The employment of two means of identification as a security strategy to protect access to data, devices, or networks. Two-factor authentication may be invoked with a physical token, such as a card, and a separate security code, e.g. a password or personal identification number. Alternatively, it may rely on two separate codes.
Ultra Long-Haul Dense Wave Division Multiplexer	A DWDM system supporting unrepeatd traffic over distances greater than 1,000 kilometers.
Undersea Cable Landing Stations	Termination point for underwater cable. Most often very close to cable landing point, but can be several miles distant. Often houses co-located facilities from various companies accessing the telecommunications or power transmitted over the underwater cable. Also known as cable termination station.
U.S.-Based	A company that is headquartered and incorporated in the United States, and whose ultimate parent company is headquartered and incorporated, or otherwise registered in the United States.
Virtual Local Area Network (VLAN)	Network hosts with a common requirements that communicate as if they were attached to the same broadcast domain, regardless of physical location. VLANs operate similarly to physical LANs, but permit end stations to be grouped together even if they are not located on the same network switch. Network reconfiguration can be done through software instead of physically relocating devices.
Virtual Private Networks (VPN)	A network that uses a public telecommunication infrastructure, such as the Internet, to service remote offices or individual users. VPN uses shared public infrastructure while maintaining privacy through security procedures, for example, by encrypting data at the sending end and decrypting it at the receiving end – sending the data through a "tunnel" that cannot be "entered" by data that is not properly encrypted. VPN can employ another level of security by encrypting the originating and receiving network addresses.
Voice over Internet Protocol (VOIP)	A group of transmission technologies for delivery of voice communications via the Internet or other packet-switched networks. . VOIP originates an Internet telephone call by converting an analog voice or facsimile signals to digital format and compressing/translating the signal into Internet protocol (IP) packets for transmission over the Internet; the process is reversed at the receiving end.
Wavelength Division Multiplexing (WDM)	A technique in fiber-optic transmission for using multiple light wavelengths (colors) to send data over the same medium. Two or more colors of light on one fiber. Simultaneous transmission of several signals in an optical waveguide at differing wavelengths.
Wavelength Division Multiplexer (WDM)	A passive optical device that combines light signals with different wavelengths on different fibers onto a single fiber.
Wholesale Transport Carrier	A telecommunications carrier that sells capacity to smaller communications companies and local carriers.

Section IV - b	
Definitions – Wireless Network Systems	
Term	
Advanced Mobile Phone Service (AMPS)	Wireless Advanced Mobile Phone Service and digital AMPS (D-AMPS) connect the sender and receiver by radio waves and/or microwaves. A standard system for analog signal cellular telephone service in the United States and some other countries, AMPS allocates frequency ranges within the 800 and 900 Megahertz spectrum to cellular telephone. Bands are divided into 30 kHz sub-bands (channels). Spectrum division into sub-band channels occurs using frequency division multiple access (FDMA).
Authentication Center (AuC)	Associated with the HLR in a GSM or UMTS network. Provides authentication parameters for the authentication process.
Authentication Center (AC)	Provides authentication parameters for the authentication process in a CDMA network.
Code-Division Multiple Access (CDMA)	digital cellular network that utilizes spread-spectrum techniques where every channel uses the full available spectrum with individual conversations being encoded with a pseudo-random digital sequence, rather than by assigning a specific frequency to each user.
Base Station Controller (BSC) - CDMA	A network component that controls one or more Base Transceiver Stations.
Base Station Controller (BSC) - GSM	A network component that controls one or more Base Transceiver Stations.
Base Transceiver Station (BTS) – CDMA/EVDO	A base station is the actual transmitter and receiver in a CDMA/EVDO network.
Evolved Packet Core (EPC)	An all-Internet Protocol mobile core network for LTE (see 3GPP Release 8 standards) to enable provision of advanced real-time and media-rich services with enhanced Quality of Experience (QoE).. The EPC provides mobile core functionality that in previous mobile generations (2G, 3G) are realized through two separate sub-domains: circuit-switched (CS) for voice and packet-switched (PS) for data. The EPC separates of control and data planes and through a flattened IP architecture, which reduces the hierarchy between mobile data elements.The EPC provides the key core elements of the LTE Core Network architecture. The EPC consists of the Mobility Management Engine (MME) which handles the mobility and IP connections between devices and the network and the SAE Gateway which provide the packet processing.
Gateway GPRS Support Node (GGSN)	Supports the edge routing function of the GPRS network. To external packet data networks the GGSN performs the task of an IP router. Firewall and filtering functionality, to protect the integrity of the GPRS core network, are also associated with the GGSN along with a billing function.
General Packet Radio Services (GPRS)	A packet-based wireless communication service with data rates from 56 up to 114 Kbps and continuous connection to the Internet for mobile phone and computer users. GPRS is based on Global System for Mobile (GSM) communication and complements existing services such circuit-switched cellular phone connections and the Short Message Service (SMS).
GPRS Support Node (GSN)	Combined SGSN and GGSN in a single network node which supports the use of packet data (2G and/or 3G) in a GSM core network
Global System for Mobile Communications (GSM)	A wireless digital cellular network. GSM employs both signaling and speech channels capable of eight simultaneous calls on the same radio frequency. This is achieved with the use of a combination of frequency division multiple access (FDMA) and time division multiple access (TDMA).
Home Location Register / Home Subscription Server (HLR/HSS)	A central database that contains details of each mobile phone subscriber authorized to use the GSM core network. Stores details of every SIM card issued by the mobile phone operator including information such as the electronic serial number, mobile identification number, current location, and service profile information. This database within the Home Public Land Mobile Network. Provides routing information for Mobile Terminated calls and SMS. Also responsible for the maintenance of user subscription information.
Home Public Land Mobile Network (HPLMN)	The Home Public Land Mobile Network identifies the PLMN (Public Land Mobile Network) in which the subscriber's profile is held. Users roaming to other networks will receive subscription information from the HPLMN.
IP Multimedia Subsystem (IMS)	Manages requests for services between the subscriber and the Application Server that provides the service

Media Gateway (MGW)	A translation device or service that converts digital media streams between disparate telecommunications networks such as PSTN, SS7, Next Generation Networks (2G, 2.5G, 3G, and 4G radio access networks) or PBX. Media gateways enable multimedia communications across Next Generation Networks over multiple transport protocols such as Asynchronous Transfer Mode (ATM) and Internet Protocol (IP).
Mobility Management Engine (MME)	This device handles the mobility and IP connections between devices and the network and the SAE Gateway that provides packet processing.
Multimedia Messaging Service Center (MMSC)	Provides a store and forward facility for multimedia messages sent across a mobile network. Also provides formatting role to enable messages to be optimized for receiving handset's capability
Mobile Switching Center (MSC)	A switch or exchange that enables voice call processing in the wireless architecture. The MSC Server functionality enables a split between the control (signaling) and the user plane. The MSS and MGW makes it possible to cross-connect circuit switched calls switched by using IP, ATM, as well as TDM.
Mobile Switching Center Server (MSS)	The Server is a 3G core network element, which provides circuit-switched calling, mobility management, and GSM services to the mobile phones roaming within the area that it serves.
Node-B	The UMTS equivalent to the BTS (base transceiver station) description used in GSM. An enhanced Node-B (eNode-B) is the term used for a BTS in LTE systems. Note: BTS = GSM; Node-B = UMTS; eNode-B = LTE.
eNode-B	An enhanced Node-B (eNode-B) is the term used for a BTS in LTE systems. Note: BTS = GSM; Node-B = UMTS; eNode-B = LTE.
Packet Control Function (PCF)	Provides the control in Base Transceiver Stations for packet access in a CDMA network.
Packet Control Unit	Provides the control in Base Transceiver Stations for packet access in a GSM network.
Radio Network Controller (RNC)	A governing element in the UMTS radio access network (UTRAN) and is responsible for controlling the Node Bs that are connected to it. The RNC carries out radio resource management, some of the mobility management functions, and is the point where encryption is done before user data is sent to and from the mobile (or UE). The RNC connects to the Circuit Switched Core Network through Media Gateway (MGW) and to the SGSN (Serving GPRS Support Node) in the Packet Switched Core Network.
Service Control Function (SCF)	Intelligent Network node providing the control for IN based application in a wireless network.
Serving GPRS Support Node (SGSN)	Keeps track of the location of an individual Mobile Station and performs security functions and access control. Connects to RNC over the Iu-PS interface.
Short Message Service Center (SMSC)	To allow SMS messages to be sent. SMSC forwards the SMS to the indicated destination subscriber number.
Signalling Gateway (SG)	A network component responsible for transferring signaling messages (i.e. information related to call establishment, billing, location, short messages, address conversion, and other services) between Common Channel Signaling (CCS) nodes that communicate using different protocols and transports. Transport conversion is often from SS7 to IP.
Universal Mobile Switching Center (UMSC)	A combination of standard MSC voice call processing functionality and GSN packet switching in a single node.
Visitor Location Register (VLR)	Contains all subscriber data required for call handling and mobility management for mobile subscribers currently located in the area controlled by the VLR.
Wireless AMPS	Wireless Advanced Mobile Phone Service (AMPS) and digital AMPS (D-AMPS) connect the sender and receiver by radio waves and/or microwaves. A standard system for analog signal cellular telephone service in the United States and some other countries, AMPS allocates frequency ranges within the 800 and 900 Megahertz spectrum to cellular telephone. Bands are divided into 30 kHz sub-bands (channels). Spectrum division into sub-band channels occurs using frequency division multiple access (FDMA).
Universal Mobile Telecommunications System (UMTS)	A 3G mobile communication technology successor to GSM and GPRS. UMTS combines the W-CDMA, TD-CDMA, or TD-SCDMA air interfaces, GSM's Mobile Application Part (MAP) core, and the GSM family of speech codecs.

Section 1a		CORPORATE RESPONSE		Network Systems – Corporate Profile: Company Information		
Company Name						
Street Address – Corporate Headquarters						
City						
State						
Zip Code						
Website						
Phone Number						
Fax Number						
Location of company's Parent Company/Organization		Same as the above stated address?	Yes	No	If "No" – provide the address for your parent company in the space below.	
Street Address						
City						
State						
Zip Code						
Country						
Website						
Phone Number						
Fax Number						
Primary point(s) of contact regarding this survey's completion						
Name(s)		Title		Phone		State
Person(s) that have lead responsibility in your company for network operations, management, and maintenance.						
Name(s)		Title		Phone		State
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act						

3. Identify the types of information network facilities that your company operates in the United States <i>[Check all that apply]</i>	<input type="checkbox"/>	Long-haul transport networks	<input type="checkbox"/>	Undersea cable landing stations		
	<input type="checkbox"/>	Internet peering, co-location, gateway	<input type="checkbox"/>	Satellite Ground Stations		
	<input type="checkbox"/>	Telephony peering, co-location, gateway	<input type="checkbox"/>	Other		
	<input type="checkbox"/>	(e.g., Analog Telephony/TIME Domain Multiplexing (TDM))	<input type="checkbox"/>	video distribution		
Comments:						
2.a State the number of backbone/core-level information network facilities your company operates in the:	<input type="checkbox"/>	United States	<input type="checkbox"/>	U.S. Territories		
		Non-U.S. locations	<input type="checkbox"/>			
2.b State the number of aggregation/metro core-level information network facilities your company operates in the:	<input type="checkbox"/>	United States	<input type="checkbox"/>	U.S. Territories		
		Non-U.S. locations	<input type="checkbox"/>			
Comments:						
<input type="checkbox"/>						
<input type="checkbox"/>						
Comments:						
5. My company: <i>[Check all that apply]</i>	<input type="checkbox"/>	Owns and manages its own network operation centers (NOCs) for company-owned network infrastructure located <i>in</i> the United States	<input type="checkbox"/>	Relies on contractor organizations to provide network operation center (NOC) services for company-owned network infrastructure <i>in</i> the United States	<input type="checkbox"/>	Both
	<input type="checkbox"/>	Owns and manages its own network operation centers (NOCs) for company-owned network infrastructure <i>outside</i> of the United States	<input type="checkbox"/>	Relies on contractor organizations to provide network operation center (NOC) services for company-owned network infrastructure <i>outside</i> of the United States	<input type="checkbox"/>	Both
Comment:						
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act						

Section 1b – continued**Network Systems – Corporate Profile: Facility & Service Information - continued**

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

6. State the locations of all company network operation centers (NOCs) in the United States; and provide the manager's name, phone number, and e-mail address.

Operating Center Name	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-mail Address
<i>Drop-Down Forms</i>							

Comments:

7. State the locations of all company network operation centers (NOCs) in Non-U.S. locations; and provide the manager's name, phone number, and e-mail address.

Operations Center Name	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-mail Address
<i>Drop-Down Forms</i>							

Comments:

8. Identify the Names and contact information of all third-party organizations that provide network operation center (NOC) management services to your company.

NOC Service Provider(s)	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<i>Drop-Down Forms</i>							
Operations Center Names	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<i>Drop-Down Forms</i>							

9. Identify all locations of the third-party network operation centers (NOCs) used to manage any segment of your company's network infrastructure in U.S. and Non-U.S. locations.

NOC Service Provider(s)	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<i>Drop-Down Forms</i>							
Operations Center Names	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<i>Drop-Down Forms</i>							

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 1b – continued **Network Systems – Corporate Profile: Facility & Service Information - continued**
 [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

10. My company: [Check all that apply]	Owns and manages its own security operations centers (SOCs) for company-owned network infrastructure <u>located in</u> the United States	Relies on contractor organizations to provide security operations center (SOC) services for company-owned network infrastructure <u>located in</u> the United States	Co-locates its SOC operations with its NOC facilities in the United States.
	Owns and manages its own security operations centers (SOCs) for company-owned network infrastructure <u>outside</u> of the United States	Relies on contractor organizations to provide security operations center (SOC) services for company-owned network infrastructure <u>outside</u> of the United States	Co-locates its SOC operations with its NOC facilities in Non-U.S. locations.

Comment:

11. State the locations of all company security operations centers (SOCs) in the United States; and provide the manager's name and phone number.

Operations Center Name	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<u>Drop-Down Forms</u>							

Comments:

12. State the locations of all company security operations centers (SOCs) in Non-U.S. locations; and provide the manager's name and phone number.

Operations Center Name	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<u>Drop-Down Forms</u>							

Comments:

13. Identify the names of all third-party organizations that provide security operations center (SOC) management services to your company.

SOC Service Provider(s)	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<u>Drop-Down Forms</u>							

Operations Center Names	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<u>Drop-Down Forms</u>							

14. Identify all locations of the third-party security operations centers (SOCs) used to manage any segment of your company's network infrastructure in U.S. and Non-U.S. locations.

SOC Service Provider(s)	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<u>Drop-Down Forms</u>							

Operations Center Names	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address
<u>Drop-Down Forms</u>							

Comments:

Section 1c Network Systems – Corporate Profile: Business & Operational Practices									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
1a. Identify how your data network operations centers (NOCs) are protected from cyber attack: <i>[Check all that apply]</i>	Host-Based Protections			Perimeter Protections			False Hosts ("Honey pots")		
	- Malware Scanning/Detection (Anti-Virus/Anti-Spyware, etc.)			- Network Firewalls			Network Encryption		
	- Host-Based Intrusion Prevention System			- Network Intrusion/ Anomaly Detection Tools			Security Info and Event Management (SIEM)		
	- Host-Based Firewall			- Network Flow/Packet Collection			Other <i>[Explain in Space provided]</i>		
	- Root kit Detection Capability			- De-Militarized Zones (DMZs)			Other <i>[Explain in Space provided]</i>		
1b. Identify the detection and analysis techniques that your company uses to understand attacks/threats to your data network operations centers (NOCs): <i>[Check all that apply]</i>	Host Forensics			Network Event Forensics			Real-time Traffic Analysis		
	Host Configuration Management			Network Configuration Management			Policy management		Other <i>[Explain in Space provided]</i>
Comments:									
2. Data management and network management occurs: <i>[Check]</i>	In-band?		Through a separate physical network		Through a separate virtual private network (VPN)		Other <i>[Explain in Space provided]</i>		
Comments:									
3. Identify how network and data managers remotely manage systems/networks: <i>[Check all that apply]</i>	Remote connection via Internet			Internal network connection		No remote access			
	Remote External Virtual Private Network (VPN)			Internet					
Comments:									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 1c – continued Network Systems – Corporate Profile: Business & Operational Practices - continued									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
4.a Do you permit third-party organizations to operate within your management network and/or data management networks – and to report out of your networks for activities to: <i>[Check]</i>									
Collect data on traffic (e.g. network-wide traffic, routing traffic, subscriber usage, and application traffic)	Yes	No	Monitor security threats	Yes	No	Other <i>[Explain in Space provided]</i>	Yes	No	
If you responded "Yes" to any of the question responses above, identify all such third-party organizations that operate within your network. Specify the nature of their activities, and provide a point of contact and phone number. Survey participants responding "No" to all of the three above responses in this question, proceed to <i>Question 4.c.</i>									

Organization Name:	Nature of In-Network Activity:	Headquarters Location - Country	Organization Contact Name:	Phone Number:	E-Mail Address
Drop-Down Forms		Drop-Down Forms			Drop-Down Forms
Comments:					
4.b Do the third-party organizations that you permit to operate within your network and/or data management networks do so from: <i>[Check all that apply]</i>		Facilities located <u>in the United States</u> that your company owns and controls.		Facilities located <u>outside of the United States</u> that your company owns and controls.	
		Facilities located <u>in the United States</u> that they control.		Facilities located <u>outside of the United States</u> that they control	
		Do not know the countries from which approved third-party organizations operate on my network.		Other <i>[Please explain in space below]</i>	
If you responded "Yes" to any of the question responses above, identify all such third-party organizations that operate within your network. Specify the nature of their activities, and provide a point of contact and phone number. Survey participants responding "No" to all of the three above responses in this question, proceed to <i>Question 5</i> .					
4.c Does your company perform testing and validation of software upgrades, patches, and updates on network equipment prior to deployment in your systems? <i>[Check]</i>				Yes	No
If you responded "Yes" to this question, respond to Questions 4.d and 4.e. Survey participants responding "No" to this question should proceed to <i>Question 5</i> .					
4.d State the types of tests performed on the software in our equipment laboratory or test environment. <i>[Check all that apply]</i>		Validate system performance and features		Test system reliability	
		Verify system interoperability		Analyze impact on security	
		Other <i>[Please explain in space below]</i>		Other <i>[Please explain in space below]</i>	
Comments:					
4.e State the types of procedures that your company follows to ensure the integrity of the software installed in your network systems. <i>[Check all that apply]</i>		Verify digital certificates and code signatures		Request and analyze source code	
		Scan software for viruses and malware		Perform other analyses or procedures <i>[Please explain in space below]</i>	
Comments:					
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act					

Section 1c – continued**Network Systems – Corporate Profile: Business & Operational Practices - continued**

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

5a. Identify all Communications Assistance for Law Enforcement Act (CALEA) compliance equipment vendors that you company uses:

Name	Type of Equipment	Type of Software
Drop-Down Forms		Drop-Down Forms

5b. Identify all support companies that you company employs to assure compliance with CALEA requirements:

Name of Company	Type of Service Provided	Frequency of Service (Check)
-----------------	--------------------------	------------------------------

Drop-Down Forms			Daily		Weekl y		Monthly		Continuously		
Comments:											
6.a State the number of Data Centers that your company operates:				<u>Within</u> the United States					<u>Outside</u> of the United States		
Comments:											
6.b Identify the locations of the Data Centers that your company owns and/or operates in the United States and outside of the United States; and provide the manager's name and phone number.											
Operations Center Name	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address				
Drop-Down Forms											
Comments:											
7. Identify all organizations that operate Data Centers on behalf of your company to support its network operations; and provide the manager's name and phone number.											
Operations Center Name	Address	State	Zip Code	Country	Manager's Name	Phone Number	E-Mail Address				
Drop-Down Forms											
Comments:											
8. Does your company lease network equipment from: <i>[Check all that apply]</i>											
			Manufacturers		MFG's Authorized Distributors			Third-Party Suppliers			
			Yes	No	Yes	No	Yes	No			
If the answer is " No " for all choices – proceed to <i>Question 14</i> . If the answer is " Yes " – complete <i>Questions 9 - 13b</i> .											
Comments:											
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act											

Section 1c – continued		Network Systems – Corporate Profile: Business & Operational Practices - continued									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]											
9. State the typical duration of the network equipment lease:		1 - 3 years		3 – 5 years		5-7 years		7-10 years		10 years or longer	
Comments:											
10. Do the terms of the lease stipulate that: [Check all that apply]		Your company maintains the network equipment		The manufacturer maintains the network equipment		The manufacturer's designated contractor maintains the network equipment		Other (Describe in space below)			
Comments:											
11. Can ownership of the <u>Equipment Lease</u> be transferred by the lessor to another company or organization?										Yes	No
12. Can ownership of the <u>Equipment</u> subject to the lease be transferred to another company or organization?										Yes	No
Comments:											
13a. State the percent of your <u>backbone/core</u> U.S. facilities that use leased equipment from:		U.S.-based suppliers		%	13b. State the percent of your U.S. <u>metropolitan area core</u> facilities that use leased equipment from:		U.S.-based suppliers		%		
		Non-U.S.-based suppliers		%			Non-U.S.-based suppliers		%		
Comments:											
14. State the percent of decisions for procure-ment of <u>network equipment</u> that are made by: [Check all that apply]	%	Corporate-Level Company network operations staff	%	Contractor(s) support-ing corporate network operations staff	%	Contractor(s) operating corporate network operating systems	%	Other (Describe in space below)			
15. State the percent of decisions for procure-ment of <u>information security products</u> made by: [Check all that apply]	%	Corporate-Level Company network operations staff	%	Contractor(s) support-ing company network operations staff	%	Contractor(s) operating company network systems	%	Other (Describe in space below)			
Comments:											
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act											

Section 1d		Network Systems – Corporate Profile: Equipment & Software Procurement							
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
1. When first equipping a network facility, or performing a major change-out of network systems, my company/organization: <p style="text-align: right;"><i>[Check all that apply]</i></p>	<input type="checkbox"/>	- buys parts and systems directly from OEM/OCM manufacturers							
	<input type="checkbox"/>	- buys parts and systems through OEM/OCM authorized distributors							
	<input type="checkbox"/>	- buys parts and systems through known 3 rd party vendors							
	<input type="checkbox"/>	- buys used equipment, parts and systems from third-parties, auction sites, etc.							
	<input type="checkbox"/>	- provides a project contractor with instructions on systems and parts to purchase							
	<input type="checkbox"/>	- buys turn-key systems through a contractor and does not specify system component brands, or model types – just specifies overall performance requirements							
	<input type="checkbox"/>	- leases equipment							
Comments:									
2. My company/organization purchases spare or replacement routers, line cards and chassis, switches, multiplexers, and other data handling equipment: <p style="text-align: right;"><i>[Check all that apply]</i></p>	<input type="checkbox"/>	- directly from OEM/OCM manufacturers							
	<input type="checkbox"/>	- directly from OEM/OCM authorized distributors							
	<input type="checkbox"/>	- through known domestic 3 rd party, new-part vendors							
	<input type="checkbox"/>	- through known non-U.S., 3 rd party, new-part vendors							
	<input type="checkbox"/>	- through a U.S.-based contractor that maintains systems at this facility							
	<input type="checkbox"/>	- through a Non-U.S. contractor that maintains systems at this facility							
	<input type="checkbox"/>	- through a used-part vendor	<input type="checkbox"/>	- Other <i>[please explain in space below]</i>					
Comments:									
3.a As a condition of purchase, does your company require equipment manufacturers and their authorized distributors to disclose the original developers (including subcontractors) of software that enables the operation of acquired equipment currently deployed in your network systems?					<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	
3.b Identify the written requirements your company stipulates when buying systems or components from third-party vendors and/or maintenance contractors: <p style="text-align: right;"><i>[Check all that apply]</i></p>	<input type="checkbox"/>	- documentation to establish product authenticity, pedigree, and chain of custody?							
	<input type="checkbox"/>	- disclosure how the supplier acquired the product (e.g. manufacturer's product closeout, contract manufacturer surplus, independent distributor, broker, Internet purchase, etc.?)							
	<input type="checkbox"/>	- declaration of whether the product is "new" or "used"?							
	<input type="checkbox"/>	- disclosure of whether the product will be shipped directly from the vendor's warehouse?							
	<input type="checkbox"/>	- disclosure when the product ordered is being fulfilled and delivered by another party via drop-shipment to your company's designated point of delivery?							
	<input type="checkbox"/>	- pre-sale identification of the product brand name and manufacturer?							
Comments:									
4. Does your company have written procedures and guidance for its engineering and facility operations personnel to follow to assure that electronic systems installed, and maintained in this facility are: <p style="text-align: right;"><i>[Check "Yes" or "No"]</i></p>						Genuine (OCM/OEM)		Yes	No
						Have not been subject to tampering		<input type="checkbox"/>	<input type="checkbox"/>
Comments:									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 1d – continued		Network Systems – Corporate Profile: Equipment & Software Procurement				
<i>[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]</i>						
5. State the steps your company/organization takes to verify that network parts/systems that are acquired for its facilities are genuine OEM/OCM product: <i>[Check all that apply]</i>	<input type="checkbox"/>	- Verifies that documentation for products delivered for installation in this facility are genuine				
	<input type="checkbox"/>	- Confirms that model numbers, serial numbers, lot number, dates of manufacture, place of manufacture, etc., are valid				
	<input type="checkbox"/>	- Tests systems and components delivered to this facility				
	<input type="checkbox"/>	- Other				
Comments:						
6. Identify the due diligence steps that your company performs in selecting carrier information network equipment prior to its purchase and installation in facilities in the United States and in U.S. territories: <i>[Check all that apply]</i>	<input type="checkbox"/>	Evaluates hardware and software for vulnerability to denial-of-service attacks.	<input type="checkbox"/>	Checks on the manufacturer's ties to foreign governments, and business espionage	<input type="checkbox"/>	Consults National Security Agency
	<input type="checkbox"/>	Tests equipment to assure that data transfers can not be intercepted or redirected	<input type="checkbox"/>	Consults U.S. Computer Emergency Readiness Team – Dept. of Homeland Security	<input type="checkbox"/>	Consults the National Institute of Standards & Technology/ U.S. Dept. of Commerce
	<input type="checkbox"/>	Tests enabling software to assure data transmission security	<input type="checkbox"/>	Consults the Computer Crime and Intellectual Property Section (CCIPS), Criminal Division, at the Dept. of Justice	<input type="checkbox"/>	Other <i>(Describe in space below)</i>
	<input type="checkbox"/>	Consults the Federal Communications Commission	<input type="checkbox"/>	Consults Federal Bureau of Investigation	<input type="checkbox"/>	Do not know what organization to contact
Comments:						
7. State the duration that your company retains records of tests performed to evaluate equipment prior to purchase and installation in individual facilities: <i>[Check]</i>	<input type="checkbox"/>	3 months	<input type="checkbox"/>	6 months	<input type="checkbox"/>	1 year
	<input type="checkbox"/>	3 years	<input type="checkbox"/>	5+ years	<input type="checkbox"/>	Do not retain
Comments:						
8. For equipment installed in your company's facilities over the last three years, identify and rank your typical operational practices - on percentage (%) basis: <i>(Totals should not exceed 100%)</i>						
%	No OEM/vendor support after purchase except for warranty claims	%	Limited vendor support after purchase, usually without involving the manufacturer			
%	Substantial customization of equipment and engineering, furnish, install, and test (EFIT) activity - but limited post-start-up support	%	Substantial customization and EFIT with continuous vendor engagement for the lifecycle of the equipment			
%	Managed hosted-services with the vendor providing service products to the carrier and operating those products for the carrier	%	Other <i>(Describe in space below)</i>			
Comments:						
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act						

Section 1d – continued

Network Systems – Corporate Profile: Equipment & Software Procurement

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

9. Rank the five most important determining factors in your company/organization's selection of network system equipment:

Types of Network Systems	Factors Driving Equipment Purchase Decisions <i>[Select only five]</i>											
	Availability/ Delivery Schedule	Availability of Turn-Key System Packages	Average Meantime to Failure	Brand Name	Quality of Maintenance/ Service	Country of Manufacture	Availability and Quality of Financing Packages	Performance	Price	Legal liability	Reliability	Security of System Hardware /Software
Optical/ Transmission and Layer 1												
Ultra Long-Haul DWDM ¹	Drop-Down Boxes						Drop-Down Boxes					Drop-Down Boxes
Terrestrial Long-Haul Dense Wave Division Multiplexer Terminal ²												
Undersea Long-Haul Dense Wave Division Multiplexer Terminal [define]												
Metropolitan Area Dense Wave Division Multiplexer Terminal [define]												
Coarse Wave Division Multiplexer (CWDM) [Minimum wavelength spacing > 5 nm]												
Reconfigurable optical Add-Drop multiplexer (ROADM)												
Hybrid DWDM Transport and Optical Cross Connect System (e.g., Infinera)												
Intelligent Photonic Cross Connect (PXC)												
Automated Optical Patch Panel												
Optical Cross-Connect System (OXC)												
SONET/SDH/OTN Add-Drop Multiplexer [Electrically grooms SONET/SDH/OTN channels]												
Packet Optical Transport System (P-OTS) ⁴												
Multi-Service Provisioning Platform (MSPP)												
Free-space Optical Transmission [link capacity >= 1 gigabit per second]												
Microwave Transmission [link capacity >= 622 megabits per second]												

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 1d - continued

Network Systems – Corporate Profile: Equipment & Software Procurement

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

10. Please rank the brands of network equipment that your company finds most competitive -- by type of network device.

Type of Device	Device Manufacturers			
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Choice # 1	Choice #2	Choice #3	Choice #4
Ultra Long-Haul Dense Wave Division Multiplexer (DWDM) Terminal ¹	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes
Terrestrial Long-Haul Dense Wave Division Multiplexer Terminal ²				
Undersea Long-Haul Dense Wave Division Multiplexer Terminal				
Metropolitan Area Dense Wave Division Multiplexer Terminal				
Coarse Wave Division Multiplexer [Minimum wavelength spacing > 5 nm]				
Reconfigurable optical Add-Drop multiplexer (ROADM)				
Hybrid DWDM Transport and Optical Cross Connect System				
Intelligent Photonic Cross Connect (PXC)				
Automated Optical Patch Panel				
Optical Cross-Connect System (OXC)				
SONET/SDH/OTN Add-Drop Multiplexer [Electrically grooms SONET/SDH/OTN channels]				
Packet Optical Transport System (P-OTS) ³				
Multi-Service Provisioning Platform (MSPP)				
Free-space Optical Transmission (FSO) [link capacity >= 1 gigabit per second]				
Microwave Transmission [link capacity >= 622 mega bits per second]				

¹ Transmission capability of greater than 1,000 kilometers; maximum capacity of more than 8 wavelengths.² Maximum reach with optical amplification is 250 to 1,000 kilometers; maximum capacity of more than 8 wavelengths.³ Combines DWDM transmission, grooming, and switching with Layer 2 Carrier Ethernet and MPLS capabilities. Supports one or more packet layer protocols.

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 1d - continued		Network Systems – Corporate Profile: Equipment & Software Procurement			
		[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]			
10. – continued Please rank the brands of network equipment that your company finds most competitive -- by type of network device.					
Type of Device	Device Manufacturers				
Link-Layer Transmission/Switching/ Aggregation Systems	Choice # 1	Choice #2	Choice #3	Choice #4	
Asynchronous Transfer Mode (ATM) Core Switch [Total switching capacity >= 10 gigabits per second]	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes
Frame Relay Switch [Total switching capacity >= 10 gigabits per second]					
Carrier Ethernet Services Router [Supports ethernet services, e.g., E-Line, E-LAN, E-Tree]					
Resilient Packet Ring (RPR) [Or, equivalent technology]					
Core Ethernet Aggregation and Switching					
Other Link-Layer Transmission/Switching/ Aggregation Systems [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]					
Comments:					
Network Routing Systems					
Core Internet Protocol (IP)/ Multi-Protocol Label Switching (MPLS) [Aggregate capacity >= 10 gigabits per second]	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes
Other Network Routing Systems [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]					
Comments:					
Telephony Systems					
Class 5 Telephony Switch	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes	Drop-Down Boxes
Tandem Switch					
Signal Transfer Point (STP)					
Primary Reference Source (PRS) – Stratum 1 (Cesium-based)					
Primary Reference Source (PRS) – Stratum 2 (Rubidium-, GPS-assisted)					
Comments:					
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act					

FOR USG REVIEW – Incomplete Universe of Device Manufacturers To Appear in Drop-Down Boxes

Actelis Networks, Inc.)	Brocade	Exfo	Juniper	Obsidian Strategics	
Acterna	BTI	Extreme Networks	Lantern Communications	Ocean Optics	Tekelec
Adtran	Cable-Free Solutions	Fluke	Laurel Networks	Oclaro	Telco Systems
ADVA AG Optical Networking	Canobeam (Canon)	Force 10	LightPointe	OpVista	Tellabs
Advanced Fiber Solutions	Catena Networks (Ciena)	fsona	Lucent Technologies	Orcave	Tellium
Agilent	CBL	Fujitsu	LuxN	Overture Networks	Oki Electric Industry Co.
AirFiber	Check Point	General Bandwidth	Luxterra	Packeteer	Telco Systems
Alcatel	Ciena	GlimmerGlass	Marben Products	PAV Communications	
Alcatel-Lucent	Ciena-Nortel	Guillin	Mahi Networks	Perkin Elmer	Terabeam
ANDA	Cisco	Harris	Marconi	Plaintree Systems	
Anue	Callient	Hatteras	Meta-Switch	Proxim	Toshiba
Altera	Cramer	Hillstone		RAD Data	Transmode
Anite	Corrigent	Hitachi	Metro Ethernet Networks (now Nortel)	Riverstone Networks	
Appian Communications	Corvis	Hewlett-Packard (HP)	Mitsubishi Electric Corp.	Samsung	
Avago	CXR Larus	Huawei	Mostcom	Seikoh Giken	Tropic Networks
Avanex	Cyan Optics	IBM			
Avaya	Cyras	Ideal	Motorola	Siemens AG	Tyco
Aviat (formerly Harris Stratex)	Dell	IPITEK	Movaz	Sorrento Networks, Inc.	Vello Systems
Avici	Dows Lake Microsystems	Infinera	MRV Communications	Sumitomo	Xtera
Avvio Networks	Dune Networks (now Broadcom)	Ixia (formerly Agilent)	NEC	Sun Microsystems	Zhone Technologies, Inc.
Bay Microsystems	ECl Telecom	JDSU Uniphase	Netcore	Sycamore	ZTE
Bookham	Enablence Technologies, Inc.		Nokia		Other
Broadcom	Engage Communications	LSA Photonics	Nokia-Siemens		
	Ericsson		Nortel	Tecore	
			Noyes	Tejas Networks	Comtech Telecommunications Corp

Comments:
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 1d – continued **Network Systems – Corporate Profile: Equipment & Software Procurement**
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

10. – continued Rank the five most important determining factors in your company/organization’s selection of network system equipment:

Types of Network Systems Drop-Down Boxes	Factors Driving Equipment Purchase Decisions <i>[Select only five]</i>												
	Availability/ Delivery Schedule	Availability of Turn-Key System Packages	Average Meantime to Failure	Brand Name	Quality of Maintenance/ Service	Country of Manufacture	Availability and Quality of Financing Packages	Performance	Price	Reliability	Legal Liability	Security of System Hardware /Software	
Link-Layer Transmission/Switching/ Aggregation Systems													
Asynchronous Transfer Mode (ATM) Core Switch <i>[Total switching capacity >= 10 gigabits per second]</i>													
Frame Relay Switch <i>[Total switching capacity >= 10 gigabits per second]</i>													
Carrier Ethernet Services Router <i>[Supports ethernet services, e.g., E-Line, E-LAN, E-Tree]</i>													
Resilient Packet Ring (RPR) <i>[Or, equivalent technology]</i>													
Core Ethernet Aggregation and Switching													
Other <i>[Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]</i>													
Network Routing Systems													
Core Internet Protocol (IP)/ Multi-Protocol Label Switching (MPLS)													
Other <i>[Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]</i>													
Telephony Systems													
Class 5 Telephony Switch													
Tandem Switch													
Signal Transfer Point (STP)													
Primary Reference Source (PRS) – Stratum 1 (Cesium-based)													
Primary Reference Source (PRS) – Stratum 2 (Rubidium-, GPS-assisted)													

Comments:

Section 1e

Network Systems – Corporate Profile: Equipment Acquisition Finance

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

	Brand #1	Brand #2	Brand #3	Brand #4	Brand #5
1. Name the Five manufacturers of network equipment that you perceive as offering the steepest discounts on their products.	Drop-Down List	Drop-Down List		Drop-Down List	Drop-Down List
2. Identify the Top Five network equipment manufacturers that you perceive as offering the lowest network equipment prices prior to discounting.	Drop-Down List	Drop-Down List		Drop-Down List	Drop-Down List

Comment:

3. For each mode of financing, identify three network equipment manufacturers that you perceive as offering the most competitive price/financing packages:	“No-Money Down” financing		Pay-As-You-Go financing		
		Drop-Down List		Drop-Down List	
	Earnings-linked financing		Free Equipment		
		Drop-Down List		Drop-Down List	
	Leases with Purchase Options		Long-Term Equipment Trials		
		Drop-Down List		Drop-Down List	
4. Identify three equipment manufacturers that you perceive as directly offering, or otherwise arranging, the <u>lowest-cost financing packages</u> .	Rebates		Post-Sale Refunds of Part of Purchase Price		
		Drop-Down List		Drop-Down List	
	Drop-Down List		Drop-Down List		Drop-Down List

Comment:

5. Identify system vendors that request any of the following types of information regarding your network operations as a condition of an equipment bid, sale or lease:
[Check all that apply]

Equipment Physical Location	Network Topology	Fiber plant/conduit locations/layouts	Physical access procedures to enter buildings	Customers served by vendor's equipment	Information on other equipment connected to vendor's systems
Drop-Down List		Drop-Down List			Drop-Down List

6. Identify system vendors that request any of the following types of information regarding your network operations as a condition for implementing a maintenance service contract:
[Check all that apply]

Equipment Physical Location	Network Topology	Fiber plant/conduit locations/layouts	Physical access procedures to enter buildings	Customers served by vendor's equipment	Information on other equipment connected to vendor's systems
Drop-Down List		Drop-Down List			Drop-Down List

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 1e - continued						Network Systems – Corporate Profile: Equipment Acquisition Finance					
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]											
7. Identify the activities that you currently permit system vendors to perform in your network facilities: <i>[Check all that apply]</i>		On-site Equipment Installation		On-site Equipment Maintenance		On-site Equipment Upgrades		Remotely Access Network Equipment			
		Provisioning and Configuration		Remote Management		Other		Other			
Comments:											
8.a Identify <i>manufacturers</i> that, as a condition of providing a loan package or other discounts for your equipment purchase, stipulate that their designated service personnel must perform the following functions: <i>[Check all that apply]</i>		On-site Equipment Installation		On-site Equipment Maintenance		On-site Equipment Upgrades		Remotely Access Network Equipment			
		Drop-Down List						Drop-Down List			
		Provisioning and Configuration		Remote Management		Other		Other			
		Drop-Down List						Drop-Down List			
Comments:											
8.b Identify <i>network equipment leasing companies</i> that, as a condition of providing a loan package or other discounts for your equipment purchase, stipulate that their designated service personnel must perform the following functions at your facilities, or other facility access: <i>[Check all that apply]</i>		On-site Equipment Installation		On-site Equipment Maintenance		On-site Equipment Upgrades		Remotely Access Network Equipment			
		Drop-Down List						Drop-Down List			
		Provisioning and Configuration		Remote Management		Other		Other			
		Drop-Down List						Drop-Down List			
Comments:											
9. Identify equipment suppliers that are offering to arrange for the engineering and construction of your company network infrastructure in the United States:											
Comments:											
10. Identify equipment suppliers that are offering to arrange for the engineering and construction of your company's network infrastructure in Non-U.S. locations:											
Comments:											
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act											

Section 1f Network Systems – Corporate Profile: Current Types of Installed Equipment – Wireless Networks

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

1. For each type of network system listed in the left-hand column, identify the three most prevalent brands currently *installed in your wireless networks*; 2) state number of rack units installed for each manufacturer; and 3) estimate the remaining service life.

Wireless Network Devices –	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Expected Replacement Year(s)		
							Brand		
Radio Access Network	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		#1	#2	#3
Base Station Controller - CDMA (BSC)									
Base Station Controller - GSM (BSC)									
Base Transceiver Station - CDMA/EVDO (BTS)									
Base Transceiver Station - GSM (BTS)									
Femto Gateway									
Node B [3G]									
eNodeB [4G - LTE]									
Packet Control Function (PCF)									
Packet Control Unit (PCU)									
Radio Network Controller (RNC)									
Wireless Access Points for WiFi									
Wireless Access Points for WiMAX									
Wireless Core									
Authentication Center (AC)									
Authentication Center (AuC)									
Evolved Packet Core (EPC)									
Gateway GPRS Support Node (GGSN)									
GPRS Support Node (GSN)									
Home Subscriber Server (HSS)/Home Location Register (HLR)									
Internet Protocol Multimedia Subsystem (IMS)									
Media Gateway									
Mobile Switching Center (MSC)									
Multimedia Message Service Center (MMSC)									
Media Server									
Proxy-Call Session Control Function (P-CSCF)									
Service Control Function (SCF)									
Serving GPRS Support Node (SGSN)									
Session Border Controller (SBC)									
Short Message Service Center (SMSC)									
Signaling Gateway [SS7 Circuit Switching]									
Signal Transfer Gateway?? [Internet Protocol]									
Visitor Location Register (VLR)									
Universal Mobile Switching Center (UMSC)									

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 1f - continued**Network Systems – Facility Profile: Recently Installed Equipment - Wireless**

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

2. Starting with the most recent equipment purchase agreements and working backwards, 1) identify by system type the wireless equipment brands purchased, or slated for purchase, **from January 2008 through June 2011** for installation in your **wireless network facilities**; 2) state the number of rack units installed, or slated to be installed; and 3) estimate the service lifetime (in years).

Wireless Network Devices	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Estimated Service Life (Years)		
							Brands		
Radio Access Network	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		#1	#2	#3
Base Station Controller - CDMA (BSC)									
Base Station Controller - GSM (BSC)									
Base Transceiver Station - CDMA/EVDO (BTS)									
Base Transceiver Station - GSM (BTS)									
Femto Gateway									
Node B [3G]									
eNodeB [4G - LTE]									
Packet Control Function (PCF)									
Packet Control Unit (PCU)									
Radio Network Controller (RNC)									
Wireless Access Points for WiFi									
Wireless Access Points for WiMAX									
Wireless Core									
Authentication Center (AC)									
Authentication Center (AuC)									
Evolved Packet Core (EPC)									
Gateway GPRS Support Node (GGSN)									
GPRS Support Node (GSN)									
Home Subscriber Server (HSS)/Home Location Register (HLR)									
Internet Protocol Multimedia Subsystem (IMS)									
Media Gateway									
Mobile Switching Center (MSC)									
Multimedia Message Service Center (MMSC)									
Media Server									
Proxy-Call Session Control Function (P-CSCF)									
Service Control Function (SCF)									
Serving GPRS Support Node (SGSN)									
Session Border Controller (SBC)									
Short Message Service Center (SMSC)									
Signaling Gateway [SS7 Circuit Switching]									
Signal Transfer Gateway?? [Internet Protocol]									
Visitor Location Register (VLR)									
Universal Mobile Switching Center (UMSC)									

Comments:**BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act**

Section 2a Network Systems – Facility Profile: Management & Capability

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

Instruction: Complete Sections 2 - 5 for each network facility specified by BIS that your company operates in the United States, its territories, and protectorates.

1. Company Facility Name				Age of the Facility				
Street Address								
City								
State				Zip Code				
Manager's Name								
Manager's Phone Number				FAX Number				
Manager's E-mail Address				Web Site Address				
Identify this Facility's Prime Function(s) <i>[Check all that apply]</i>	<input type="checkbox"/>	Long-Haul Transmission	<input type="checkbox"/>	Optical/Transmission	<input type="checkbox"/>	Routing	<input type="checkbox"/>	Internet/Peering
	<input type="checkbox"/>	Act as a Network Operations Center	<input type="checkbox"/>	Act as a Security Operations Center	<input type="checkbox"/>	Mobile switching center	<input type="checkbox"/>	Cellular base station/Backhaul
	<input type="checkbox"/>	Voice Switching/Aggregation	<input type="checkbox"/>	Satellite/ RF Ground Station	<input type="checkbox"/>	Video Head End/Distribution	<input type="checkbox"/>	Undersea cable landing station
	<input type="checkbox"/>	Other	<input type="checkbox"/>	Carrier Co-location Facility	<input type="checkbox"/>		<input type="checkbox"/>	

Comments:

2. Identify primary point(s) of contact regarding completion of this network facility survey:

Name(s)	Title	Phone	State	E-mail Address

3. Identify person(s) that have lead responsibility in your company for operations, management, and maintenance at this network facility.

Name(s)	Title	Phone	State	E-mail Address

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 2a Network Systems – Facility Profile: Management & Capability - continued
 [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

4. State the types of information network facilities that your company operates at this location: <i>[Check all that apply]</i>	<input type="checkbox"/>	Long-haul switching	<input type="checkbox"/>	Undersea cable landing stations
	<input type="checkbox"/>	Long-haul transmission	<input type="checkbox"/>	Satellite Ground Stations
	<input type="checkbox"/>	Network Operations Center	<input type="checkbox"/>	Security Operations Center
	<input type="checkbox"/>	Data storage center	<input type="checkbox"/>	Other (<i>Describe below</i>)

Comments:

5. Identify the types of data and telecommunications services that your company provides at this location: <i>[Check all that apply]</i>	<input type="checkbox"/>	Analog Telephony/Time Division Multiplexing (TDM)	<input type="checkbox"/>	Cellular
	<input type="checkbox"/>	Voice Over Internet Protocol telephony	<input type="checkbox"/>	Wireless Internet
	<input type="checkbox"/>	Internet	<input type="checkbox"/>	Virtual Private Networks
	<input type="checkbox"/>	Optical transport/transmission	<input type="checkbox"/>	Data Centers
	<input type="checkbox"/>	Microwave transmission	<input type="checkbox"/>	Other (<i>Describe below</i>)
	<input type="checkbox"/>	Satellite transmission	<input type="checkbox"/>	Other (<i>Describe below</i>)

Comments:

6. Identify the types of transmission protocols that this facility is equipped to handle: <i>[Check all that apply]</i>	<input type="checkbox"/>	Multi-protocol Label Switching (MPLS)	<input type="checkbox"/>	Frame Relay (FR)	<input type="checkbox"/>	Optical Transport Network (OTN)
	<input type="checkbox"/>	Synchronous Optical Networking (SONET)	<input type="checkbox"/>	Internet Protocol (IP)	<input type="checkbox"/>	Other (<i>Describe below</i>)
	<input type="checkbox"/>	Synchronous Digital Hierarchy (SDH)	<input type="checkbox"/>	Dense wave division multiplexer (DWDM)	<input type="checkbox"/>	Other (<i>Describe below</i>)
	<input type="checkbox"/>	Asynchronous Transfer Mode (ATM)	<input type="checkbox"/>	Ethernet	<input type="checkbox"/>	Other (<i>Describe below</i>)

7. Describe all other capabilities of this facility:

8. This network facility is controlled by: <i>[Check one]</i>	<input type="checkbox"/>	My company as Facility Owner	<input type="checkbox"/>	My company as Facility Lessee	<input type="checkbox"/>	My Company as Facility Lessor	<input type="checkbox"/>	
	<input type="checkbox"/>	A partnership of U.S. companies	<input type="checkbox"/>	A partnership of U.S. and non-U.S. companies	<input type="checkbox"/>	A Non-U.S. company	<input type="checkbox"/>	Other (<i>Please explain below</i>)

Comments:

9. The persons operating this facility for my company are: <i>[Check all that apply]</i>	<input type="checkbox"/>	Company staff	<input type="checkbox"/>	Facility Owner Staff	<input type="checkbox"/>	Managed Service Provider	<input type="checkbox"/>	Other (Explain below)
	<input type="checkbox"/>	Contractor's Staff	<input type="checkbox"/>	Partner's Staff	<input type="checkbox"/>	Equipment Vendor	<input type="checkbox"/>	Other (Explain below)

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 2a		Network Systems – Facility Profile: Management & Capability - Continued [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]				
10. The operator of this Network facility: [Check all that apply]	<input type="checkbox"/>	Owns the network equipment in this building				
	<input type="checkbox"/>	Leases the network equipment in this building				
	<input type="checkbox"/>	Utilizes network equipment located at this facility that is provided by other carriers using this facility				
	<input type="checkbox"/>	Other [Please explain in the space provided below]				
Comments:						
11.a Are there other carriers at this facility that operate and/or maintain network equipment on this site that they own or lease. [Check]					<input type="checkbox"/> Yes	<input type="checkbox"/> No
If the response is "Yes" – Identify the carriers and the types of equipment						
Carrier Name		Type of Equipment		Comments		
11.b Identify all the carriers that you can connect with or peer with at this facility.						
Carrier Name		Carrier Name		Carrier Name		
12. The operator of this Network facility employs at this location: [Check all that apply]	<input type="checkbox"/>	U.S. citizens		Non-U.S. citizens with temporary visas		
	<input type="checkbox"/>	Persons holding green cards		Other (Explain below)		
Comments:						
13. Estimate, as a percentage, the current utilization level of this facility relative to total rated traffic capacity.				%	Note: If this is a co-location facility, skip Questions 13-15d; proceed to Question 16.	
14.a State the approximate amount of aggregate equipped capacity <u>entering</u> this facility. (Check only one box)	<input type="checkbox"/>	1-10 Gigabits per second		<input type="checkbox"/> >10-100 Gigabits per second		
	<input type="checkbox"/>	>100 – 1,000 Gigabits per second		<input type="checkbox"/> > 1 (1,000 Gb/s) – 10 Terabits per second		
	<input type="checkbox"/>	> 10 – 100 Terabits per second		<input type="checkbox"/> > 10 Terabits per second (>10,000 Gb/s)		
Comments:						
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act						

Section 2a

Network Systems – Facility Profile: Management & Capability - Continued
 [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

14.b State the approximate amount of aggregate equipped capacity <u>exiting</u> this facility. <i>(Check only one box)</i>	<input type="checkbox"/>	1-10 Gigabits per second	<input type="checkbox"/>	>10-100 Gigabits per second
	<input type="checkbox"/>	>100 – 1,000 Gigabits per second	<input type="checkbox"/>	> 1 (1,000 Gb/s) – 10 Terabits per second
	<input type="checkbox"/>	> 10 – 100 Terabits per second	<input type="checkbox"/>	> 10 Terabits per second (>10,000 Gb/s)

Equipped Capacity: When estimating the aggregate equipped capacity, add the physical bandwidth that is currently provisioned to carry traffic from all system in the facility. Example 1: Suppose the facility has a DWDM system that has a total capacity of 40 wavelengths, each operating at 10 Gb/s. The carrier has installed 10 wavelengths in the system and has equipped 6 wavelengths to carry traffic. The aggregate equipped capacity for this system is 6 x 10 Gb/s = 60 Gb/s. (counting only traffic exiting the facility). Example 2: Suppose the facility has a router with 4 ports each equipped to carry packets over an OC-192c link. The aggregate equipped capacity would be 4 x 10 Gb/s = 40 Gb/s. (counting only traffic exiting the facility).

14.c Estimate the current utilization level of this facility in terms of the percent of total rack unit capacity. %

Note: A "rack unit" or rack "U" is an EIA standard for rack-mount equipment. One "rack unit" is equal to 1.75" in height. Internal useable space in a rack is calculated by multiplying the total amount of Rack Units by 1.75". A 44U rack enclosure, for example, would have 77" of internal usable space (44 x 1.75). For Information technology applications, a half-rack typically refers to a unit that is 1U high and half the depth of a 4-post rack (e.g., a network switch, router, KVM switch, or server). This configuration enables two half-rack units can be mounted in 1U of space (e.g., a unit mounted on the front of the rack and a unit in the rear).

Comments:

15.a State the total square footage of space available at this facility for housing network operations equipment.	Total Square Feet	15.b For this facility, state the percent total square footage of space dedicated for housing network operations equipment that is now in use:	Percent of Space Utilization
	<input type="text"/>		<input type="text"/>
15.c State the total power rating at this facility for driving network equipment operations.	Kilowatts	15.d For this facility, state the percent of the total power rating for driving network equipment operations that is now in use:	Percent of Power Rating Utilization
	<input type="text"/>		<input type="text"/>

Comments:

16.a For fiber optic cable servicing this facility, state the portion your company leases from another carrier or fiber optic infrastructure supplier: %

16.b Identify the carriers/fiber optic infrastructure suppliers that provide your firm with capacity **at this facility**. If you do not lease fiber capacity, go to Question 17.

Fiber Cable Lessor/ Company Name	<input type="text"/>	Fiber Cable Lessor Company Name	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Comments:

17. State the year when this network facility last underwent a major modernization of network equipment:

18. In what year is this network facility likely to undergo its next major equipment modernization?

Comments:

19. Are there plans to move this network facility to another physical location in the next five years?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
20. Are there plans to close this network facility in the next five years?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 2b Network Systems - Facility Profile: Types of Organizations Served
 [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

1. Does this network facility connect directly to:	U.S. Government telecommunications lines?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	U.S. Government Data Centers?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
---	---	--------------------------	------------	--------------------------	-----------	-------------------------------	--------------------------	------------	--------------------------	-----------

	<i>Types of Customers</i>	<i>Types of Services Provided</i> [Check all that apply]						
		Analog & Digital Telephone	Domestic & International Long-Distance	Internet/VOIP Services	Dedicated Private Network Lines	Virtual Private Networks	DSL, Broadband (e.g. DSL, Triple-Play)	Other
2. Specify the types of commercial, industrial, institutional, or government organizations that this facility serves directly :	Commercial Customers							
	Chemical Manufacturers							
	Electric utilities – power distribution							
	Food Processors							
	Manufacturing facilities							
	Natural Gas Distributors							
	Pharmaceutical production plants							
	Power plants (fossil, nuclear)							
	Refineries							
	Transportation hubs (airports, rail)							
	Water distribution systems							
	U.S. Local & State Governments							
	Civilian Federal Government Offices							
	U.S. Department of Defense Organizations							
	U.S. Law Enforcement Agencies							
	Foreign Governments							

Comments:

3. State the percent of the network equipment installed in this facility that is:	%	Manufacturer Standard Product	%	Modified Manufacturer Standard Product	%	Custom-Built Product for this facility
--	---	-------------------------------	---	--	---	--

Comments:

Section 3a Network Systems – Facility Profile: Current Types of Installed Equipment - Backbone									
<i>[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]</i>									
1. For each type of network system listed in the left-hand column, identify the three most prevalent brands currently <i>installed in this network facility</i> ; 2) state number of rack units installed for each manufacturer; and 3) estimate the mean time to replacement (remaining service life). <i>[Check all that apply]</i>									
Network Devices – Backbone/Core	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Expected Replacement Year(s)		
							Brand		
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		#1	#2	#3
Ultra Long-Haul Dense Wave Division Multiplexer (DWDM) Terminal ¹									
Long-Haul Dense Wave Division Multiplexer Terminal ²									
Legacy Dense Wavelength Division Multiplexer (DWDM) Systems ³									
Coarse Wave Division Multiplexer <i>[Minimum wavelength spacing > 5 nm]</i>									
Reconfigurable optical Add-Drop multiplexer (ROADM)									
Hybrid DWDM Transport and Optical Cross Connect System									
Optical Amplification/Repeater System									
Intelligent Photonic Cross Connect (PXC)									
Wave Division Multiplexer Ethernet Transport Optical Cross Connect									
Automated Optical Patch Panel									
Fixed Add-Drop Multiplexer (OADM) <i>[Static optical ADM]</i>									
Optical Cross-Connect System (OXC)									
Digital Cross Connect System									
SONET/SDH/OTN Add-Drop Multiplexer <i>[Electrically grooms SONET/SDH/OTN channels]</i>									
Packet Optical Transport System (P-OTS) ⁴									
Comments:									
¹ Transmission capability of greater than 1,000 kilometers; maximum capacity of more than 8 wavelengths.									
² Maximum reach with optical amplification is 250 to 1,000 kilometers; maximum capacity of more than 8 wavelengths.									
³ Maximum capacity equal to or less than (<=) 8 wavelengths.									
⁴ Combines DWDM transmission, grooming, and switching with Layer 2 Carrier Ethernet and MPLS capabilities. Supports one or more packet layer protocols.									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Backbone									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
1. – <i>continued</i> For each type of network system listed in the left-hand column, 1) identify the three most prevalent brands currently <i>installed in this network facility</i> ; 2) state number of rack units installed for each manufacturer; and 3) estimate when these network systems are likely to be replaced. [Check all that apply]									
Network Devices – Backbone/Core - continued	#1 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	#2 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	#3 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	Expected Replacement Date (Year)		
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brand		
							#1	#2	#3
Multi-Service Provisioning Platform (MSPP)									
Free-space Optical Transmission <i>[link capacity >= 1 gigabit per second]</i>									
Microwave Transmission <i>[link capacity >= 622 megabits per second]</i>									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Backbone									
<i>[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]</i>									
1. – <i>continued</i> For each type of network system listed in the left-hand column, 1) identify the three most prevalent brands currently installed in this network facility ; 2) state number of rack units installed for each manufacturer; and 3) estimate when these network systems are likely to be replaced. <i>[Check all that apply]</i>									
Network Devices – Backbone/Core	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Expected Replacement Date (Year)		
							Brand	#1	#2
Link-Layer Transmission/Switching/ Aggregation Systems	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists				
Asynchronous Transfer Mode (ATM) Core Switch <i>[Total switching capacity >= 10 gigabits per second]</i>									
Frame Relay Switch <i>[Total switching capacity >= 10 gigabits per second]</i>									
Carrier Ethernet Services Router <i>[Supports ethernet services, e.g., E-Line, E-LAN, E-Tree]</i>									
Resilient Packet Ring (RPR) <i>[Or, equivalent technology]</i>									
Core Ethernet Aggregation and Switching									
Other <i>[Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]</i>									
Comments:									
Network Routing Systems							#1	#2	#3
Core Internet Protocol (IP)/ Multi-Protocol Label Switching (MPLS)									
Other <i>[Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]</i>									
Comments:									
Telephony Systems							#1	#2	#3
Class 5 Telephony Switch									
Tandem Switch									
Signal Transfer Point (STP)									
Primary Reference Source (PRS) – Stratum 1 (Cesium-based)									
Primary Reference Source (PRS) – Stratum 2 (Rubidium-, GPS-assisted)									
Comments:									

Section 3a - continued Network Systems – Facility Profile: Current Types of Installed Equipment - Aggregation

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

2. For each type of network system listed in the left-hand column, 1) identify the three most prevalent brands currently *installed in this network facility*; 2) state number of rack units installed for each manufacturer; and 3) estimate when these network systems are likely to be replaced.

[Check all that apply]

Network Devices – Aggregation/Metro Core	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Expected Replacement Date (Year)		
							Brand		
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		#1	#2	#3
Ultra Long-Haul Dense Wave Division Multiplexer (DWDM) Terminal ¹									
Long-Haul Dense Wave Division Multiplexer Terminal ²									
Legacy Dense Wavelength Division Multiplexer (DWDM) Systems ³									
Coarse Wave Division Multiplexer [Minimum wavelength spacing > 5 nanometers]									
Optical Amplification/Repeater System									
Reconfigurable optical Add-Drop multiplexer (ROADM)									
Hybrid DWDM Transport and Optical Cross Connect System.[e.g., Infinera]									
Intelligent Photonic Cross Connect (PXC)									
Automated Optical Patch Panel									
Fixed Add-Drop Multiplexer (OADM) [Static optical ADM]									
Optical Cross-Connect System (OXC)									
Digital Cross Connect System									
SONET/SDH/OTN Add-Drop Multiplexer [Electrically grooms SONET/SDH/OTN channels]									
Packet Optical Transport System (P-OTS) ⁴									

¹ Transmission capability of greater than 1,000 kilometers; maximum capacity of more than 8 wavelengths.

² Maximum reach with optical amplification is 250 to 1,000 kilometers; maximum capacity of more than 8 wavelengths.

³ Maximum capacity equal to or less than (<=) 8 wavelengths.

⁴ Combines DWDM transmission, grooming, and switching with Layer 2 Carrier Ethernet and MPLS capabilities. Supports one or more packet layer protocols.

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Aggregation									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
2. For each type of network system listed in the left-hand column, 1) identify the three most prevalent brands currently <i>installed in this network facility</i> ; 2) state number of rack units installed for each manufacturer; and 3) estimate when these network systems are likely to be replaced.									
[Check all that apply]									
Network Devices – Aggregation/ Metro Core – continued	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Expected Replacement Date (Year)		
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
							#1	#2	#3
Multi-Service Provisioning Platform (MSPP)									
Free-space Optical Transmission [link capacity >= 1 gigabit per second]									
Microwave Transmission [link capacity >= 622 mega bits per second]									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Aggregation									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
2. – continued For each type of network system listed in the left-hand column, 1) identify the three most prevalent brands currently installed in this network facility ; 2) state number of rack units installed for each manufacturer; and 3) estimate when these network systems are likely to be replaced. [Check all that apply]									
Network Devices – Aggregation/ Metro Core	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Expected Replacement Date (Year)		
Link-Layer Transmission/Switching/ Aggregation Systems	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
							#1	#2	#3
Asynchronous Transfer Mode (ATM) Core Switch [Total switching capacity >= 10 gigabits per second]									
Frame Relay Switch [Total switching capacity >= 10 gigabits per second]									
Carrier Ethernet Services Router [Supports ethernet services, e.g., E-Line, E-LAN, E-Tree]									
Resilient Packet Ring (RPR) [Or, equivalent technology]									
Core Ethernet Aggregation and Switching									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
Network Routing Systems							#1	#2	#3
Core Internet Protocol (IP)/ Multi-Protocol Label Switching (MPLS)									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
Telephony Systems							#1	#2	#3
Class 5 Telephony Switch* (See definition)									
Tandem Switch									
Signal Transfer Point (STP)									
Primary Reference Source (PRS) – Stratum 1 (Cesium-based)									
Primary Reference Source (PRS) – Stratum 2 (Rubidium-, GPS-assisted)									

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 3a - continued		Network Systems – Facility Profile: Current Types of Installed Equipment - Backbone							
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
3. Starting with the most recent equipment purchase and working backwards, 1) identify by system type the equipment brands <i>installed in this network facility in the last three years</i> ; 2) state the number of rack units installed; and 3) estimate the service lifetime (in years). <i>[Check all that apply]</i>									
Network Devices – Backbone/Core	#1 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	#2 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	#3 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	Estimated Service Life (Years)		
	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
#1							#2	#3	
Ultra Long-Haul Dense Wave Division Multiplexer (DWDM) Terminal ¹									
Long-Haul Dense Wave Division Multiplexer Terminal ²									
Legacy Dense Wavelength Division Multiplexer (DWDM) Systems ³									
Coarse Wave Division Multiplexer <i>[Minimum wavelength spacing > 5 nm]</i>									
Reconfigurable optical Add-Drop multiplexer (ROADM)									
Hybrid DWDM Transport and Optical Cross Connect System									
Optical Amplification/Repeater System									
Intelligent Photonic Cross Connect (PXC)									
Wave Division Multiplexer Ethernet Transport Optical Cross Connect									
Automated Optical Patch Panel									
Fixed Add-Drop Multiplexer (OADM) <i>[Static optical ADM]</i>									
Optical Cross-Connect System (OXC)									
Digital Cross Connect System									
SONET/SDH/OTN Add-Drop Multiplexer <i>[Electrically grooms SONET/SDH/OTN channels]</i>									
Packet Optical Transport System (P-OTS) ⁴									
Comments:									
¹ Transmission capability of greater than 1,000 kilometers; maximum capacity of more than 8 wavelengths. ² Maximum reach with optical amplification is 250 to 1,000 kilometers; maximum capacity of more than 8 wavelengths. ³ Maximum capacity equal to or less than (<=) 8 wavelengths. ⁴ Combines DWDM transmission, grooming, and switching with Layer 2 Carrier Ethernet and MPLS capabilities. Supports one or more packet layer protocols.									

Section 3a - continued Network Systems – Facility Profile: Current Types of Installed Equipment - Backbone

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

3. – continued Starting with the most recent equipment purchase and working backwards, 1) identify by system type the equipment brands *installed in this network facility in the last three years*; 2) state the number of rack units installed; and 3) estimate the service lifetime (in years).

[Check all that apply]

Network Devices – Backbone/Core - continued	#1 Brand/ Manufacturer	Quantity Installed <small>[Rack Units]</small>	#2 Brand/ Manufacturer	Quantity Installed <small>[Rack Units]</small>	#3 Brand/ Manufacturer	Quantity Installed <small>[Rack Units]</small>	Estimated Service Life (Years)		
							#1	#2	#3
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
Multi-Service Provisioning Platform (MSPP)									
Free-space Optical Transmission <small>[link capacity >= 1 gigabit per second]</small>									
Microwave Transmission <small>[link capacity >= 622 megabits per second]</small>									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Backbone									
<i>[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]</i>									
3. – continued Starting with the <u>most recent equipment purchase</u> and working backwards, 1) identify by system type the equipment brands <i>installed in this network facility in the last three years</i> ; 2) state the number of rack units installed; and 3) estimate the service lifetime (in years). <i>[Check all that apply]</i>									
Network Devices – Backbone/Core	#1 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	#2 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	#3 Brand/ Manufacturer	Quantity Installed <i>[Rack Units]</i>	Estimated Service Life (Years)		
Link-Layer Transmission/Switching/ Aggregation Systems	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
							#1	#2	#3
Asynchronous Transfer Mode (ATM) Core Switch <i>[Total switching capacity >= 10 gigabits per second]</i>									
Frame Relay Switch <i>[Total switching capacity >= 10 gigabits per second]</i>									
Carrier Ethernet Services Router <i>[Supports ethernet services, e.g., E-Line, E-LAN, E-Tree]</i>									
Resilient Packet Ring (RPR) <i>[Or, equivalent technology]</i>									
Core Ethernet Aggregation and Switching									
Other <i>[Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]</i>									
Comments:									
Network Routing Systems							#1	#2	#3
Core Internet Protocol (IP)/ Multi-Protocol Label Switching (MPLS)									
Other <i>[Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]</i>									
Comments:									
Telephony Systems							#1	#2	#3
Class 5 Telephony Switch									
Tandem Switch									
Signal Transfer Point (STP)									
Primary Reference Source (PRS) – Stratum 1 (Cesium-based)									
Primary Reference Source (PRS) – Stratum 2 (Rubidium-, GPS-assisted)									
Comments:									

Section 3a - continued **Network Systems – Facility Profile: Current Types of Installed Equipment - Aggregation**

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

4. Starting with the most recent equipment purchase and working backwards, 1) identify by system type the equipment brands **installed in this network facility in the last three years**; 2) state the number of rack units installed; and 3) estimate the service lifetime (in years).

[Check all that apply]

Network Devices – Aggregation/Metro Core	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Estimated Service Life (Years)		
							#1	#2	#3
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
Ultra Long-Haul Dense Wave Division Multiplexer (DWDM) Terminal ¹									
Long-Haul Dense Wave Division Multiplexer Terminal ²									
Legacy Dense Wavelength Division Multiplexer (DWDM) Systems ³									
Coarse Wave Division Multiplexer [Minimum wavelength spacing > 5 nanometers]									
Optical Amplification/Repeater System									
Reconfigurable optical Add-Drop multiplexer (ROADM)									
Hybrid DWDM Transport and Optical Cross Connect System.[e.g., Infinera]									
Intelligent Photonic Cross Connect (PXC)									
Automated Optical Patch Panel									
Fixed Add-Drop Multiplexer (OADM) [Static optical ADM]									
Optical Cross-Connect System (OXC)									
Digital Cross Connect System									
SONET/SDH/OTN Add-Drop Multiplexer [Electrically grooms SONET/SDH/OTN channels]									
Packet Optical Transport System (P-OTS) ⁴									

¹ Transmission capability of greater than 1,000 kilometers; maximum capacity of more than 8 wavelengths.

² Maximum reach with optical amplification is 250 to 1,000 kilometers; maximum capacity of more than 8 wavelengths.

³ Maximum capacity equal to or less than (<=) 8 wavelengths.

⁴ Combines DWDM transmission, grooming, and switching with Layer 2 Carrier Ethernet and MPLS capabilities. Supports one or more packet layer protocols.

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Aggregation									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
4. Starting with the most recent equipment purchase and working backwards, 1) identify by system type the equipment brands <i>installed in this network facility in the last three years</i> ; 2) state the number of rack units installed; and 3) estimate the service lifetime (in years). [Check all that apply]									
Network Devices – Aggregation/ Metro Core – continued	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Estimated Service Life (Years)		
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		Brands		
							#1	#2	#3
Multi-Service Provisioning Platform (MSPP)									
Free-space Optical Transmission [link capacity >= 1 gigabit per second]									
Microwave Transmission [link capacity >= 622 mega bits per second]									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act									

Section 3a - continued									
Network Systems – Facility Profile: Current Types of Installed Equipment - Aggregation									
[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]									
4. – continued Starting with the <u>most recent equipment purchase</u> and working backwards, 1) identify by system type the equipment brands installed in this network facility in the last three years ; 2) state the number of rack units installed; and 3) estimate the service lifetime (in years). [Check all that apply]									
Network Devices – Aggregation/ Metro Core	#1 Brand/ Manufacturer	Quantity Installed [Rack Units]	#2 Brand/ Manufacturer	Quantity Installed [Rack Units]	#3 Brand/ Manufacturer	Quantity Installed [Rack Units]	Estimated Service Life (Years)		
Link-Layer Transmission/Switching/ Aggregation Systems	Drop-Down Lists		Drop-Down Lists		Drop-Down Lists		#1	#2	#3
Asynchronous Transfer Mode (ATM) Core Switch [Total switching capacity >= 10 gigabits per second]									
Frame Relay Switch [Total switching capacity >= 10 gigabits per second]									
Carrier Ethernet Services Router [Supports ethernet services, e.g., E-Line, E-LAN, E-Tree]									
Resilient Packet Ring (RPR) [Or, equivalent technology]									
Core Ethernet Aggregation and Switching									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
Network Routing Systems							#1	#2	#3
Core Internet Protocol (IP)/ Multi-Protocol Label Switching (MPLS)									
Other [Describe optical systems not listed that groom/switch/transport traffic at > 10 gigabits per second.]									
Comments:									
Telephony Systems							#1	#2	#3
Class 5 Telephony Switch* (See definition)									
Tandem Switch									
Signal Transfer Point (STP)									
Primary Reference Source (PRS) – Stratum 1 (Cesium-based)									
Primary Reference Source (PRS) – Stratum 2 (Rubidium-, GPS-assisted)									

Section 3a Network Systems – Facility Profile: Capital Equipment Acquisition – Replacement Cycles

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

5. State the replacement cycle for major systems at this network facility location:	- <12 months	- 13-24 months	- 25-26 months
	- 37-48 months	- 49-60 months	- > 60 months

Comments:

6.a Is your company likely to purchase the same brands of equipment when it refits/modernizes this facility? Yes No

6.b Identify the top five reasons that would cause you to purchase another brand for each type of equipment listed. [Check only five categories]

Device Type	Explanation for Switching Brands of Network Equipment									
	Equipment not readily available; can not meet delivery schedule.	Equipment company can not meet new performance	Equipment company's products are not sufficiently reliable	Equipment company's products are not sufficiently secure	Equip. Mfg.'s products not cost competitive [Excluding finance-related]	Equipment company's enabling software programs are	Equipment company's technical support is inadequate	Competitors offer better financing packages	Other	Not likely to shift equipment brand
Optical/ Transmission and Layer 1 – Switching, Grooming, Aggregation										
Link-Layer Transmission/Switching/Aggregation Systems										
Network Routing Systems										
Telephony Systems										

Comments:

BUSINESS CONFIDENTIAL – Per Section 705(d) of the Defense Production Act

Section 3b Network Systems – Facility Profile: Current Modes for Updating Equipment Software [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]										
1. State the circumstances for which software/firmware is updated, upgraded, or patched on network systems in this facility – to: <i>[Check all that apply]</i>	<input type="checkbox"/>	Provide new services	<input type="checkbox"/>	Fix a malfunction or bug observed in the system						
	<input type="checkbox"/>	Provide new security features	<input type="checkbox"/>	Perform an upgrade recommended by the system manufacturer						
	<input type="checkbox"/>	Upgrade systems as part of a service or maintenance contract	<input type="checkbox"/>	Other [Explain in the space provided below.]						
Comments:										
2. Using a scale of 1-5 (zero meaning not at all; one being least frequent, and 5 most frequent) rank the methods that are most often used to update network devices installed in this facility:	<input type="checkbox"/>	Remote access to the device from the operator's network operations or maintenance center located within the United States	<input type="checkbox"/>	Remote access to the device from the operator's network operations or maintenance center located outside of the United States						
	<input type="checkbox"/>	Remote access to the device from another location within the United States owned by the network operator	<input type="checkbox"/>	Remote access to the device from another location outside the United States owned by the network operator						
	<input type="checkbox"/>	Remote access to the device from a third-party facility (such as a system vendor or maintenance contractor) located within the United States	<input type="checkbox"/>	Remote access to the device from a third-party facility (such as a system vendor or maintenance contractor) located outside of the United States						
	<input type="checkbox"/>	Physical (local) access to the systems from their installed locations	<input type="checkbox"/>	Other [Explain in the space provided below.]						
Comments:										
3. The updating of device/system software is initiated at this facility by the: <i>[Check all that apply]</i>	<input type="checkbox"/>	Network operator – Company employee from a corporate location	<input type="checkbox"/>	Employees at this facility						
	<input type="checkbox"/>	Corporate network management system via automatic download	<input type="checkbox"/>							
	<input type="checkbox"/>	U.S.-Based Maintenance contractor	<input type="checkbox"/>	Non-U.S.-Based Maintenance Contractor						
	<input type="checkbox"/>	System manufacturer/vendor	<input type="checkbox"/>	Other [If "Other Parties", explain in the space provided below.]						
Comments:										
4. Software on devices/systems installed in this facility are patched/upgraded at least once every: <i>[Check appropriate box]</i>	<input type="checkbox"/>	Daily	<input type="checkbox"/>	Weekly	<input type="checkbox"/>	Semi-annually	<input type="checkbox"/>	Yearly		
	<input type="checkbox"/>	Monthly	<input type="checkbox"/>	Quarterly	<input type="checkbox"/>	Never upgraded since installation				
5. Does your company have written procedures governing how software installations are implemented for network devices critical the operation of this facility?							<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Comments:										
6. Describe (in the space provided below) your company's procedures for assuring that software updates of network devices critical to the operation of this facility are performed securely.										
Comments:										

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Section 3b - continued **Network Systems – Facility Profile: Current Modes for Updating Equipment Software**
 [Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

7. For systems operating in your network, indicate whether your organization requests, performs, or participates the following forms of on-line, low-level software debugging: [Check all that apply]	<input type="checkbox"/>	File system analysis	<input type="checkbox"/>	Memory analysis
	<input type="checkbox"/>	Running firmware analysis	<input type="checkbox"/>	Manual firmware patching/modification
	<input type="checkbox"/>	Operating system modification	<input type="checkbox"/>	None at all

Comments:

8a. Low-level debugging on this facility's network systems is typically performed : [Check one box only]	<input type="checkbox"/>	On site	<input type="checkbox"/>	Remotely	<input type="checkbox"/>	Both
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8b. Low-level debugging on this facility's network systems is typically performed by: [Check all that apply]	<input type="checkbox"/>	Maintenance and technical personnel employed by the network operator
	<input type="checkbox"/>	Maintenance and technical personnel employed by the OEM system manufacturer/OEM- authorized vendor
	<input type="checkbox"/>	Maintenance and technical personnel working for a third-party contractor
	<input type="checkbox"/>	Other [If "Other Parties", explain in the space provided below.]

Comments:

9. Identify the circumstances that prompt the need to perform low-level debugging on carrier operating equipment: [Check all that apply]	<input type="checkbox"/>	Equipment upgrade/Patch Required	<input type="checkbox"/>	Malware suspected
	<input type="checkbox"/>	Equipment malfunction diagnostics and repair	<input type="checkbox"/>	Debugging performed at the request of another party (vendor, audit firm, etc.)
	<input type="checkbox"/>	Security breach vulnerability suspected	<input type="checkbox"/>	Other [Explain in the space provided below.]

Comments:

10. Identify by checking the appropriate boxes 1) the types Operational Support Systems* (OSS) equipment/software that your company utilizes for the operation of network systems at this facility; 2) Identify by checking the appropriate box whether this function is performed internally by company employees, or third-party contractors. If it is a third-party supplier, provide contractor/manufacturer(s) names; and the names of the systems/products employed.

Type of Support System	Internal-Carrier System	Third-Party Contractor(s)	Product Brand Name
On Site Support	Internal-Carrier System	Drop-Down List	
Parts and Repair Management	Internal-Carrier System		
Remote Management	Internal-Carrier System		
Service Level Agreements	Internal-Carrier System		
Technical Support (24x7)	Internal-Carrier System		
Other	Internal-Carrier System		
Other	Internal-Carrier System		

Comments:

FOR USG REVIEW – Incomplete Universe of Operational Support System (OSS) vendors to appear in Drop-Down Boxes

ADC Telecommunications, Inc.	Eftia OSS Solutions, Inc.	Netcracker Technology Corp.	Telcordia Technologies, Inc.		
Accenture	Ericsson AB	Nokia Corp.	Tertio Telecoms, Ltd.		
Agilent	Formula Telecom Solutions, Ltd.	Nokia Siemens	Tibco Software, Inc.		
Alcatel	Glimmerglass	Nortel Networks Corp.	TTI Team Telecom International		
	Granite Systems, Inc.		Ultrapower		
Amdocs	Guoxin Lucent	Opennet Telecom, Inc.	Vitria Technology, Inc.		
Axiom systems	Hewlett-Packard Co.	Oracle	WebMethods, Inc.		
BEA Systems, Inc.	Horsebridge	Portal Software, Inc.			
Bridgewater Systems Corp.	Huawei	Remedy Corp.	ZTEsoft		
Bright Ocean	IBM Corp.				
CENX	Ilog, Inc.	SAP			
Ciena	Infovista SA				
Cisco Systems, Inc.	Intec Telecom Systems plc	Sheer Networks, Inc.			
Comptel Corp.	JabobsRimell Ltd.	Siebel Systems, Inc.			
Comverse, Inc.	Langchao LG	Spirent plc			
Connexn Technologies, Inc.	Lianchuang	Sun Mirosystems, Inc.			
Convergys Corp.	LM Ericsson	Subex Azure Ltd.			
Cramer Systems Ltd.	Lucent Technologies, Inc.	Syndesis Ltd.			
CST Systems Int'l, Inc.	MetaSolv Software, Inc.				
Daleen Technologies, Inc.	Micromuse, Inc.				
Datang	Motorola, Inc.				
	MetarNet				
	MRV Communications				

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Section 4 Network Systems – Facility Profile: Counterfeit Network Systems, Subsystems, and Components				
<i>[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]</i>				
1. Does your company have procedures in place to check equipment entering this facility to determine whether it is counterfeit, or contains counterfeit components?		Yes		No
2. Does your company maintain records of parts and systems that are suspected/confirmed to be counterfeit?		Yes		No
Comments:				
3. Does your company/organization report suspected/confirmed counterfeits parts and systems to federal authorities?		Yes		No
4. Does your company know what federal authorities to contact regarding suspected/confirmed counterfeits parts and systems?		Yes		No
Comments:				
5. Has your company had its custom-made electronic network devices cloned and sold in the marketplace?		Yes	No	Not Applicable
Comments:				
6. In the last five years, has your company seen genuine versions of its custom-made electronic network devices being sold in the marketplace without your authorization?		Yes	No	Not Applicable
Comments:				
7. Has your company detected contract manufacturers producing significant part overruns of custom electronic network devices beyond the specified levels ordered by your company?		Yes	No	Not Applicable
8. Does your company have written procedures in place to prevent unauthorized production overruns of its custom electronic network devices by contract manufacturers?				
9. Does your company prescribe in writing how “manufacturing seconds” and defective production units of its custom electronic network devices are to be destroyed?				
Comments:				
10. Do you use written procedures at this network facility to verify that the network systems and replacement parts installed in the facility are genuine parts authorized by the original equipment manufacturer?		Yes		No
Comments:				
11. Are personnel at this network facility trained to detect counterfeit electronic systems, components?		Yes		No
Comments:				
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Section 5

Network Systems – Facility Profile: Security Assurance – Network Operations & Anomalies

[Answer ALL questions – Surveys With Blank Responses Will Be Returned For Completion]

1. Identify the types of equipment installed in this facility that you test to ensure that it has not been compromised and remains secure:	<input type="checkbox"/>	Network management systems	<input type="checkbox"/>	Network security devices	<input type="checkbox"/>	Optical transport systems						
	<input type="checkbox"/>	Routers	<input type="checkbox"/>	Switches	<input type="checkbox"/>	File servers						
	<input type="checkbox"/>	Virtual private network servers	<input type="checkbox"/>	Other	<input type="checkbox"/>							
2. For each of years 2007-2010, state the number of times your company has detected unauthorized electronic hardware connected to this facility:				2007		2008		2009		2010		
Comments:												
3. Was the affected equipment installed in place of recommended Original Equipment Manufacturer systems by: [Check all that apply]	<input type="checkbox"/>	Company staff	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Unknown party	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
	<input type="checkbox"/>	Company contractor	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Other [Explain below]	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Comments:												
4. For this facility, state where your company keeps records of: suspected /confirmed network components with undocumented functionality; and/or odd network behavior: [Check appropriate boxes]	<input type="checkbox"/>	This facility	<input type="checkbox"/>	Network Oper. Center	<input type="checkbox"/>	No records kept						
	<input type="checkbox"/>	Corporate offices	<input type="checkbox"/>	Security Oper. Center	<input type="checkbox"/>	Other						
5. For each of years 2007-2010, state the number of times your staff has detected undocumented functionality in network hardware and software at this facility that would enable: the mirroring, manipulation, or redirection of data transmissions?	Year		2007		2008		2009		2010			
	<i>Function</i>		<i>Hardware</i>	<i>Software</i>	<i>Hardware</i>	<i>Software</i>	<i>Hardware</i>	<i>Software</i>	<i>Hardware</i>	<i>Software</i>		
	Data Mirroring											
	Data Manipulation											
	Data Redirection											
	Denial of Service											
Other (Explain below)												
Comments:												
6. Does your company/organization report events of suspicious equipment behavior at this facility to federal authorities? [Check]	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No								
Comments:												
7. State the frequency with which your company/ organization actively compiles formal analyses of cyber intrusion activity at this facility: [Check]	<input type="checkbox"/>	Daily	<input type="checkbox"/>	Bi-Weekly	<input type="checkbox"/>	Yearly						
	<input type="checkbox"/>	Weekly	<input type="checkbox"/>	Monthly	<input type="checkbox"/>	Not at all						
Comments:												
8. State whether this facility can self-initiate on-site scanning for Malware on the following types of equipment and systems; or indicate whether this scanning function can only be initiated at the corporate level: [Check appropriate boxes]	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Corporate	Optical transmission and switching equipment					
	<input type="checkbox"/>						Link-layer transmission/switching/aggregation systems					
	<input type="checkbox"/>						Network routing systems					
	<input type="checkbox"/>						Telephony systems					
	<input type="checkbox"/>						Wireless systems					
	<input type="checkbox"/>						On-site PCs, terminals, workstations & servers that manage network equipment					
	<input type="checkbox"/>											
9. State the frequency for which scans for Malware are conducted on equipment and systems located at this facility: [Check as appropriate]	Malware				Unauthorized Software Upgrades/Patches							
	<input type="checkbox"/>	Continuously (automated in real time)			<input type="checkbox"/>	Continuously (automated in real time)						
	<input type="checkbox"/>	Daily	<input type="checkbox"/>	Weekly	<input type="checkbox"/>	Daily	<input type="checkbox"/>	Weekly				
	<input type="checkbox"/>	Yearly	<input type="checkbox"/>	Only when Malware is suspected	<input type="checkbox"/>	Yearly	<input type="checkbox"/>	Only when Malware is suspected				
	<input type="checkbox"/>	Never	<input type="checkbox"/>	Other	<input type="checkbox"/>	Never	<input type="checkbox"/>	Other				
Comments:												

Section 6**Certification**

The undersigned certifies that the information herein supplied in response to this questionnaire is complete and correct to the best of his/her knowledge. It is a criminal offense to willfully make a false statement or representation to any department or agency of the United States Government as to any matter within its jurisdiction. (18 U.S.C.A. 1001 (1984 & SUPP. 1197))

Company Name					
Company's Internet Address					
Name of Authorizing Official					
Title of Authorizing Official					
E-mail Address					
Phone Number and Extension					
Date Certified					
<i>If POC is different than above-named, include below.</i>					
Point of Contact Name					
Title of Point of Contact					
E-mail Address					
Phone Number and Extension					
Would you like a free copy of the final report?					
	<table border="1"> <tr> <td>Yes</td> <td></td> </tr> <tr> <td>No</td> <td></td> </tr> </table>	Yes		No	
Yes					
No					

Section 7**Comments (optional)**

In the box below, please provide any additional comments, or any other information, regarding your experience with domestic and Non-U.S. network system equipment information network equipment and/or services utilized in network systems in the United States and its territories; counterfeit products; or other related issues.

Comments:

Section 8**Transmission Instructions For Completed Survey**

Please adhere to the following instructions in preparing your completed survey to our office:

1. **Save** your completed survey in **Microsoft EXCEL 1997-2003 format**. **Make a back-up copy** for your corporate records.
2. Upload your completed survey to the following BIS website: www.infonetworksurveysubmissions@bis.doc.gov

Please approximate how many hours it took to complete this U.S. Information Network Infrastructure survey.

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