

H44275

HUGHES NETWORK SYSTEMS, LLC

11717 Exploration Lane
Germantown, MD 20876

SOLUTION TO TEXAS DIR

Request for Offer
DIR-TEX-AN-NG-001

Services Offered/Management Plan

January 2011

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Acronyms and Definitions

Acronym	Definition
ACL	Access Control List
ACM	Adaptive Coding and Modulation
AES	Advanced Encryption Standard
AGWs	Access Gateways
B2B	Business-to-Business
B2C	Business-to-Customer
BI	Basic Internet
BoD	Bandwidth-on-Demand
CCB	Change Control Board
CCR	Configuration Change Request
CIR	Committed Information Rates
CO	Central Office
CPE	Customer Premises Equipment
CTSA	Communications Technology Services Agreement
DDR	Data Delivery Ratio
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
DVB-	Digital Video Broadcasting
FDMA	Frequency Division Multiple Access
HVUL	High Volume Uplink
ICMP	Internet Control Message Protocol
IDSL	ISDN Digital Subscriber Line
IDU	Indoor Unit
IGMP	Internet Group Management Protocol
IKE	Internet Key Exchange
IPGW	Internet Protocol Gateways
MCS	Multi Casting System
MRTG	Multi-Router Traffic Grapher
MTBF	Mean Time Between Failures
MTTR	Mean Time to Repair
NAT	Network Address Translation
NLV	North Las Vegas
NOC	Network Operations Center
ODU	Outdoor Unit
OPN	Optimized Network
PAT	Port Address Translation
PCI	Payment Card Industry
PEP	Performance Enhancement Proxy
QoS	Quality of Service
SAM	Security Access Module
SDSL	Synchronous Digital Subscriber Line
SLA	Service Level Agreement
SNMP	Simple Network Management Protocol
SOW	Statement of Work

Acronym	Definition
TCP	Transmission Control Protocol
TDMA	Time Division Multiple Access
TT&C	Telemetry and Tracking Center
TWT	Traveling Wave Tube
UDP	User Datagram Protocol
USF	Universal Service Fund
VADB	Virtual Automatic Dial Backup
VLAN	Virtual Local Area Network
VPN	Virtual Private Network
VRRP	Virtual Router Redundancy Protocol

1.0 SERVICES OFFERED

Hughes will meet the Service Requirements at competitive pricing with measurable, reliable, and predictable delivery. This will be accomplished through two Service offerings:

- Small Office/Home Office Internet Service: delivered via HughesNet® Business Internet
- Fixed Satellite Services: delivered via private network services using Hughes Services based on either the Hughes HX platform or the Hughes HN9500 SPACEWAY® 3 platform

1.1 HUGHES' NOC LOCATIONS

Hughes' services are provided via its Network Operations Center (NOC) located in North Las Vegas Nevada (NLV). The NOC facility is a state-of-the-art telecommunications center from which Hughes monitors, manages, and controls its broadband services. The NOC is staffed by Hughes technicians 24 hours a day, 7 days a week, and 365 days a year. The facility is a carrier-class site employing extensive backup systems to allow for extended, self-contained operation. Using both proprietary and industry-standard tools, the Hughes NOC continually monitor all enterprise customer networks for any signs of nonconformance.

1.1.1 Hughes' NLV NOC Specifications

- Satellite Uplinks:
 - Two 7.6 m antennas reserved for AMC-9 and IA-8
 - Two 6.1 m antennas on AMC-4 and Galaxy-11
 - 4.6 m antenna on AMC-3
 - Two 3.7 m antennas for SPACEWAY 3
- Backhaul Services:
 - Gig-Es
 - OC3s
 - DS3s
 - One external and one internal SONET ring with dual access points
 - Additional future SONET ring with dual access points
- Critical Power:
 - Power company provides feeders from one substation to two 1250 kVa transformers that serve two 1600 A switchboards.
- UPS:
 - Four 300 kVa UPS systems distribute power under the floor via six 225 A power panels.
- Generator:
 - 1250 kW diesel generator with a 2000-gallon fuel storage that supports generator operations for 24 hours at full load.

- HVAC:
 - Eight 30 ton packaged, air cooled stand-alone units provide conditioned air to the entire raised floor space. All units are backed up by the generator service.
- Security System:
 - Eighteen cameras monitoring the Hughes premises, card access system at every entry point, and infrared motion activated system.



Figure 1-1. Hughes' North Las Vegas NOC

1.1.2 Hughes' NLV NOC Physical Address

Hughes Network Systems
One Aerojet Way, Suite 200
North Las Vegas, NV 89030

NPA/NXX 702-642
Main NOC Phone Number: 800 822 2209
Local number, if needed for ordering circuits: 702-642-0541

1.2 SERVICE OFFERING

1.2.1 Satellite Business Internet

Hughes Satellite Business Internet plans provide high availability, high-speed, always-on connections that give the Customer instant access to the Internet. Hughes has developed a robust suite of new Internet access plans specifically tailored to business and government agencies. With its advanced satellite technology, the Hughes service delivers a reliable broadband connection around the clock. And since Hughes delivers high-speed Internet over satellite, the user can work online and have their phone or fax line available. Hughes utilizes two-way satellite technology to link users' computers to the Internet. A certified HughesNet installer will connect the user's computer to the satellite modem and link it to the satellite antenna that is typically mounted on the roof of the home or small office. The satellite antenna sends and receives information (for example; email, point-of-sale, Web pages, files) over the Internet and

delivers it to user’s computer almost instantly. There are seven Hughes Business Internet plans to choose from, depending upon the user’s business needs, with download speeds up to 25 Mbps.

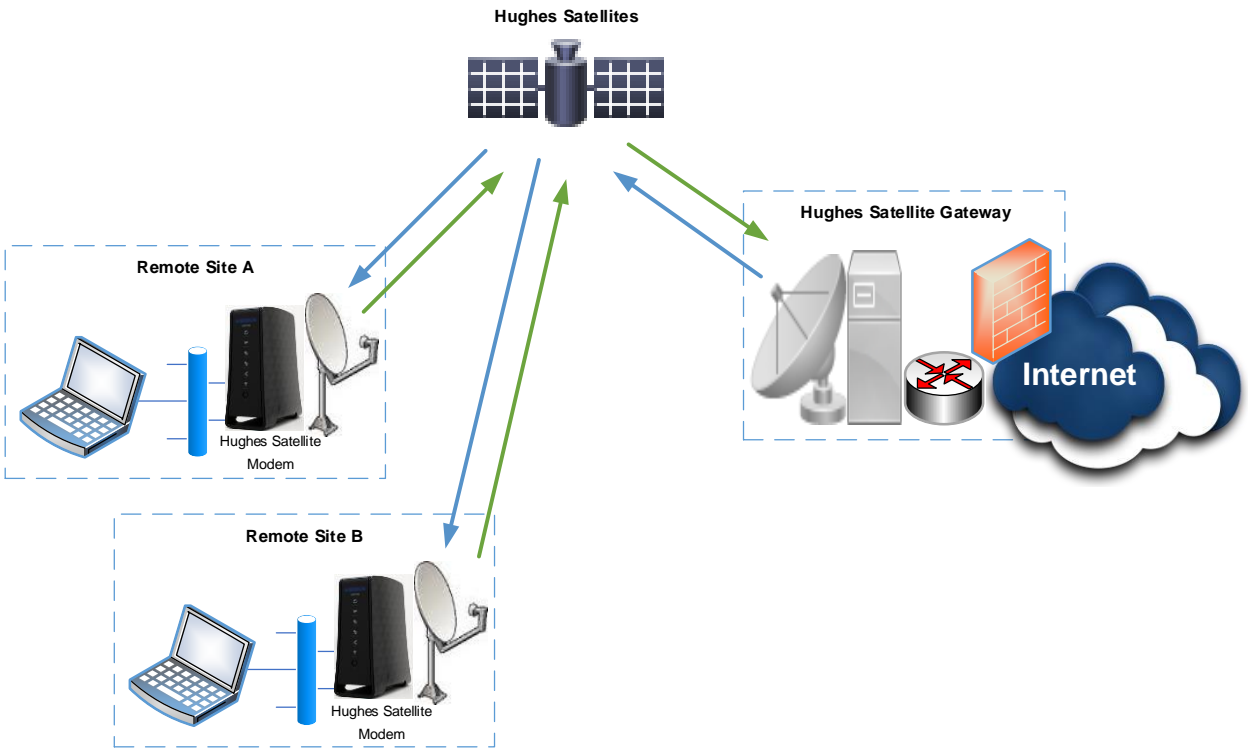


Figure 1-2. Business Internet Network Topology

1.2.1.1 Hardware

The hardware for Hughes’ Business Internet Service consists of an outdoor unit, an antenna, and an indoor unit, which is a high-performance satellite modem designed to provide high-speed access that has the flexibility to handle complex government networking requirements. The satellite modem receives and transmits data over the Ka-band satellite and receives the traffic at the Hughes Satellite Gateway. IP data packets are passed to and from any IP device on the LAN port of the satellite modem, and have much of the functionality of an IP router such as static and dynamic addressing, DHCP server or relay, DNS caching, and more.

1.2.1.2 Service Plans

HughesNet offers multiple Internet Access plans with upload speeds up to 3 Mbps and download speeds up to 25 Mbps.

HughesNet Gen5 Plans	Business 35	Business 50	Business 75	Business 100	Business 150	Business 200	Business 250	Business 300	Business 350	Business 400	Business 450	Business 500	Business 550
Anytime Data	10 GB	25 GB	50 GB	75 GB	100 GB	150 GB	200 GB	250 GB	300 GB	350 GB	400 GB	450 GB	500 GB
Business Data (8AM to 6PM)	25 GB	25 GB	25 GB	25 GB	50 GB	50 GB	50 GB	50 GB	50 GB	50 GB	50 GB	50 GB	50 GB
Total Data	35 GB	50 GB	75 GB	100 GB	150 GB	200 GB	250 GB	300 GB	350 GB	400 GB	450 GB	500 GB	550 GB

Gen5 Data Tokens	1 GB	2 GB	3 GB	5 GB	10 GB	20 GB	25 GB	30 GB	40 GB	50 GB
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Maintenance Plans	Next Business Day (8am-5pm)	Next Calendar Day (8am-5pm)	Same Day (12/7)	Same Day (24/7)
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1.2.1.3 Installation

A certified Hughes installer will install the Hughes hardware at the Customer site and will also activate the service at the same time.

1.2.2 Fixed Satellite Service

Hughes Fixed Satellite Services can be categorized as:

- HX service (dedicated bandwidth)
- Access Continuity (AC) (backup service to provide continuity of operations during loss of primary network)
- Transportable or re - deployable (Internet access via transportable satellite terminals)
- S-plan (subscription service)
- D-plan (fully meshed network [dedicated or subscription service])

Hughes will be responsible for obtaining and maintaining all related licenses necessary.

Hughes HX Services is a fixed bandwidth Satellite Service in which the Customer will be guaranteed full access to that bandwidth capacity. However, Hughes also offers several other subscription services that can also carry the Customer's mission-critical data, voice, and video.

Constant Bit Rate (CBR) provides on-demand, point-to-point connectivity between any two sites in a network using the HN9500 satellite platform. The Customer can get the benefits of a high QoS dedicated link without the need to lock up the bandwidth 24x7. When the service is in use, the bandwidth is fully dedicated to the site and not shared with anyone else.

The CBR feature allows a remote to transmit in 32 kbps increments from 64 kbps up to 1.5 Mbps and is intended for voice, video or streaming data applications.

Since CBR augments an S-plan or D-plan network, Hughes allows the users to define the specific traffic that will transmit using CBR. Otherwise, all traffic will adhere to the speeds and constraints of the underlying S- or D-plan. For each CBR connection, the sites will be billed by the minute, and minutes can be purchased in bundles to accommodate larger networks. Unused minutes will not carry over from one month to the next.

1.2.3 Implementation

Hughes will provide its standard order intervals and any additional charges associated with non-standard intervals. Hughes will install at least 90% of all locations released for a standard commercial installation within 30 calendar days of release of the order. The Customer may request an expedited installation for sites with less than 14 days of lead time, and additional charges will apply.

Hughes services offer:

- DVB-2
- ACM
- PCI
- IPOS
- Static and dynamic addressing
- DHCP server or relay
- DNS caching
- RIPV1, RIPV2, BGP routing support
- Multicasts to and from the LAN by using IGMP
- NAT/PAT
- VRRP
- VLAN tagging (end-to-end)
- Firewall support through integrated access control lists

Hughes Fixed Satellite Services can be categorized as:

- HX service (dedicated bandwidth)
- AC (backup service to provide continuity of operations during loss of primary network)
- S-plan (subscription service)
- D-plan—Fully meshed network (dedicated or subscription service)

HX Service

- Hughes is proposing a fully managed HX VSAT system that will be wholly compatible and interoperable with the existing IP network used by state agencies, the federal government, etc. The solution will include:
 - Dedicated outroute (NOC to remote) satellite bandwidth
 - Dedicated inroute (remote to NOC) satellite bandwidth
 - Dedicated, redundant network infrastructure in the Hughes NOC
 - Service based in Hughes' NLV NOC has the ideal environmental conditions for maximum availability
 - Access to the Customer Gateway for performance and fault management
 - 24x7 NOC operations
 - Tier 3 Help Desk
 - Remote field service next business day
 - Program management
 - Network engineering
 - VPN backhaul (to provide connectivity from the Hughes NOC to the Customer Data Center)

The core component of the HX system is the HX Gateway, which acts as the system master and includes the network management and dynamic bandwidth assignment manager. The HX Gateway uses a DVB-S2 carrier with ACM for the outbound channel received by all HX system remote terminals. HX remote

terminals utilize FDMA/TDMA channels to communicate back to the HX Gateway (star mode) or to each other (mesh mode).

The Frequency Division Multiple Access/Time Division Multiple Access (FDMA/TDMA) channels of the HX system carry user data from the remote sites to the hub and data center. These channels are highly efficient and are based on the industry-leading standard, IPoS, which has been endorsed by ETSI, ITU, and TIA. The HX system FDMA/TDMA channels of the HX system support data rates up to 6.0 Mbps.

Efficiency and flexibility in utilizing satellite bandwidth are core to the design of the HX system. Each link, in star or mesh mode, can be configured to provide a QoS tailored for an individual remote terminal. And each remote link can be independently configured with unique Committed Information Rates (CIRs), thereby allowing a service provider to develop a service tailored to their Customer's specific requirements. In addition, the HX system bandwidth allocation scheme is designed so that idle terminals can be configured to release all bandwidth assignments, thus ensuring optimal bandwidth utilization.

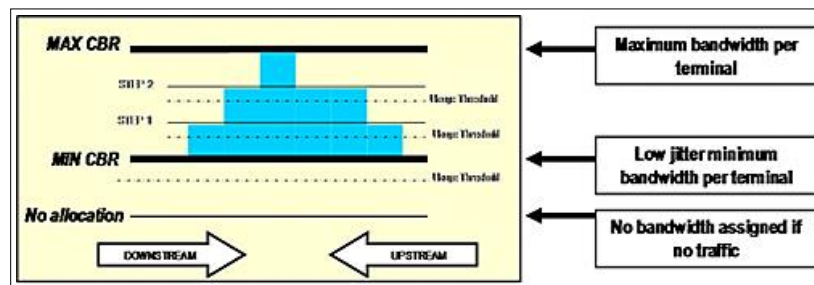
HX Features

- Quality of Service features include:
 - On-demand CBR services
 - Adaptive CBR with minimum, maximum, and user-definable step-sizes
 - CIR with minimum, guaranteed, and maximum rates
 - Backlog-based dynamic stream with weighted fair queuing
 - Class-based weighted prioritization
 - Multicast data delivery
 - Four levels of IP traffic prioritization
- Bandwidth allocation
 - Supports both preassigned (static) traffic assignment and dynamic traffic assignment
 - Idle remotes can be configured to release all network resources
- Bandwidth optimization
 - Integrated TCP spoofing
 - Integrated HTTP acceleration (optional)
 - Integrated TCP and UDP compression
 - Header compression
 - Outbound adaptive coding and modulation
 - Inbound adaptive inroute selection
- IP routing capability:
 - Static and dynamic addressing
 - DHCP server or relay
 - DNS caching
 - RIPV1, RIPV2, BGP routing support
 - Multicasts to and from the LAN by using IGMP
 - NAT/PAT
 - VRRP
 - VLAN tagging (end-to-end)
 - Firewall support through integrated access control lists
- Bidirectional data encryption (optional)
- Configuration, status monitoring, and commissioning



- Remote terminal management via the Hughes Unified Element Manager and SNMP agent
- Mobility features (optional)
 - FDMA/TDMA channel spreading
 - NEMA interface
 - Roaming support
 - Doppler compensation
 - Fast reacquisition of outbound
 - Persistent IP connection
- Mesh features (optional)
 - Simultaneous star/mesh
 - Multichannel mesh receiver at remote
 - Mesh TCP and UDP connections
 - Mesh gateway

The HX system has the ability to provide dynamic allocation of bandwidth to economically support such QoS features as dynamic CBR QoS for two-way voice and video applications. This dynamic CBR allows for low-jitter and low-latency connections between remotes and gateways that allow for high quality of voice while being bandwidth-efficient in only providing the remote with required bandwidth based on application.



HX Security

All HX systems come standard with a set of basic security features. Hughes' satellite terminals are manufactured with a unique hardware encryption key programmed into a special chip. Only upon successful receipt of this key during the commissioning process does the hub release further control, and session keys required for communication.

Security is ensured on the outroute through DES encryption for data and Triple DES encryption for key distribution. Conditional access is integrated within each terminal. Should the terminal lose the outbound channel for any reason, the terminal transmission is disabled. The terminal also will disable its transmitter if packets transmitted on the inroute are not acknowledged for a period of time. This feature ensures that a failed VSAT terminal will not interfere with other VSAT terminals.

Hughes' satellite terminals also support an optional bidirectional IPSec-based 128 /256 bit AES encryption. The optional IPSEC feature provides added protection for user data traffic by securing all user data flowing between the satellite hub and remote terminals in both directions.

HX Network Management System (ExpertNMS™)

Managing and monitoring an HX system is easily done using the HX ExpertNMS. The ExpertNMS provides the tools necessary for Hughes' operators and network engineers to commission, configure,

modify, monitor, and isolate problems on the HX system. This ensures Hughes will be able to deliver quality operations and engineering support to the Customer.

High-level features of the ExpertNMS include:

- Browser-based client
- Real-time component health and status
- Performance monitoring
- Automated network troubleshooting
- Installation wizard guides setup
- Simplified network component configuration
- Context-sensitive help and online reference library

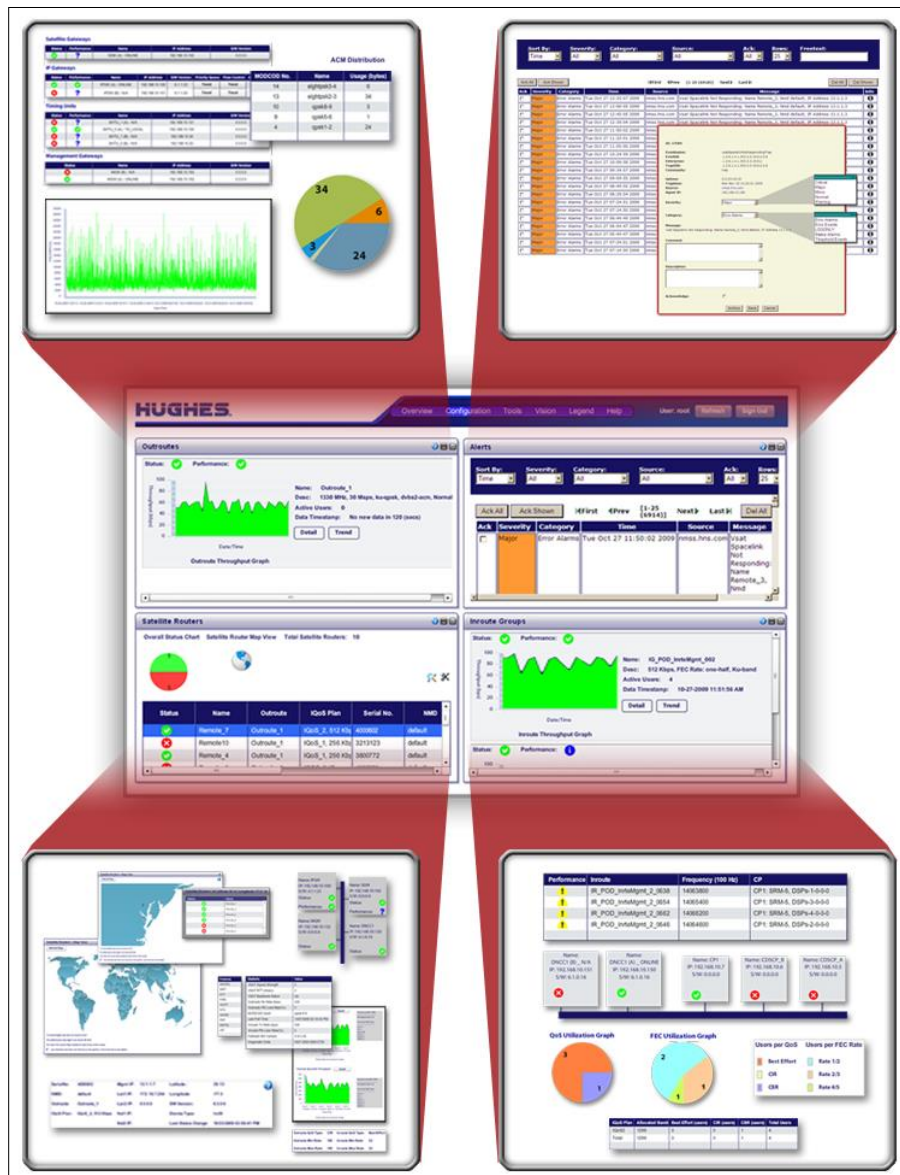
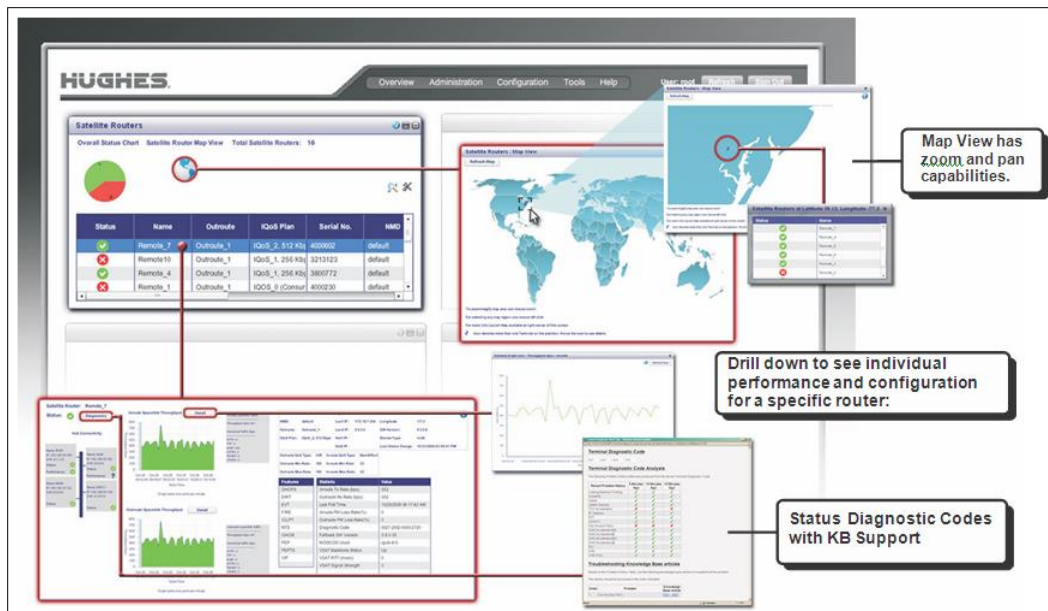


Figure 1-3. HX ExpertNMS

NetExpert provides Hughes operators with a comprehensive overview of their network's performance and the ability to quickly identify the root cause of performance issues.

- User Interface

- Browser-based client
- Dynamic, context-sensitive window panes
- Designed for large display in operations centers
- Quick Network Overview
 - Customizable network overview screen
 - Multiple graphs and pie charts give quick overview
 - Router overview - list/map view (aggregated router status)
 - Inroute group – throughput, status, statistics
 - Outroute – throughput, status, statistics
 - Users see only routers associated with their own network
- Network monitoring
 - Full-featured event manager with for event display, filtering, sorting, and acknowledgement
 - Continuous network monitoring with customizable network thresholds to provide notification to Hughes in the event of performance degradation
 - Performance and component status propagate to inroute group and outroute level
 - Detail views provide immediate component associations and status
 - Router diagnostics codes are leveraged to provide insight into router issues
- Simplified network configuration
 - Installation wizard
 - Configuration dashboard
 - Preset templates
- Help
 - Context-sensitive help on all screens
 - Full index and search of help topics
 - Access to a documentation library in PDF form



All return channel components, inroute QoS groups, and inroute bandwidth capacity are monitored via the ExpertNMS.

The ExpertNMS accommodates complete configuration, provisioning, enabling, and disabling of remote sites or groups of remote sites. With over 4,000 uniquely adjustable parameters, the HX system is unparalleled in its flexibility.



Figure 1-4. ExpertNMS Inroute Status

HN Service

Standard service plans can be designed to be Dedicated NOC (D-plan) or Shared NOC (S-plan). See **Figure 1-5**. An S-plan network follows the traditional satellite model and passes all traffic through a shared facility, the Hughes NOC, and then connects to the Customer network via a terrestrial circuit.

A D-plan network, however, offers an unparalleled hub-less architecture, with no terrestrial networking component. A D-plan network leverages the full mesh capability of SPACEWAY 3 and will allow only a SPACEWAY 3 terminal and antenna to be installed at the Customer Datacenter, without passing any traffic through the Hughes-owned SPACEWAY 3 NOC or teleport.

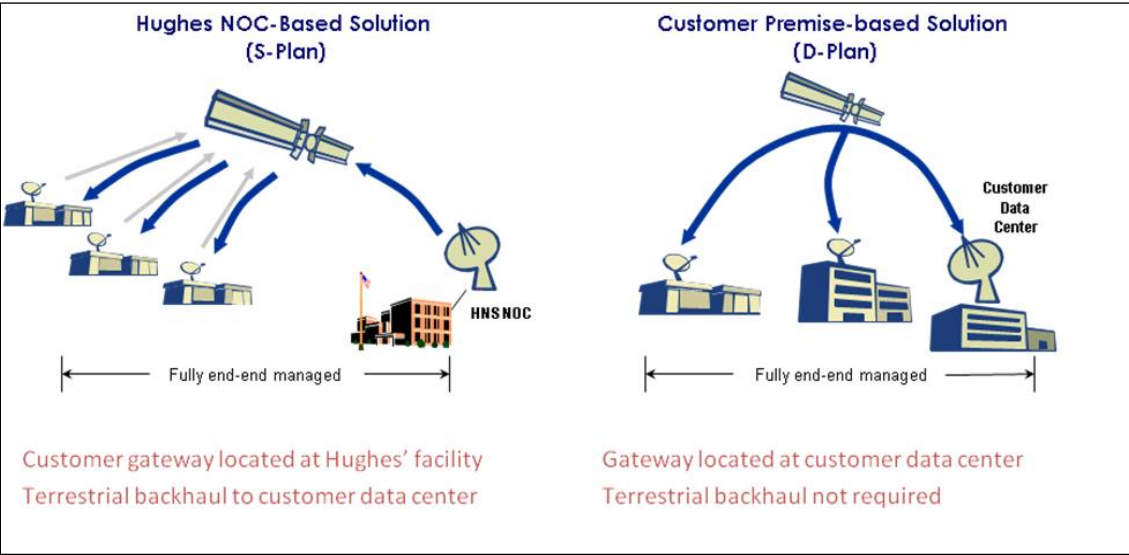


Figure 1-5. Basic SPACEWAY 3 Network Architectures

Standard service plans are priced according to whether the fundamental network is an S-plan or a D-plan.

Hughes' S-Plans

S-plans are ideal for large networks (100+ sites) or agencies that do not wish to have a satellite installation (satellite antenna and CPE/router) at their headquarters location. In this case, the headquarters/data center is connected via a leased-line backhaul or Internet VPN to share the Hughes NOC. This is classically how standard satellite networks are deployed.

For S-plans, an AGW is installed at a SPACEWAY 3 NOC. Any additional equipment such as Turbo Page Servers or AES VPN IPGWs will also be installed behind the respective Access Gateways (AGWs) at the NOC.

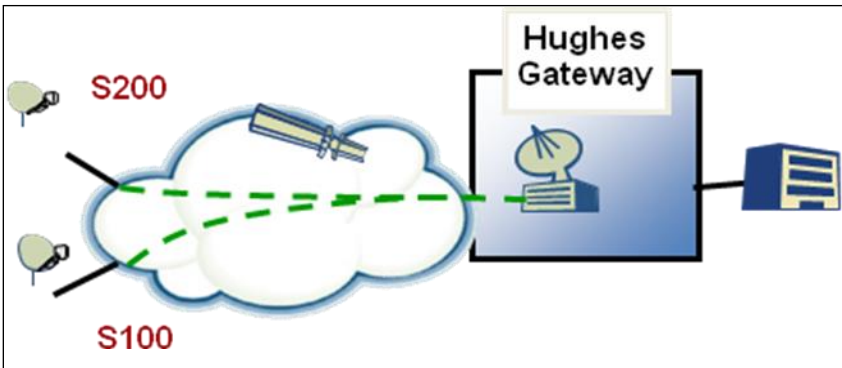


Figure 1-6. SPACEWAY 3 S-Plan Architecture

Since all S-plan traffic traverses through a SPACEWAY 3 NOC, S-plan service plans include both upstream (from the remote) and downstream (to the remote) speeds. **Table 1-1** shows the S-plan speeds:

Table 1-1. SPACEWAY 3 S-Plans					
	S-50	S-100	S-200	S-300	S-400
Rate Up/Down	64 kbps/1 Mbps	128/1 Mbps	256/1.5 Mbps	512/2 Mbps	1024/3 Mbps

Hughes' D-Plans

D-plans are ideal for small networks, 100 sites or fewer, where each branch location has a Hughes satellite installation. This is a network dedicated to the specific enterprise and does not share services from the Hughes NOC.

In a D-plan, each service plan is priced only on the upstream transmission rate, from the remote to the satellite. In turn, a very high 8 Mbps downstream limit is allocated per SPACEWAY 3 remote. A remote in a D-plan network can transmit with a Bandwidth-on-Demand (BoD) plan, or use dedicated bandwidth. BoD bandwidth is for bursty usage, such as credit card transactions, polling, database updates, intranet/Internet, or other basic interactive applications.

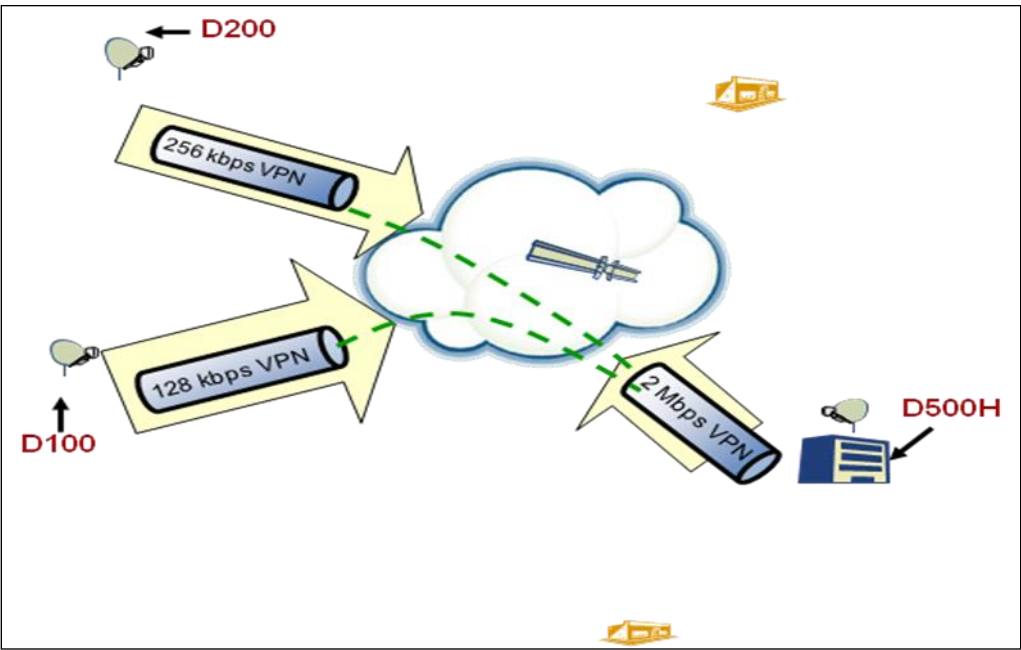


Figure 1-7. HN9500 D-Plan Hub-less Architecture

Table 1-2. HN9500 D-Plans					
	D-50	D-100	D-200	D-300	D-400
Upstream Rate (kbps)	64	128	256	512	1024
Downstream Rate	8–10 Mbps	8–10 Mbps	8–10 Mbps	8–10 Mbps	8–10 Mbps

For greater networks that require greater than 100 routes, a dedicated AGW is required. For D-plans, the AGW is installed at the Customer Datacenter. Any additional equipment such as TurboPage Servers or AES VPN IPGWs will be installed behind the respective AGWs. In this hub-less architecture, Hughes requires a few other devices to reside at the agency datacenter, as well as a terrestrial connection, either VPN or dedicated circuit, to facilitate network monitoring and troubleshooting of the network. This equipment does not enter the data path of the traffic and is used for management purposes only.

High Volume Uplink (HVUL) Capacity

For star networks that use the D-Service plans, it may be necessary to configure High Volume Uplink (HVUL) capacity at the Customer’s data center. This capacity is dedicated to the transmitting VSAT at the Customer’s data center and is not subject to any oversubscription or contention from any other VSATs. HVUL capacity is required for HN9500 terminals that are connected to an AGW.

Table 1-3. Dedicated Bandwidth Plans					
	D-100H	D-200H	D-300H	D-400H	D-500H
Dedicated Upstream Rate (kbps)	128	256	512	1024	2048
Downstream Rate	8–10 Mbps	8–10 Mbps	8–10 Mbps	8–10 Mbps	8–10 Mbps

Internet Overlay Service

S- or D-plans are intended to provide basic Private IP networking connectivity. While a government agency may provide Internet access through corporate facilities, any Internet access usage will share bandwidth with their corporate traffic. Hughes can optionally provide an Internet overlay, which augments the speeds and capacity of the S- or D-plan with additional bandwidth intended for Internet use only. These are called Basic Internet (BI) plans:

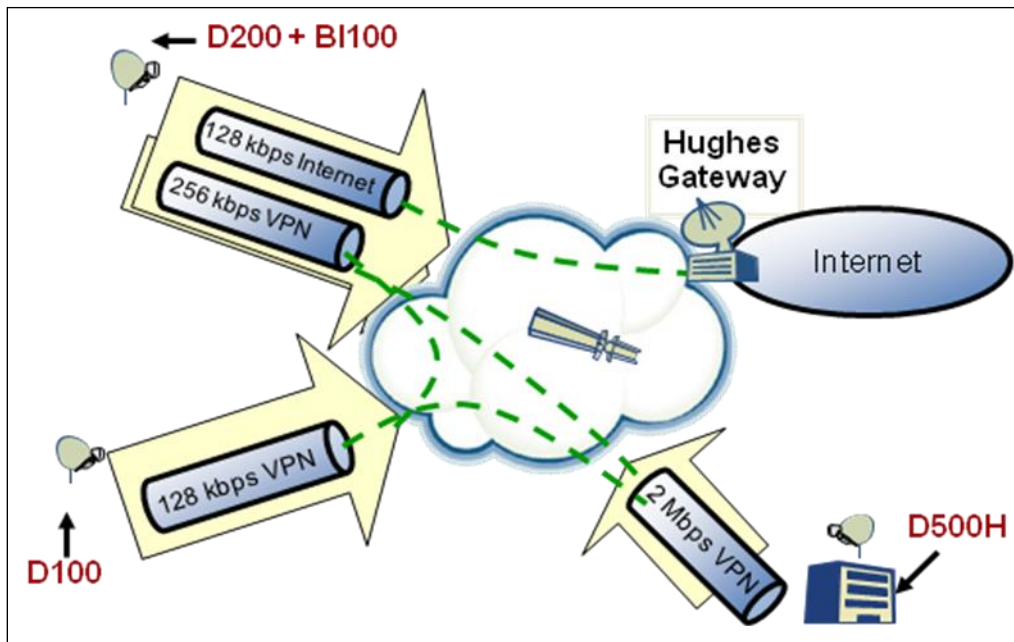


Figure 1-8. Private Network Internet Overlay

In this scenario, a remote can transmit corporate traffic using the D-200 service plan and additionally transmit Internet access on a separate bandwidth pool.

Table 1-4. SPACEWAY 3 BI Overlay Plans			
	BI-50	BI-100	BI-200
Upstream Rate (kbps)	Limited	128	256
Downstream Rate	Limited	700 kbps	1 Mbps

Constant Bit Rate (CBR)

CBR provides on-demand, point-to-point connectivity between any two sites in the Hughes network. The Customer can get the benefits of a high QoS dedicated link without the need to lock up the bandwidth 24x7. When the service is in use, the bandwidth is fully dedicated to the site and not shared with anyone else.

The CBR feature allows a remote to transmit in 32 kbps increments from 64 kbps up to 1.5 Mbps and is intended for voice, video, or streaming data applications. CBR does not accelerate IP traffic via PEP or Turbo Page.

Since CBR augments an S-plan or D-plan network as well as any BI Overlay, SPACEWAY 3 allows the users to define the specific traffic that will transmit using CBR. Otherwise, all traffic will adhere to the speeds and constraints of the underlying S- or D-plan. For each CBR connection, the sites will be billed by the minute, and minutes can be purchased in bundles to accommodate larger networks. Unused minutes will not carry over from one month to the next.

System Security

Security is an important and integral part of the SPACEWAY 3 system architecture. Security functions are built into the system to protect SPACEWAY 3 resources from abuse and to ensure proper operation of the system.

Satellite Security

The satellite telemetry and command links are protected through the use of encryption technology. The Telemetry and Tracking Center (TT&C) link is protected using Caribou encryption, which is an NSA-approved cryptography. The inband link is protected using Centurion encryption. All other transmissions arriving on an uplink channel are validated using a strong cryptographic algorithm to ensure that the data came from a valid SPACEWAY 3 terminal. The payload contains a set of security keys that validate the uplink TDMA bursts from every SPACEWAY 3 terminal. Hughes SPACEWAY 3 NOC administers those keys that involve the secure generation, distribution, and updating on a regular basis. Key generation and distribution meet ANSI X9.17 standards. As keys are updated, the NOC distributes the keys to the appropriate system elements. All requests for system resources are also authenticated by the NOC prior to allocation.

Each terminal receives unique access control security keys in a secure manner. The Security Access Module (SAM) within each terminal is a non-removable module that meets all FIPS 140-1 level 3 and most level 4 requirements. The SAM protects the keys from disclosure or tampering. The SAM and NOC generate management data security keys in accordance with ANSI X9.17 standards. The management data security keys are used to protect the distribution of all other security keys. The terminal provides for link layer encryption of user data using a two-key triple DES (3DES) algorithm. The integrity of the terminal software is protected through the use of digital signatures and the US Secure Hash Algorithm

(SHA1). The NOC also ensures the integrity and accuracy of satellite resource usage and billing information.

NOC Security

In addition to the satellite security systems, the Hughes NOCs (which will be providing Internet access to Customer locations) have extensive physical protection against a variety of potential threats. This includes 24-hour site monitoring, intrusion and environmental monitoring, and electronic control of access to secure areas.

Data Security

All data transmitted on the satellite network is encrypted, in addition to hardware and network security mechanisms, which protect data transmitted on the network against unauthorized access. The HN9500 individually encrypts each Internet/intranet session, multimedia stream, or package with a unique session key that restricts access to a data stream or package.

When a HN9500 satellite router is activated, its identity is cryptographically authenticated to the Hughes NOC via a digitally signed message, verifying that it is authorized for service. As such, the HN9500 remote only receives key information (in encrypted form) that is specifically addressed to it and thus, is only capable of decrypting and receiving data that is addressed to that modem specifically.

The HN9500 also offers firewall capability to block and detect inbound access to the remote site.

AES Security

For networks where stronger security is required to meet requirements such as PCI compliance, Hughes offers an end-to-end AES encryption solution in lieu of the built-in LLDC encryption. The SPACEWAY 3 Site-to-Site IPSec Encryption feature enables Hughes to provide the following new capabilities for point-to-point user data:

- Encryption capabilities algorithm that is considered secure and resistant to cryptanalysis for bidirectional, point-to-point user data (AES).
- Ability to perform true site-to-site encryption without having any unencrypted portions enroute while still being able to perform Hughes Acceleration Functions.
- Support of an industry recognized protocol (IPSec) for handling the encryption and the keys.

The HughesNet site-to-site encryption utilizes the AES for data confidentiality. An IPSec ESP tunnel mode is established between the SPACEWAY 3 remote and either the AES VPN IPGW at the SPACEWAY 3 NOC or at the Customer data center. All data is encrypted within the tunnel between these two devices.

Typically, data encryption does not allow a satellite system to perform traffic acceleration. However, the HughesNet solution allows users to protect their data using the latest encryption standard (AES) and still gain the benefit of the traffic acceleration functions. The Hughes remote has integrated AES into it so that it encrypts all data sent across the satellite or backup link

HN9500 SPACEWAY 3 Terminal

The HN9500 provides the capability of transmitting up to 2 Mbps in the uplink and receiving up to 5 Mbps depending on the traffic type. HN9000 is Hughes' enterprise-grade satellite router and is offered

with only the Private Networking D & S Service Plans as described. It will also support the BI plans. Any federal, state, or local agency that wishes to either utilize D- or S-plans right off the bat or be able to upgrade to them in a future date will receive an Indoor Unit (IDU), an antenna, a non-penetrating antenna mount, and the Outdoor Unit (ODU) necessary to provide 99.7% network availability. Hughes assumes a standard installation, with the antenna being mounted on a non-penetrating mount with a cable run of less than 150 feet between the ODU and IDU. The terminal is shown in **Figure 1-9**.



Figure 1-9. HN9500 Terminal with 0.98 m Antenna

Access Continuity

In today's environment, government agencies increasingly need more availability from their network. Network availability is a critical component of a government agency's operational efficiency. Current wide area networking solutions typically offer end-to-end availabilities on the order of 99.8%. To achieve higher availability, organizations typically rely on a variety of backup arrangements, such as diverse access loops, shadow virtual circuits, or circuit switched connections, such as ISDN or PSTN to back up connectivity during outages of the primary connectivity to a site or sites. While these techniques will enhance the availability of the network, they suffer from one or more key shortcomings as a backup solution, such as lack of path diversity or lack of high speeds.

Hughes' AC Service is a turnkey-managed service designed expressly to deliver cost-effective, backup connectivity for government data networks. AC combines three critical attributes for a superior backup solution: path diversity, high speeds, and universal coverage. Hughes' AC Service provides:

- A cost-effective, scalable broadband platform that can support the Customer's mission-critical applications
- Secure IP connectivity
- Backup connectivity to all or selected locations in a network
- Rapid deployment
- A cost-effective platform to deliver new services

AC is a fully managed service. Hughes provides end-to-end proactive network monitoring and service management.

AC has been designed to assist Customers in reaching up to 99.99% average network availability. The overall availability may, however, vary based on the primary network connection's availability.

Functional Description

Hughes' AC solution consists of a satellite router installed at each of the Customer's locations requiring backup. Each location will connect via satellite to the Hughes NOC facility (See **Figure 1-10**). A terrestrial backhaul link (frame relay, VPN, or leased lined) is used to connect the NOC and the Customer's data center.

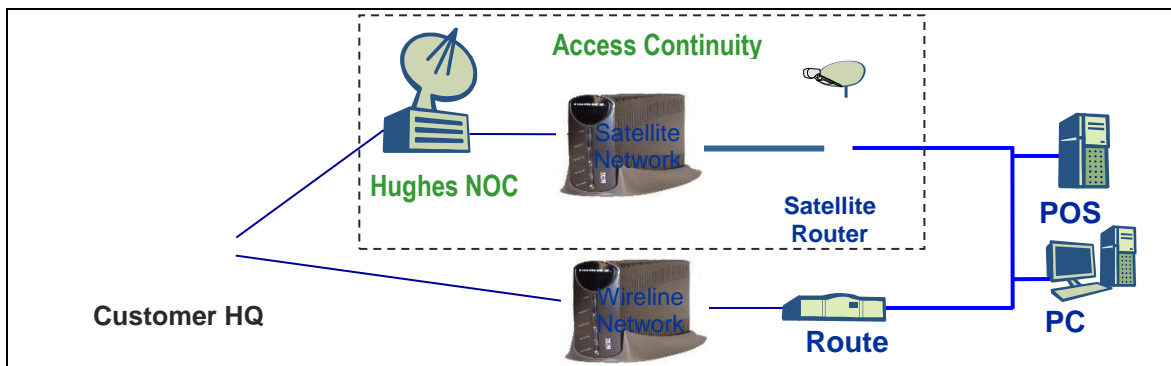


Figure 1-10. Hughes Access Continuity Overview

AC provides backup connectivity when the primary connection, procured from a third party, is not available. When the primary connection becomes unavailable, logic located in the on-site router automatically switches the site's connection to the satellite.

When the network switches to the satellite connection, application/network traffic runs over the satellite network in a prioritized manner. Applications that are vital to the business' operation get higher priority. These applications are defined by each government installation and typically include: order handling, credit card authorization, manufacturing applications, etc. Each government defines its priority applications based on their business needs.

Upon restoration of the primary terrestrial path, all traffic is automatically rerouted back from the satellite network to the primary network.

Government agencies can choose from five service plans with different data rates and throughputs designed to meet communication requirements for a location. Within a network, these may all coexist to support different locations' unique size and requirements.

Benefits

Achieving consistent high availability at a reasonable cost has traditionally been difficult to accomplish. Although a carrier's backbone network can be made highly resilient by use of redundancy and sub second switchovers, often achieving 5-9s availability, the Achilles' heel of most distributed government networks remains the access loop, or the so-called "last mile." Achieving true diverse access with an all terrestrial government network is very difficult and requires careful planning, involving conduit separation, dual entrances, connectivity to two central offices, and comprehensive analysis to ensure that no common path exists upstream – often on a site by site basis. Any common element between the two paths defeats high availability by becoming a common point of failure.

In short, Hughes Access Continuity offers a number of valuable benefits:

- **Backup Route Diversity:** The satellite network is a more physically diverse medium than the terrestrial network, removing the last mile from the equation.
- **Cost-Effective:** Use of the satellite network for backup provides a highly cost-effective and cost-competitive solution. The various AC service plans allow each site to have an appropriately selected plan for its needs.
- **Flexibility:** Several configuration options are available to match the specific requirements of the government. Additionally, site equipment and service plans can be moved and changed along with business needs.
- **Nationwide Coverage:** The service that is available in North America; there is almost no per-site design and analysis required. This enables ready deployment throughout the distributed government.

Service Plan		Effective User Data Rate Using Hughes' Acceleration and Compression Technology	
		Upstream (Typical-Burst)	Downstream (Typical-Burst)
Access Continuity 50	Designed for small office/retail sites that do not need high bandwidth.	64 kbps–128 kbps	768 kbps–1 Mbps
Access Continuity 100	Designed for a full range of retail applications (POS, credit, polling, Help Desk) with intranet access requirements.	128 kbps–256 kbps	768 kbps–1 Mbps
Access Continuity 200	Designed for multiple applications or larger branch offices with intranet access requirements.	256 kbps–512 kbps	1.28 Mbps–2 Mbps
Access Continuity 500	Designed for high bandwidth intensive applications or larger branch offices.	512 kbps–1 Mbps	1.5 Mbps–2 Mbps

A specific service plan is selected for each site on the AC network based on its specific application and business needs.

Automatic Switchover Capability

The AC network is enabled using automatic switchover from the primary terrestrial network when it becomes unavailable. Each remote site connects and configures a router to the Hughes satellite router via the LAN to perform the switchover. Policy-based routing affects the switchover.

Figure 1-10 depicts the configuration of the automatic switchover capability. This mechanism performs two functions: First, it automatically switches the remote site to the backup AC service during outages of the primary (frame relay, T1, VPN, etc.) network. Second, if a backup data center exists, it automatically

redirects mission-critical traffic from the Hughes NOC to the Customer's backup data center when connectivity to the primary data center is lost. Routers at the NOC and at the remote sites and data center(s) affect this switchover. As shown in the diagram, both the primary terrestrial and satellite networks are connected to the same local site router. Hughes will provide the recommended configuration for these routers during implementation.

Hughes' satellite services are entirely available in the state of Texas and 47 other states.

HX Service Coverage Map

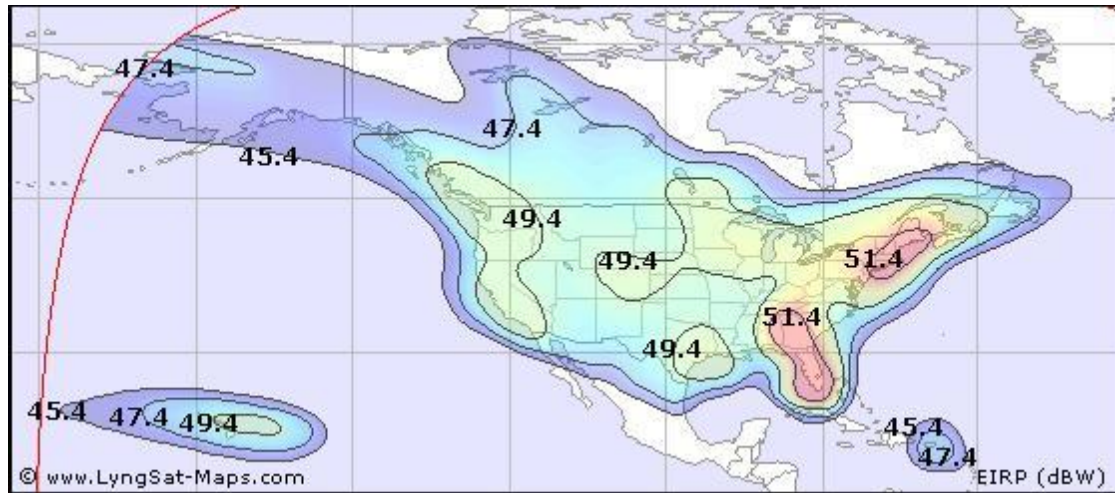


Figure 1-11. Galaxy 16

1.3 HUGHES CUSTOMER GATEWAY

Hughes will provide a network performance portal called Customer Gateway to allow DIR and the Customer to view network performance. Hughes provides a comprehensive network management solution for enterprise and government networks. The Hughes Customer Gateway Portal will provide Customers with real-time, online status reporting on satellite, terrestrial (xDSL, cable), and wireless (EVDO/3G) implementations. The Customer Gateway enables Customers to receive Customer-specific network performance and fault management reports.

To simplify the Customer experience, Hughes provides a single Customer interface that allows enterprise customers and government agencies to administrate an entire network with minimal staffing resources. With a singular interface, Customers will be able to quickly track the installation schedules and the health/status of their digital signage networks.

The Customer Gateway is a Web-based application created and maintained by Hughes. The dashboard screen is shown in **Figure 1-12**. Each authorized Customer representative is assigned a user name and password to log into this secure portal. The portal contains information about Customer installation schedules, open tickets status, monthly reports, network engineering and operations problems, viewing technical documentation, and gaining access to knowledge-based articles.

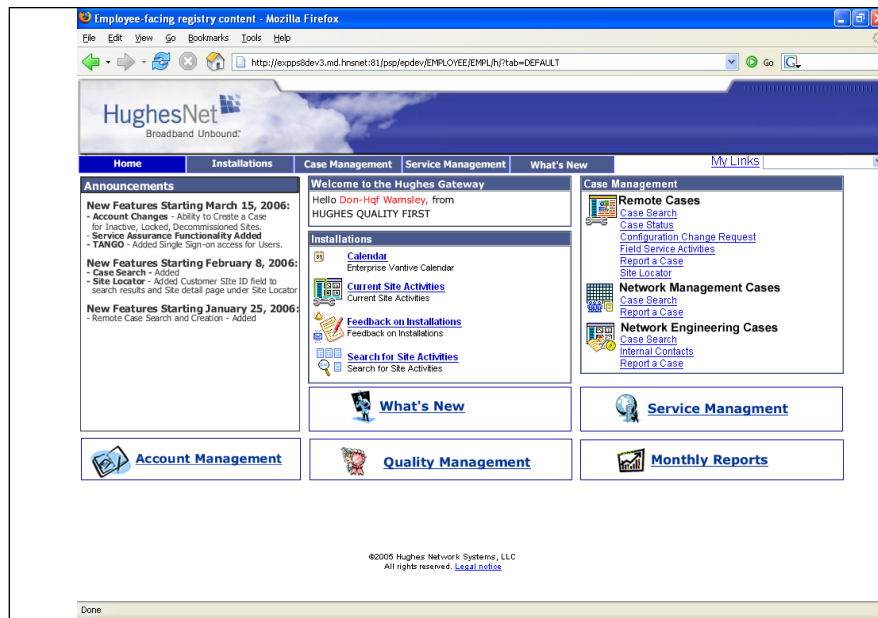


Figure 1-12. Hughes' Customer Gateway

The Customer Gateway also provides real-time status monitoring and alarm management for the Customer's network. The Web-based proactive monitoring tools developed by Hughes represent a real value-add to the Customer, materially reducing workload, improving communication of problems and status, and reducing the cycle times for problem detection and resolution. Hughes Network Management Service consists of fault management, performance management, and configuration management modules. It will also provide the Customer with a clear insight into their network's status and performance.

For each private network provisioned, Hughes will provide an online training session to network support personnel on how to access and use the Customer Gateway.

1.4 PERFORMANCE MANAGEMENT

Hughes' Managed Services will provide the following performance reporting to the Customer:

- **Help Desk:** Response time, dropped calls, and average speed to handle Web tickets.
- **Ticket per Subscriber:** A report that shows the total number of tickets escalated to Advanced Support during any given month. It compares ticket escalation to the total number of subscribers/sites and calculates tickets per subscriber percentage for a given month.
- **Mean Time between Failures (MTBF):** (based on remote maintenance reporting).
- **Average Restoral Time:** (based on remote maintenance reporting).
- **The Network Performance Summary:** A bar graph that shows a sliding 12-month breakdown of the NOC, remote, and network availability (weighted mean average). The number of sites is shown on the same chart in a line graph. In addition to the color graph, a network performance summary sheet identified as a remote performance summary report is included. This sheet includes trouble ticket breakdown, availability, contract field service response, noncontract field service response, Mean Time to Repair (MTTR), and MTBF. This is available through the Customer Gateway.

- **Outage Analysis:** This includes a breakdown of the trouble tickets for the reporting month, by cause, in the form of a color pie chart. In addition to the total number of sites in the Customer's network, the MTTRs for both clock and actual outage period are provided at the bottom of the page. The outage analysis detail and outage analysis percentage report from Hughes' Ticket System database allows the Customer to view the breakdown by problem, date, and time trouble ticket was opened; date and time it was closed; site number; to whom the problem was assigned; and the covered and elapsed hours. Outage analysis by site lists each site that had an outage during the reporting month. The information is the same as shown in the outage detail report. This is available through the Customer Gateway.

Actual trouble tickets from Hughes' ticket system database are available for viewing through the Customer Gateway, a Web-based application at support.hughes.com. A range of tickets can be selected for viewing on the Problem Search screen using a selection of the last 30 days, 7 days, and open tickets. Categories of tickets can be selected for viewing or printing from the Problem Status screen. The various categories include Open, Hold, Pending, Closed, or All. (Online documentation on the use and features of the Customer Gateway can be accessed by selecting the "About This Site" menu option.) Any of the categories can be selected and a specific date range specified. Any ticket that can be viewed can be printed using the Print Frame capability under the File Selection option. This is available through the Customer Gateway.

The Master Site List is a listing of all Customer-commissioned sites to date. This information comes from what is gathered by Hughes' ticket system database. This list is sorted by site ID number and includes the following fields: location name, site address, city, state, ZIP code, contact name and phone number, commission date, decommission date, type of unit installed, and the national NOC facility on which the site is supported. This is available through the Customer Gateway.

The Newly Commissioned Sites List shows all the sites that were commissioned in the reporting month. The information, which is gathered through Hughes' database, lists the Hughes site ID number and includes the following fields: location name, site address, city, state, ZIP code, contact name and phone number, commission date, decommission date, type of unit installed, and the national NOC facility on which the site is supported. This is available through the Customer Gateway.

As part of the Hughes managed service, Hughes offers an option for near real-time and historic traffic analysis reports for Customer network.

1.5 TEXAN SERVICE OFFERING MATRIX

HN9500	HX
Plans	Plans
Business Internet <ul style="list-style-type: none"> • Small Office • Home Office BI Overlay Plans <ul style="list-style-type: none"> • BI-50 (Limited/Limited) • BI-100 (128/700 kbps) • BI-200 (256 kbps/ 1 Mbps) 	HX Service Plans <ul style="list-style-type: none"> • HX service (dedicated bandwidth) Service in which the Customer will be guaranteed full access to that bandwidth capacity.

HN9500	HX
S-plan (subscription service [Shared]) <ul style="list-style-type: none"> S-50 (64 kbps/1Mbps) S-100 (128/1Mbps) S-200 (256/1.5 Mbps) S-300 (512/2 Mbps) S-400 (1024/3 Mbps) 	HX Circuits Transmit/Receive <ul style="list-style-type: none"> HX Circuit 128 kbps Tx/256 Kbps Rx HX Circuit 256 kbps Tx/512 Kbps Rx HX Circuit 256 kbps Tx/1024 Kbps Rx HX Circuit 1024 kbps Tx/5120 Kbps Rx HX Circuit 3048 kbps Tx/10240 Kbps Rx
D-plan (fully meshed network [dedicated or subscription service]) <ul style="list-style-type: none"> D-50 (64 Kbps/ 8 Mbps) D-100 (128 Kbps/ 8 Mbps) D-200 (256 Kbps/ 8 Mbps) D-300 (512 Kbps/ 8 Mbps) D-400 (1024 Kbps/ 8 Mbps) D-100H (128 Kbps/ 8 -10Mbps) D-200H (256 Kbps/ 8 -10Mbps) D-300H (512 Kbps/ 8 -10Mbps) D-400H (1024 Kbps/ 8 -10Mbps) D-400H (2048 Kbps/ 8 -10Mbps) Shared Access Continuity Plans <ul style="list-style-type: none"> S-50AC 64 Kbps Tx/1024 Kbps Rx S-100 AC 128 Kbps Tx/1024 Kbps Rx S-200 AC 256 Kbps Tx/1536 Kbps Rx S-300 AC 512 Kbps Tx/2048 Kbps rx S-400 AC 1024 Kbps Tx /3072 kbps rx Dedicated Access Continuity Plans D-AC 64 Kbps tx D-100 AC 128 Kbps Tx D-200 AC 256 Kbs tx D-300 AC 512 Kbps Tx D-400 AC 1024 Kbps Tx 	HX Dedicated Inbound Channels <ul style="list-style-type: none"> HX Dedicated inbound channel 128 Kbps Tx HX Dedicated inbound channel 256 Kbps Tx HX Dedicated inbound channel 512 Kbps Tx HX Dedicated inbound channel 1024 Kbps Tx HX Dedicated Outbound Channels <ul style="list-style-type: none"> HX Dedicated outbound channel 128 Kbps Tx HX Dedicated outbound channel 256 Kbps Tx HX Dedicated outbound channel 512 Kbps Tx HX Dedicated outbound channel 1024 Kbps Tx HX Dedicated outbound channel 2048 Kbps Tx
Continuous Bit Rate Plans <ul style="list-style-type: none"> CBR 64 Kbps/min. CBR 1,000 (CBR Units) CBR 5,000 (CBR Units) CBR 10,000 (CBR Units) CBR 25,000 (CBR Units) CBR 50,000 (CBR Units) CBR 100,000 (CBR Units) 	

HN9500	HX
<p>Business Internet Overlay Plans</p> <ul style="list-style-type: none"> • BI-100 Internet Overlay 128 Kbps Tx/1000 Kbps Rx • BI-200 Internet Overlay 256 Kbps Tx/1200 Kbps Rx • BI-300 Internet Overlay 250 Kbps Tx/1600 Kbps Rx • BI-400 Internet Overlay 300 Kbps Tx/2000 Kbps Rx • BI-500 Internet Overlay 512 Kbps Tx/3000 Kbps Rx 	
Service Offered	Service Offered
<ul style="list-style-type: none"> • Installation <p>Hughes utilizes a specially designed online database to support its installation activity. All installation personnel throughout the country have access to the online database system and the Hughes electronic mail system. The Hughes Program Manager and the Customer can access this installation activity database through the Customer Gateway. If the customer chooses to do their own installation they must be certified and the installation activities will not be available on the Customer Gateway.</p>	<ul style="list-style-type: none"> • Installation <p>Hughes utilizes a specially designed online database to support its installation activity. All installation personnel throughout the country have access to the online database system and the Hughes electronic mail system. The Hughes Program Manager and the Customer can access this installation activity database through the Customer Gateway. If the customer chooses to do their own installation they must be certified and the installation activities will not be available on the Customer Gateway.</p>

HN9500	HX
<ul style="list-style-type: none"> • Field Maintenance This field service organization will be used to resolve any and all remote site issues at Customer locations. Hardware failures are resolved through replacement of Customer premises equipment. Software issues are usually resolved at the NOC (as all remote software and configuration parameters are downloaded via the network); however, if necessary the field service technician will work with the NOC from the remote site to resolve software or configuration issues. ➤ Next Business Day (NBD) Field Service (Service Coverage Hours are 8:00 a.m. to 5:00 p.m. local time, Monday through Friday, except holidays, beginning the next business day after a call is received.) ➤ Next Day (ND) Field Service Service Coverage Hours are 8:00 a.m. to 5:00 p.m., local time, 365 days per year, beginning the next day after a call is received.) ➤ 9x5 Field Service (8:00 a.m. to 5:00 p.m., local time, Monday through Friday, except holidays) ➤ 12x6 Field Service (8:00 a.m. to 5:00 p.m., local time, Monday through Friday, except holidays) ➤ 12x7 Field Service (8:00 a.m. to 8:00 p.m., local time, Monday through Saturday) ➤ 18x7 Field Service (6:00 a.m. to 12:00 midnight, 365 days per year) ➤ 24x7 Field Service (24 hours per day, 365 days per year) 	<ul style="list-style-type: none"> • Field Maintenance This field service organization will be used to resolve any and all remote site issues at Customer locations. Hardware failures are resolved through replacement of Customer premises equipment. Software issues are usually resolved at the NOC (as all remote software and configuration parameters are downloaded via the network); however, if necessary the field service technician will work with the NOC from the remote site to resolve software or configuration issues. ➤ Next Business Day (NBD) Field Service (Service Coverage Hours are 8:00 a.m. to 5:00 p.m. local time, Monday through Friday, except holidays, beginning the next business day after a call is received.) ➤ Next Day (ND) Field Service Service Coverage Hours are 8:00 a.m. to 5:00 p.m., local time, 365 days per year, beginning the next day after a call is received.) ➤ 9x5 Field Service (8:00 a.m. to 5:00 p.m., local time, Monday through Friday, except holidays) ➤ 12x6 Field Service (8:00 a.m. to 5:00 p.m., local time, Monday through Friday, except holidays) ➤ 12x7 Field Service (8:00 a.m. to 8:00 p.m., local time, Monday through Saturday) ➤ 18x7 Field Service (6:00 a.m. to 12:00 midnight, 365 days per year) ➤ 24x7 Field Service (24 hours per day, 365 days per year)

HN9500	HX
Customer Training Hughes has a professional Technical Training Group, whose objective is to provide Customers with world-class training in support of Hughes products and services. Hughes will also provide training to the Customer on use of the Customer Gateway (as described in section 15.0). This training is typically conducted online and can be easily conducted in 1- or 2-hour long sessions. The Customer training will ensure that once the network implementation begins, the appropriate Customer personnel will be familiar with Hughes products and services.	Customer Training Hughes has a professional Technical Training Group, whose objective is to provide Customers with world-class training in support of Hughes products and services. Hughes will also provide training to the Customer on use of the Customer Gateway (as described in section 15.0). This training is typically conducted online and can be easily conducted in 1- or 2-hour long sessions. The Customer training will ensure that once the network implementation begins, the appropriate Customer personnel will be familiar with Hughes products and services.
Support Technical	Support Technical
<ul style="list-style-type: none"> Tier 1 Tier I support is available at an additional cost. 	<ul style="list-style-type: none"> Tier 1 Tier I support is at an additional cost.
<ul style="list-style-type: none"> Tier 3 Hughes Technical Support. Technical assistance is available 24 hours a day, 7 days a week. We recommend that remote problems/status updates be reported/viewed via a Web access page, on the Customer Gateway. If Hughes does not provide Tier 1; customers help desk is expected to perform Tier 1 troubleshooting and escalate via the Customer Gateway. The Hughes Customer Service Help Desk handles reports of all remote site problems, trouble tickets, field service dispatches, Web page issues, and network issues. If the situation warrants, the Hughes Customer Service Help Desk will escalate a problem to the next technical level for resolution. 	<ul style="list-style-type: none"> Tier 3 Hughes Technical Support. Technical assistance is available 24 hours a day, 7 days a week. We recommend that remote problems/status updates be reported/viewed via a Web access page, on the Customer Gateway. If Hughes does not provide Tier 1; customers help desk is expected to perform Tier 1 troubleshooting and escalate via the Customer Gateway. The Hughes Customer Service Help Desk handles reports of all remote site problems, trouble tickets, field service dispatches, Web page issues, and network issues. If the situation warrants, the Hughes Customer Service Help Desk will escalate a problem to the next technical level for resolution.
Support Billing	Support Billing
<ul style="list-style-type: none"> Tier 1 Tier I support is available on some plans at an additional cost. 	<ul style="list-style-type: none"> Tier 1 Tier I support is available on some plans at an additional cost.
<ul style="list-style-type: none"> PM Support Billing related questions will be directed to the PM. 	<ul style="list-style-type: none"> PM Support Billing related questions will be directed to the PM.
Inventory Management The Program Manager will review the details during the program kick-off meeting.	Inventory Management The Program Manager will review the details during the program kick-off meeting.
Proactive Monitoring (Managed Service) This is available on some plans at an additional cost.	Proactive Monitoring (Managed Service) This is available on some plans at an additional cost.

HN9500	HX
Support Tools	Support Tools
<p>Only available for network with more than 2 sites. Requires dedicated IP gateway at the Hughes NOC</p> <ul style="list-style-type: none"> • Customer Gateway The Customer Gateway also provides real-time status for the Customer's network. Monitory and customer trouble ticket including access to the field service event and tracking of installation (if installations are performed by Hughes). • Network Monitoring- Performance Management Customer Gateway-NMP: Traffic analysis performance reporting. Review the traffic and perform analysis on future bandwidth requirement. 	<p>Only available for network with more than 2 sites. Requires dedicated IP gateway at the Hughes NOC</p> <ul style="list-style-type: none"> • Customer Gateway The Customer Gateway also provides real-time status for the Customer's network. Monitory and customer trouble ticket including access to the field service event and tracking of installation (if installations are performed by Hughes). • HX Network Management System (ExpertNMS™) (Not available externally) NetExpert provides Hughes operators with a comprehensive overview of their network's performance and the ability to quickly identify the root cause of performance issues.
Reports Monthly customer reports provide detailed information and analysis regarding aspects of your VSAT network and its performance. Each month a report package will be posted to the Customer Gateway consisting of:	Reports List not available at this time.
<ul style="list-style-type: none"> • Monthly availability analysis % in bar chart format • Outage analysis detail report • Remote outage analysis percentage report • Master site list summary • Master site list report • Newly commissioned sites list • Customer remote service performance summary • Remote maintenance field services metrics <p>This report package, which is compiled from Hughes' in-house database, is posted within the <u>first 10 days of each month</u>. The following paragraphs contain a detailed description of the monthly report components.</p>	

2.0 MANAGED NETWORK SERVICES – LARGE SCALE NETWORKS

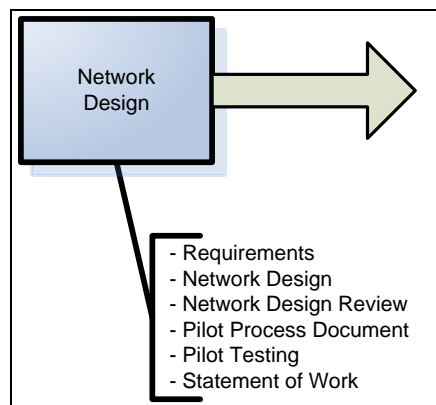
The Hughes approach to providing managed network services and fulfilling Customers' needs and applicable Service Level Agreements (SLAs) can be organized into four major areas:

- Network design
- Implementation
- Ongoing operations and support
- Application support



Each of these areas is described in the following subsections.

Network Design



Understanding Customer Requirements

Hughes' account managers, sales engineers, and Program Managers will work with the Customer to understand the existing and planned applications, both from a technical point of view and with respect to the impact on operational objectives. The Hughes team will collect and assimilate this information through interviews and meetings with the Customer, exchange of Statements of Work, and other network documentation.

Network Design

Once the detailed requirements are understood, the Hughes team will develop a more detailed network design for the Customer, which will encompass a variety of points, including the technical configuration and the network implementation plan. Feedback and suggested modifications from the Customer will be incorporated into the design.

Proof of Concept Testing

After the network design has been reviewed by the Customer, Hughes will propose a pilot or proof of concept to demonstrate the functionality and performance of the network. This pilot or proof of concept

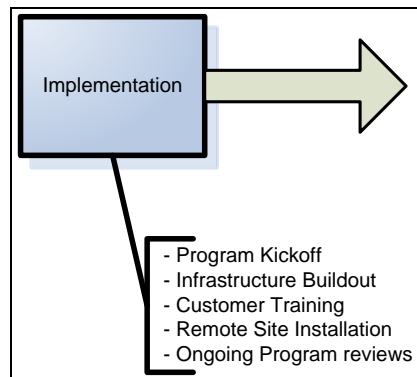
test will be planned, coordinated, and documented through a *Pilot Process Document*. The Hughes sales engineering team will create this document for the Customer's review; then, as the pilot is conducted and test results are gathered, the document will be updated. The Customer's applications can easily be demonstrated through testing at the Hughes pilot labs in Germantown, MD. This can usually be done quickly on existing Hughes network infrastructure without the need to deploy network equipment at Customer locations.

During the pilot, Hughes engineers, working together with the Customer, will optimize the network configuration and demonstrate performance of the Customer applications. Hughes will also document any unique installation or network cutover procedures, test results, and the final pilot network configuration that will be used as the benchmark configuration for the production network.

Statement of Work

During this phase of the network design, Hughes will create a Statement of Work (SOW) that will be integrated into the Agreement between Hughes and Customer. This SOW will be used by the Hughes implementation team to define the implementation and service deliverables.

Implementation



Program Management

To provide quality network implementation and ongoing operational support Hughes has developed an extensive program management organization with carefully structured and proven procedures.

The Hughes Program Manager serves as the single point of contact within Hughes to manage and coordinate all resources and activities associated with the network implementation.

The Hughes Program Manager will have responsibility for ensuring that proper coordination takes place between Hughes and Customer personnel. Typically, the deliverables from the Hughes program management team are as follows:

- Project plan and implementation schedule
- Customer site installation specification
- Coordination of overall site installation process
- Implementation of site maintenance plan
- Reporting and periodic project status reviews
- Contract administration as required

With a single point of contact (the Program Manager) responsible for managing the complete implementation of the network, Customers can stay focused on their own strategic initiatives and projects and not have to allocate precious technical resources to network implementation and management.

Network Infrastructure

Once the network design, pilot testing, and SOW are complete, the network infrastructure components required to begin the network implementation will be installed, configured, and tested by the Hughes engineers. Examples of the type of network infrastructure components that will be required for Customer are:

- IP Gateways at the Hughes NOC
- Connection between the IP Gateways and the Customer Data Center

The Hughes Program Manager will coordinate and manage this activity and report progress to the Customer on a regular basis.

Customer Training

Hughes has a professional Technical Training Group, whose objective is to provide Customers with world-class training in support of Hughes products and services. Hughes will also provide training to the Customer on use of the Customer Gateway (as described in section 15.0). This training is typically conducted online and can be easily conducted in 1- or 2-hour long sessions.

The Customer training will ensure that once the network implementation begins, the appropriate Customer personnel will be familiar with Hughes products and services and will know how to access the proper information needed to do their jobs.

Remote Installation

Currently, over 200 installation teams are deployed throughout the United States performing installations for Hughes Customers.

Hughes utilizes a specially designed online database to support its installation activity. All installation personnel throughout the country have access to the online database system and the Hughes electronic mail system. The Hughes Program Manager and the Customer can access this installation activity database through the Customer Gateway.

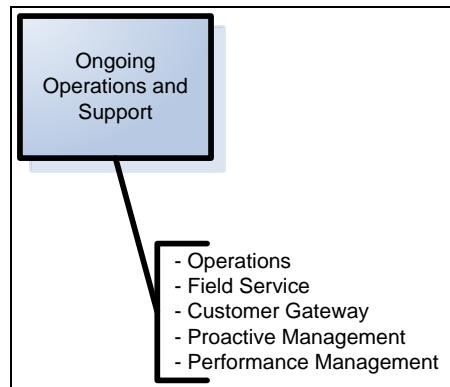
The Customer Gateway is used for installation requests and installation activity tracking. The Customer Gateway allows the Customer to track installation schedules and installer arrival and departure times in real time. For an initial order of remote sites, an Excel spreadsheet will be created listing the sites to be installed. This spreadsheet is then uploaded into the online Web-based system, and the Customer can begin tracking the installation of the sites. Also, the Customer can click the Installation Portal camera icon to view the photographs of a completed service order for installation and/or site condition confirmation.

Ongoing Program Reviews

During the network implementation phase of the program, communication between Hughes and Customer will be essential to ensure that the Customer's day-to-day operations are not being impacted by the Hughes implementation and that the network implementation is proceeding as planned. Based on guidance from the Customer, the Hughes Program Manager will establish regular program updates, either through face-to-face meetings, teleconferences, or regular electronic or written reports. The Hughes program team is on call 24x7 and always available in the event that there are immediate issues that need

resolution. Furthermore, through the Hughes Customer Gateway, the Customer can always get real-time updates with respect to installation status and schedule, remote site status, trouble ticket updates, etc.

Ongoing Operations and Support



As the network is implemented, Hughes will continue to provide support through the:

- Account Manager, as needed
- Program Manager, as needed
- Quarterly Program Reviews
- Semiannual on-site network audits
- Annual executive briefing

Operations

HughesNet services in the US are provided via three NOCs located in Germantown, MD; Southfield, MI; and North Las Vegas, NV. Each facility is a state-of-the-art telecommunications center from which Hughes monitors, manages, and controls its broadband services. All facilities are staffed by Hughes technicians 24 hours a day, 7 days a week, and 365 days a year. Each facility is a carrier-class site employing extensive backup systems to allow for extended, self-contained operation. Using both proprietary and industry-standard tools, the Hughes NOCs continually monitor all enterprise customer networks for any signs of nonconformance.

The Hughes operations team is responsible for establishing and implementing the Customer-specific HughesNet configuration. Network tuning and configuration modifications are approved in coordination with the network engineering team and implemented under its oversight.

The Hughes operations team is responsible for supporting the Customer in a wide range of activities, including but not limited to troubleshooting problems, testing and implementation of new applications, capacity planning, consulting with the Customer, and providing guidance on the implementation of new applications that may impact the network.

Field Service

This field service organization will be used to resolve any and all remote site issues at Customer locations. Hardware failures are resolved through replacement of Customer premises equipment. Software issues are usually resolved at the NOC (as all remote software and configuration parameters are downloaded via the network); however, if necessary the field service technician will work with the NOC from the remote site to resolve software or configuration issues.

All field service activity is initiated and tracked through the Hughes Customer Gateway, where Customer support personnel can open tickets; track status (including estimated time of arrival, actual arrival, etc.); and close tickets. There is a well-defined escalation process that ensures problems are resolved in a timely manner and the proper level of technical support is engaged.

Help Desk

The Hughes Help Desk, based in Germantown, Maryland, has remote diagnostic access to all Customer locations. The Help Desk is available 24 hours per day, 7 days per week, and is staffed by technical agents trained in HughesNet products and in providing quality Customer support.

A Help Desk Technical Support Document detailing operational procedures will be presented to the Customer during initial implementation planning meetings. The manual will provide internal escalation procedures; Customer escalation procedures; contact information for escalations; and operational information such as scheduled maintenance windows and how information is exchanged.

Telecommunications fees or surcharges associated with its Service offering.

Hughes understands that the DIR and some agencies may be exempt from the payment of certain taxes and surcharges. Hughes requires a tax exempt certificate to be provided for any entity that is tax exempt. Notwithstanding the foregoing, however, set forth below is a list of some of the taxes that might be applicable to the provision of goods and services by Hughes:

- Sales tax (state and local, if applicable)
- Use taxes
- Texas Universal Service Fees
- Federal Universal Service Fees (this assessment is only applicable on “interstate” telecommunications services, so if all communications services to be provided by Hughes are within the State of Texas, no Federal USF will apply)
- Texas excise taxes
- State and local personal property taxes (these may be applicable in the event the DIR elects to purchase “premium services,” which include the provision of Equipment and are in the nature of a lease)

3.0 SERVICE LEVEL AGREEMENTS

The SLAs described below are designed to set measures against which Hughes' performance will be evaluated and to establish a system of remedies, including liquidated damages (to be applied in the form of credits against future Service Charges), through which the Customer may receive compensation for Hughes' failure to achieve its Service Level commitments. The SLAs specify (i) the metrics to be satisfied and reported on for Services; (ii) a numerical standard representing the minimum performance expected from Hughes (the "Service Levels"); and (iii) Customer's remedy whenever Hughes fails to meet the Service Level. Any such credit or liquidated damages shall be the Customer's sole and exclusive remedy for any failure by Hughes to meet these Service Levels. They will be applied only toward the monthly recurring Service Charges (exclusive of any equipment lease charges), and, for any calendar month, shall not exceed the total Services Charges for such month.

The following schedule describes the Service Level Agreements and Service Level Objectives:

- Service Level 1: Network Availability
- Service Level 2: Throughput
- Service Level 3: Time to Restore
- Service Level 4: Time to Install
- Service Level 5: Round Trip Delay
- Service Level 6: Chronic Sites
- Service Level 7: Monthly Service Reports

3.1 DEFINITIONS

For the purposes of this schedule, the following terms have the meanings set forth below. If any capitalized term is used in this Attachment but is not defined below or elsewhere herein, the definition set forth in the Agreement or its other attachments shall apply.

- **Help Desk** means Customer's Help Desk is accountable for all site communications issues and resolutions.
- **VSAT Site** means a site where a VSAT is to be installed by Hughes.
- **Customer Premises Equipment (CPE)** means the equipment and other network hardware that the Customer (or its agent or assignee) manages, and that resides at a site.
- **Demand Services** means certain supplementary services that Hughes may perform upon the request of the Customer, including supplementary maintenance and repair services, which are outside the scope of the Services herein described.
- **Throughput** means the volume of data traversing the network, stated in a per-hour average volume of bits per second.
- **NOC** means the Hughes Network Operations Center.
- **Outage Minutes** means each minute Network Service is determined to be unavailable.
- **Problem** means an error, defect, or omission related to the Equipment, Installation Service, or Services.

- **Scheduled Outage** means the preplanned, regularly scheduled interruptions, or all network operations or Services.
- **Commencement Date** is the start of the measurement period for each Service Level is specified in each description.

3.2 SERVICE LEVELS

The following Service Levels apply to the VSAT Equipment, Installation Services, and Services at all sites:

3.2.1 Service Level 1: Network Availability

Metric	Inputs/Calculations	Measurement Window	Service Level Requirement
Network Service Availability commences on the first calendar day of the month, and ends on the last calendar day of the month.	<p>The duration of a Service interruption is measured by the number of minutes during the Scheduled Service Time that elapse from the time that a trouble ticket is opened to the time that the Service has been restored. Scheduled Service Time shall be deemed to be 24 hours a day, 7 days a week. The availability for a given calendar month shall be a percentage. This figure will include both individual site outages as well as network-level outages. A site is included in the calculation after it has been in service for 1 full calendar month. The formula for calculation of network availability is set forth below:</p> $((SST * X) - SOM) \div (SST * X)$ <p>Where:</p> <ul style="list-style-type: none"> • SST = Scheduled Service Time • X = Average Number of sites in the network for the applicable month • SOM = Aggregate site outage minutes in a calendar month) 	Monthly	Not less than 99.7% per month, excluding dial backup

- The commencement date for this Service Level will be 90 days after network rollout has begun or when at least 100 sites have been installed, whichever comes first.
- Conditions and Exclusions:

No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:

- The failure or nonperformance of any Customer-provided facilities or equipment, or third-party facilities or equipment acquired by Hughes on behalf of the Customer, including any out-of-tolerance earth station conditions not caused by Hughes

- The fault, negligent act, or negligent failure to act of Customer, its employees, agents, or invitees
 - Preventive maintenance, and/or other scheduled Service outages (when done pursuant to a preventive maintenance schedule provided by Hughes) as may be necessary to maintain the Services in satisfactory operating condition, to provide additional system capacity, to protect the overall performance of the Services, or for any other reasonable cause
 - An event of Force Majeure suspending Hughes' performance obligations
 - For trouble tickets requiring site visits, the time outside the maintenance coverage is not counted toward this Service Level. For example, if the Customer has Normal Service Coverage with response times between 9:00 a.m. and 5:00 p.m., the time outside the contracted coverage hours will not count as outage minutes in the event of an individual site outage.
 - All sites to which Hughes is not providing remote maintenance services shall be excluded from the calculation of network availability
- c. Service Level credits issued by Hughes to Customer for failure to meet this Service Level are as follows:

Monthly Network Service Availability	Service Level Credit
99.7% or greater	No credit
99.4%–99.69%	2% of the monthly per site Service Charge times the number of sites in the network
99%–99.39%	5% of the monthly per site Service Charge times the number of sites in the network
98%–98.99%	10% of the monthly per site Service Charge times the number of sites in the network
Less than 98%	20% of the monthly per site Service Charge times the number of sites in the network

3.2.2 Service Level 2: Throughput

Metric	Inputs/Calculations	Measurement Window	Service Level Requirement
VSAT throughput will be measured on receipt of report from Customer of a suspected violation of this Service Level.	<p>Throughput is defined as a bit-per-second measurement based on the total transfer time in seconds of a measured object or file of a given size calculated in kbytes. Hughes will provide a minimum throughput for each site subscribing the defined Enterprise Service Plans.</p> <p>Upon the opening of a trouble ticket by Customer on a site suspected of being in violation of this Service Level, Hughes will measure the Customer's upstream and downstream network throughput. This measurement will be performed by a Hughes server in the NOC. The server will measure the network throughput of actual Customer transfers as they are being transmitted and received. A minimum of 100 measurements per day for 7 days will be required. The measurement process will not impact the performance of the Customer's application.</p>	As required	See Pricing Tables

a. Conditions and Exclusions

- This Service Level only applies to transactional-based applications with numerous bulk file transfers and shall not apply to streaming type applications.
- This Service Level is not applicable if the Customer's applications and number of users are not consistent with the specified definition of the particular Service Plan in use. Should the Customer's usage exceed the intended purpose of the Service Plan, Hughes and the Customer will meet to discuss other appropriate service plans or how much additional capacity is required to accommodate the Customer's additional data traffic. Such discussion will address both current and future traffic
- No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:
 - The failure or nonperformance of any Customer-provided facilities or equipment, or third-party facilities or equipment acquired by Hughes on behalf of the Customer, including any out-of-tolerance earth station conditions not caused by Hughes
 - The fault, negligent act, or negligent failure to act of the Customer, its employees, agents, or invitees
 - Preventive maintenance and/or other scheduled Service outages (when done pursuant to a preventive maintenance schedule provided by Hughes) as may be necessary to maintain the Services in satisfactory operating condition, to provide additional system capacity, to protect the overall performance of the Services, or for any other reasonable cause
 - An event of Force Majeure suspending Hughes' performance obligations

b. Remedy

If less than 85% of the measurements indicate that this Service Level is not being met, Hughes shall modify the network parameters within 15 days of the test. Once these modifications have been completed, similar measurements will be taken over the next 15 days, and a report will be provided to the Customer showing the results of these measurements. In the event that the required throughput is not still being met (for at least 85% of the measurements) after the network modifications have been implemented, Hughes will then provide the Customer a credit in the subsequent billing cycle according to the following table:

Percentage of Measurements Meeting the Applicable Service Level	Service Level Credit
85% or greater	No credit
75% to 84.99%	5% of the monthly per site Service Charge for the applicable site
60%–74.99%	10% of the monthly per site Service Charge for the applicable site
50%–59.99%	20% of the monthly per site Service Charge for the applicable site
Less than 50%	50% of the monthly per site Service Charge for the applicable site

3.2.3 Service Level 3: Times to Restore

Metric	Inputs/Calculations	Measurement Window	Service Level Requirement
Service restoration completed within the Total Time to Restore period.	<p>Restoration time will be calculated from the opening of a trouble ticket to the end of the Time to Restore.</p> <p>In the event the ticket is opened by Hughes as a result of fault detection of the outage proactively, the Restoration time commences upon the verification of the fault by the Customer's Tier 1/Tier 2 Help Desk. If Hughes is performing Tier 1/Tier 2 Help Desk support for the Customer, confirmation of the outage comes from Hughes' internal Help Desk.</p>	Per incident report monthly	For sites that have experienced equipment failures that required field service dispatch, Hughes will restore service in 90% of the instances within the time period specified in Attachment I for the maintenance response plan selected, plus 3 hours.

a. Conditions and Exclusions

- This Service Level only applies to sites located within the contiguous United States.
- This Service Level only applies to sites that are receiving remote maintenance services no less comprehensive than “Next Calendar Day” service coverage; e.g., sites with “Next Business Day” coverage are not eligible for this Service Level.
- This Service Level shall commence at the effective date of the Agreement.
- No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:
 - The failure or nonperformance of any Customer-provided facilities or equipment, or third-party facilities or equipment acquired by Hughes on behalf of the Customer, including any out-of-tolerance earth station conditions not caused by Hughes.
 - The fault, negligent act, or negligent failure to act of the Customer, its employees, agents, or invitees.
 - Preventive maintenance and/or other scheduled Service outages (when done pursuant to a preventive maintenance schedule provided by Hughes) as may be necessary to maintain the Services in satisfactory operating condition, to provide additional system capacity, to protect the overall performance of the Services, or for any other reasonable cause.
 - An event of Force Majeure suspending Hughes’ performance obligations.
 - The call for remote maintenance was a request for Demand Services.
 - Problems due to defective facilities at the VSAT site (e.g., water leakage) or an operating environment at the VSAT site that is not in compliance with Hughes’ documentation (e.g., no air conditioning where required).
 - The failure of any device, beyond the demarcation points for Services to be provided by Hughes.
 - Hub or NOC outage minutes counted against Service Level 1 (Network Service Availability) will not be counted against Service Level 3 (Time to Restore).
 - Service level credits will not be imposed until Services are being delivered to 100 sites. However, all Service Level data will be tracked and reported to the Customer for all sites following execution of the Agreement.
- The following situations will pause the Service Level 3 timer:
 - Hours during which a site is unavailable for access (e.g., remote site is closed).
 - Hours outside the contracted maintenance coverage selected by the Customer.
 - If a Customer employee or landlord prevents the Hughes technician from entering the store or delays the technician from starting or completing repairs, Hughes shall immediately notify the Customer Help Desk to report and document this event, and the Service Level 4 timer will be paused. The timer will restart once the obstruction no longer exists.

b. Remedy

For each site above the 10% allowance that has not met this Service Level in a given calendar month, Hughes will pay Customer liquidated damages in the form of a credit in the amount of 10% of the Service Charge for the applicable site.

3.2.4 Service Level 4: Time to Install

Metric	Inputs/Calculations	Measurement Window	Service Level Requirement
Time to Install commences when an order is placed and ends when the site is installed and functioning.	The number of installations completed on-time in a month (as defined in the service level requirement).	Per incident report monthly	For VSAT sites, Hughes will install at least 90% of all locations released for a standard commercial installation within 30 calendar days of release of the order.

a. Conditions and Exclusions

- This Service Level only applies to sites located within the contiguous United States.
- The time period referenced in this Service Level commences when the site is released by the Customer with all information required by Hughes for installation to proceed, and Hughes has confirmed the order. The Customer shall have the responsibility to supply accurate site list information to facilitate order processing and installation.
- This Service Level shall not apply to the initial order rollout or any other large-scale rollouts. In such cases, the Time to Install Service Level, if any, will be as mutually agreed by the parties.
- In the event that the site is initially released as a standard installation but Hughes and/or Customer later determines that a standard installation is not feasible, this Service Level will not apply to such site.
- This Service Level shall not apply to instances where Hughes' terrestrial service provider rejects the order, or sites that initially qualified for services but where the installation could not be completed.
- This Service Level will not apply to sites where the Customer changes the due date with less than 30 calendar days notice or in instances where the Customer or site personnel prevent an installation from occurring.
- No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:
 - The failure or nonperformance of any Customer-provided facilities or equipment, or third-party facilities or equipment acquired by Hughes on behalf of Customer, including any out-of-tolerance earth station conditions not caused by Hughes
 - The fault, negligent act, or negligent failure to act of the Customer, its employees, agents, or invitees
 - An event of Force Majeure suspending Hughes' performance obligations

b. Expedited Installations

Customer may request an expedited installation for the charge specified in Attachment II for sites with less than 14 days of lead time. These sites are excluded from the calculation of performance for this Service Level. If an expedited installation is not completed within the agreed time frame, the expedite fee will be waived.

c. Remedy

For each site above the 10% allowance not meeting the SLA in a given calendar month, Hughes will provide the Customer liquidated damages in the form of a credit as follows:

Number of days after the applicable 30-day window in which the installation was completed	Service Level Credit
Each site in excess of the 10% allowance that is 10 or fewer business days late	10% of the applicable monthly Service Charge
Each site in excess of the 10% allowance that is more than 10 business days late	20% of the applicable monthly Service Charge

3.2.5 Service Level 5: Round Trip Delay

Metric	Inputs/Calculations	Measurement Window	Service Level Requirement
Round trip delay will be measured on receipt of report from the Customer of a suspected violation of this Service Level.	<p>Round trip delay is defined as the time it takes a packet to be transmitted from the Hughes NOC to a remote site and return (or vice versa).</p> <p>Upon the opening of a trouble ticket against the site suspected of being in violation of this Service Level, Hughes will initiate a test by measuring the round trip delay between the Hughes NOC and the suspect site.</p>	Per incident report monthly	For VSAT sites subscribing to a standard service plan, Hughes will use commercially reasonable efforts to ensure that Customer's satellite round trip delay is below 875 ms at the 75 th percentile.

a. Conditions and Exclusions

- During the conduct of the test referenced above, other traffic transmitted to or received from the suspected site should be minimized.
- No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:
 - The failure or nonperformance of any Customer-provided facilities or equipment, or third-party facilities or equipment acquired by Hughes on behalf of the Customer, including any out-of-tolerance earth station conditions not caused by Hughes

- The fault, negligent act, or negligent failure to act of the Customer, its employees, agents, or invitees
- Preventive maintenance and/or other scheduled Service outages (when done pursuant to a preventive maintenance schedule provided by Hughes) as may be necessary to maintain the Services in satisfactory operating condition, to provide additional system capacity, to protect the overall performance of the Services, or for any other reasonable cause
- An event of Force Majeure suspending Hughes' performance obligations

b. Remedy

In the event that Hughes fails to meet this service level, Hughes shall take appropriate steps to remedy the problem within 30 days after completion of the applicable test. If Hughes cannot remedy the problem within said 30 day period, then Hughes will pay the Customer liquidated damages in the form of a credit as follows:

For VSAT sites:

- ≤200 ms over SLA: 2% of the site's monthly per-site service charges
- 201 – 400 ms over SLA: 5% of the site's monthly per-site service charges
- More than 400 ms over SLA: 10% of the site's monthly per-site service charges

3.2.6 Service Level 6: Chronic Sites

Metric	Inputs / Calculations	Measurement Window	Service Level Requirement
The number of trouble tickets opened that result in a field service dispatch.	Hughes will keep track of the number of trouble tickets resulting in a field service dispatch during a calendar month.	Per incident	No sites should experience more than two outages resulting in a trouble ticket during any calendar month.

a. Conditions and Exclusions

- No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:
 - The failure or nonperformance of any Customer-provided facilities or equipment, or third-party facilities or equipment acquired by Hughes on behalf of the Customer, including any out-of-tolerance earth station conditions not caused by Hughes;
 - The fault, negligent act, or negligent failure to act of the Customer, its employees, agents, or invitees;
 - Preventive maintenance and/or other scheduled Service outages (when done pursuant to a preventive maintenance schedule provided by Hughes) as may be necessary to maintain the Services in satisfactory operating condition, to provide additional system capacity, to protect the overall performance of the Services, or for any other reasonable cause;
 - An event of Force Majeure suspending Hughes' performance obligations

b. Remedy

Upon verification that a site is a chronic site, Hughes will have 30 days to remedy the problem. In the event that Hughes cannot remedy the problem within said period, the Customer may cancel the site without penalty or elect to switch the site to another Hughes service

3.2.7 Service Level 7: Monthly Service Reports

Metric	Inputs/Calculations	Measurement Window	Service Level Requirement
Reports will be available to the Customer by the last day of the month following the month in which applicable data has been collected.	Delivery to the Customer of the applicable reports.	Monthly or as otherwise agreed	100%

a. Conditions and Exclusions

- Monthly reports on Service Levels 1, 3, 4, and 6 will be available via the Customer Gateway. The remaining Service Levels will be reported on within 30 days based upon trouble ticket requests.
- No failure to meet this Service Level shall count toward the calculation of liquidated damages when due to any of the following causes:
 - An event of Force Majeure suspending Hughes' performance obligations

b. Remedy

The parties agree that this Service Level is a Service Level objective and that Service Level credits will typically not accrue for this Service Level. However, if Hughes fails to meet the requirement more than one time in a calendar year (e.g., Hughes is late by 5 days on two different occasions), upon notice from the Customer to Hughes, this Service Level will immediately convert to a Service Level Agreement. Hughes will provide a credit to the Customer in the amount of \$500 for each late report.

3.3 PAYMENT OF SERVICE LEVEL CREDITS

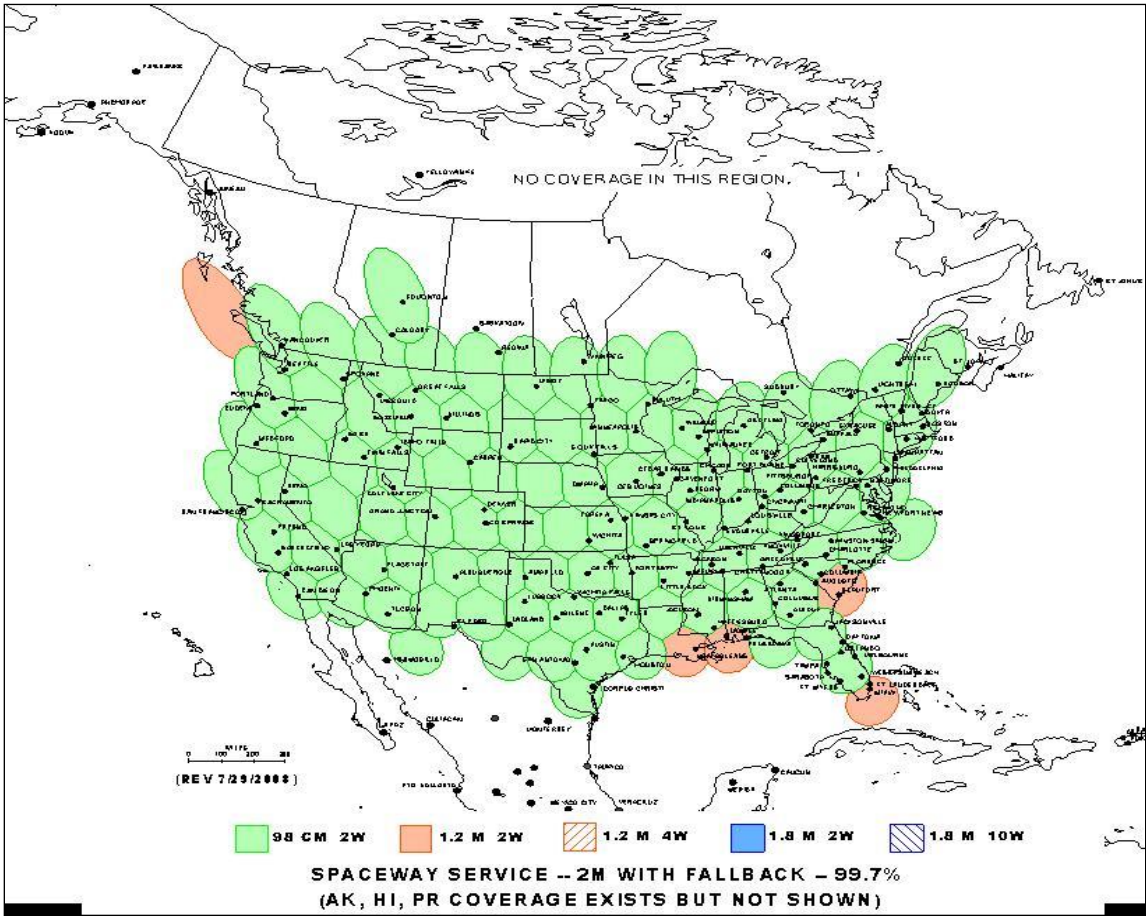
All requests for liquidated damages due to a suspected SLA violation must be initiated by the Customer to the Hughes Program Manager within 60 days after the end of the applicable calendar month. Requests must have reference data substantiating the assertion that the specific SLA metric has not been met. Upon researching the request, Hughes will make the final decision as to whether the credit will be granted and will provide the data justifying the decision if such a request is denied.

Calculation of liquidated damages will be based on the monthly per-site Service Charges, excluding any taxes. For terrestrial services (DSL, cable, or T-1), this charge is defined as the remote site related monthly charges. For VSAT, the monthly Service Charge is defined as the remote site related monthly charge excluding amounts attributable to equipment leases.

Service Level credits due to the Customer will be separately reported and separately invoiced as a credit to the Customer each month.

4.0 GEOGRAPHICAL COVERAGE

Hughes Satellite Coverage:



5.0 FIELD SERVICE

5.1 CORRECTIVE MAINTENANCE (FIXED VSAT)

HNS will provide corrective maintenance for remote satellite terminals in accordance with the terms provided in this Agreement and will restore Customer's malfunctioning Equipment to good working condition by performing the following corrective maintenance, as required:

- Diagnostic testing to determine the existence and cause of the malfunction
- Removal and replacement of any malfunctioning field replaceable unit (FRU)
- Reorientation (repointing) of the antenna subsystem in the event of misalignment
- Repair or replacement of Equipment interconnecting cables
- Reloading initializing instructions and re-commissioning
- Verification of proper operation and completion of service report
- Notification to HNS and the Customer host that Equipment has been restored to operational status

5.1.1 Remote Maintenance Excludes any of the Following (Fixed VSAT)

- Maintenance, repair, or replacement of parts damaged or lost through catastrophe, accident, lightning, theft, misuse, fault, or negligence of the Customer or end-user, or causes external to the Equipment, including, but not limited to, failure of, or faulty, electrical power or air conditioning, operator error, failure, or malfunction of data communication Equipment not provided to Customer by HNS, or from any cause other than intended and ordinary use.
- Changes, modifications, or alterations in or to the Equipment by anyone other than HNS or its Affiliates, subcontractors, and other agents, other than HNS-approved upgrades and configuration changes.
- De-installation, relocation, or removal of the Equipment or any accessories, attachments, or other devices.
- Tier 1 and Tier 2 Call Center support.

5.2 REMOTE MAINTENANCE OPTIONS

Remote Maintenance Coverage Options	Description
Next Business Day (NBD) Field Service	(Service Coverage Hours are 8:00 a.m. to 5:00 p.m. local time, Monday through Friday, except holidays, beginning the next business day after a call is received.) The Customer's call shall be considered received the same day when received by Hughes between the hours of 8:00 a.m. and 5:00 p.m., local time at the remote site, Monday through Friday, holidays excluded. Calls shall be considered received the following business day if received by Hughes at any other time.

Remote Maintenance Coverage Options	Description
Next Day (ND) Field Service	(Service Coverage Hours are 8:00 a.m. to 5:00 p.m., local time, 365 days per year, beginning the next day after a call is received.) The Customer's call shall be considered received the same day when received by Hughes between the hours of 8:00 a.m. and 5:00 p.m., local time at the remote site. Calls shall be considered received the following day if received by Hughes at any other time.
9x5 Field Service	(8:00 a.m. to 5:00 p.m., local time, Monday through Friday, except holidays)
12x6 Field Service	(8:00 a.m. to 8:00 p.m., local time, Monday through Saturday)
12x7 Field Service	(8:00 a.m. to 8:00 p.m., 365 days per year)
18x7 Field Service	(6:00 a.m. to 12:00 midnight, 365 days per year)
24x7 Field Service	(24 hours per day, 365 days per year)

After authorization of Field Service Dispatch, Hughes will dispatch a Customer Service Representative (CSR) to be on site at Customer's premises, in accordance with **Table 5-1**, given below (measured from the time of authorization by Hughes). For sites with NBD coverage, Hughes will dispatch a CSR to be on site before the end of the next Hughes business day after the call was received by Hughes. For sites with ND coverage, Hughes will dispatch a CSR to be on site before the end of the next calendar day after the call was received by Hughes.

Table 5-1. Maintenance Response Timetable	
Distance from Service Office	Response Time
0–50 miles	4 hours
51–100 miles	5 hours
101–150 miles	6 hours
151–200 miles	10 hours
Over 200 miles	24 hours

Response times will be met for at least 90% of all service calls placed in a given calendar month.

5.3 CURRENT SERVICE CITY LIST

Listed below are the field service offices in the State of Texas. This may change if offices are added or moved.

City	State
Dallas	TX
Whitehouse	TX
Houston	TX
Beaumont	TX
San Antonio	TX
Corpus Christi	TX

City	State
Round Rock	TX
Plainview	TX
Big Spring	TX
El Paso	TX

5.4 CUSTOMER RESPONSIBILITIES

- Customer hereby grants HNS and HNS-authorized representative access, subject to Customer's reasonable security restrictions, to Equipment and related locations and areas of Customer's facilities and premises, and will arrange permitted access to areas of third-party facilities and premises for the purpose of HNS performing the work required under this Agreement. HNS will comply with any of Customer's reasonable rules and regulations for access of which HNS has been notified. Any delays or return calls resulting from lack of free access or authorization to perform maintenance may, at HNS' option, be billed at the Demand Service Charges indicated in Exhibit A.
- Customer shall keep the HNS Program Manager apprised of any Customer contacts who will act as a point of contact for Remote Equipment maintenance administration within Customer's organization.
- Customer shall provide HNS Service representatives with access to electrical power, water, and other utilities, as well as telephone access to the Customer hub as required for efficient Service. Customer shall also provide at each Remote Equipment site, telephone access to the hub for maintenance service personnel.
- Customer shall provide safe access to Equipment on Customer premises and will maintain the environment where the Equipment is located in a safe and secure condition.
- Customer hub and/or data center personnel shall cooperate with and assist the HNS Service representative in providing maintenance services. The Customer hub shall be adequately staffed during service coverage hours to provide such assistance.
- Customer will maintain minimum site-environment conditions, as specified in Remote Equipment system documentation.

6.0 SERVICE DELIVERY

6.1 FIXED VSAT INSTALLATION DESCRIPTION

Standard Enterprise installation applies to enterprise locations 1-2 stories from the ground and includes:

- Antenna installation on an outside wall, roof, ground, or other approved structure with one of the following mounting options:
 - All non-penetrating roof mounting options (appropriate mount for the antenna size)
 - Tri-mast wall mount
 - Ground pole mount up to approx. **8 ft. (approx. 2 ft. in ground, 5 – 6 ft. out of ground)**
 - All antennas must be mounted a minimum of 5 ft. off the ground (from base of antenna) and out of the reasonable reach of small children. Wall mounts must not be mounted to surfaces or building materials that cannot support the wall mount (for example, stucco, aluminum, or vinyl siding).
- Single or dual IFL Cable run (according to published HNS Guidelines) from antenna location to Indoor Unit (IDU) location. For networks larger than 50 locations, a Customer Installation Specification will define the indoor equipment location.
- Install the indoor unit at designated location. Indoor unit will be located according to the Customer Installation Specification. The designated IDU location must be temperature and environmentally controlled for proper operation.
- Single or Dual IFL cable run (according to HNS guidelines) from antenna to indoor unit. This assumes that the typical cable run will be less than 150 feet, based on the profile of the Customer remote locations. For network implementations where greater than 30% of the locations are in large buildings requiring cable runs longer than 150 feet, additional charges will apply.
- Wall fish and wire mold as required.
- Cat 5 data cable if required and termination at labeled wall plates for all devices.
- Wall fish and wire mold as required.
- The use of necessary tools, including laptop computer and appropriate commissioning software, to install, commission, test, and cutover HNS and Customer systems.
- Grounding in accordance with HNS FSB 1057C.
- Installation of weather seal appropriate cable bushings for all cable points of entry.
- Ballast the mount according to HNS ballast guidelines.
- Activation and commissioning of the system, including cutover of specified devices according to Customer installation specification.
- Comply with all HNS Installation Quality Process Guidelines including signed and completed Installation Reference Sheet with Quality Checklist/Audit Form.

- Installation and activation of VADB Service if ordered with the installation.
- Clean up site and remove any unnecessary boxes and materials.
- Antenna mounting options:
 - Non - penetrating roof mount
 - Tri-mast wall mount
 - Ground pole mount (Limited to 30% of all of the Customer's network)

The Hughes installer will choose the type of antenna mount, based on the specific details of the location. Network implementations that require more than 30% of the locations to have ground pole mounts, or for locations where Customer request a pole mount, even though one is not required, additional charges will apply (see Section B.).

- All ground pole mount antennas will be installed a minimum of 5 ft. off the ground (from base of antenna) and out of reasonable reach of small children. Wall mounts will not be mounted to surfaces or building materials that cannot support the wall mount (for example, stucco, aluminum, or vinyl siding).

6.2 FIXED VSAT DEINSTALLATION DESCRIPTION

De-installing an existing VSAT at a site is performed by a HNS authorized technician who will:

- De-install the antenna and non - penetrating mount and terminate the IFL cable at the Point of Entry (POE).
- De-install the radio transmitter assembly.
- Remove the cable from POE to the antenna system.
- De-install the indoor VSAT component (IDU) as described in Section B.2.2.
- Pack all of the above VSAT components in a container for safe transport.

6.2.1 Fixed VSAT Relocation/Move Description: Local

Through this service, HNS' authorized installer removes the VSAT from an existing site and moves it to and installs it at a new VSAT site within the same city and/or 100 miles from the first site. HNS technician visits Customer's existing site and performs the de-installation process as described in the previous section. The installer then packs the de-installed VSAT and travels to Customer's new site whereby the VSAT is installed as described in Section B.7.1, above.

6.2.2 Fixed VSAT Relocation/Move Description: Non-local

Through this service, HNS' authorized installer removes the VSAT from an existing site, packs it and ships it to for installation at a new VSAT site that would be in a different city or state. HNS technician visits Customer's existing site and performs the de-installation process as described in Section B.7.2. The installer then packs the de-installed VSAT and ships it to Customer's new site whereby another installer

will install it per Section B.7.1, above. Depending on the time required for the actual shipment of the de-installed VSAT, the new installation may occur up to 21 days from the date of the de-installation.

6.3 INSTALLATION SPECIFICATION AND TEMPLATE

Upon receipt of an order for a network implementation, Hughes will work with Texas DIR and the Customer agency to develop an installation specification. This document will be provided to each Hughes installer for review prior to the commencement of any installation activity. It details the appropriate contact procedures, required equipment, and any necessary configuration information. The installation specification also details coordination information, including the signoff procedures required to certify that the installation is complete.

The following details will be included in the installation specification document:

- Site contact and installation coordination information and procedures
- Equipment configuration and installation specifications (location, mounting, etc.)
- Cabling and connection specifications
- Special instructions regarding integration with Customer devices, if any
- Testing procedures
- Service activation and cutover procedures
- Signoff and release procedures

The Installation Specification will be maintained by Hughes and will be updated over time to reflect changing requirements and lessons learned through the process. The Customer shall sign off on all changes to the installation specification.

6.3.1 Site Installation

Hughes will dispatch one or more technicians to each site to install the applicable Data Service or Fixed Satellite Customer premises equipment. The installer(s) will follow the defined installation process and installation specification for each site to install the equipment, integrate it with other devices, test it, and activate it. If the technician is not able to complete the installation for any reason, the technician will revert the site to the previous technology and report this failure and the reasons for it immediately to the Customer point of contact and the Hughes dispatcher. Upon completion of the installation, the technician will obtain acceptance signoff from the site contact, initiate cutover procedures, and initiate the process to update the tracking database to indicate date and time completed. The Hughes technician will use best efforts to minimize the disruption and any downtime experienced by the site. The technician will clean up all tools and debris before leaving the site.

6.3.2 Installation/De - installation Services

The installation and/or de-installation process for a Fixed VSAT system as described in Section B.2.2.1, above, consists of the following major steps:

1. Customer informs onsite personnel of the planned installation and arranges for access to sites. Customer provides the required installation/de-installation information for the sites. The required installation information includes:
 - a. Contact, Address, Telephone Number
 - b. Alternate Contact, Address, Telephone Number

- c. Site Number, Address
 - d. Building Manager, Address, Telephone Number
 - e. Building Owner, Address, Telephone Number
 - f. Such other information as HNS may reasonably request
2. For Installation orders, HNS performs site surveys at sites identified by HNS as requiring site surveys.
 3. Customer obtains necessary landlord approvals.
 4. For Installation orders, HNS installs and commissions the remote terminal equipment.
 5. Standard installation timeframe is 30 days ARO. Expedited installation time frame is 15 days or less. Expedited VSAT installation requires SIN to be ordered simultaneous to original order.

For vehicle-mounted Mobile VSAT system as described in Section B.2.2.2 above, Customers will be responsible for the delivery and pick up of their vehicles to a HNS designated Installation Company that will install the Mobile VSAT system on the vehicle.

6.4 SERVICE DELIVERY MANAGEMENT

Support for DIR or Customer(s) conferences;

During the network planning and implementation phases of a program, communication between Hughes and Texas DIR and its Customer will be essential to ensure that the Customer's day-to-day operations are not being impacted by the Hughes implementation and that the network implementation is proceeding as planned. Based on guidance from Texas DIR, the Hughes Program Manager will establish regular program updates, either through face-to-face meetings, teleconferences, or regular electronic or written reports. The Hughes program team is on call 24x7 and always available in the event that there are immediate issues that need resolution. Furthermore, through the Hughes Customer Gateway, Texas DIR can always get real-time updates with respect to installation status and schedule, remote site status, trouble ticket updates, etc.

Hughes will continue to provide ongoing support through the

- Account Manager, as needed
- Program Manager, as needed
- Quarterly Program reviews with functional group representation from Hughes
- Semi-annual on-site network audits
- Annual Executive Briefing

Processes and procedures for support of Customers in transition; (Sect. 2.0)

For each network implementation, Hughes will work with Texas DIR and the Customer agency to develop an installation specification. This document will be provided to each Hughes installer for review prior to the commencement of any installation activity. It details the appropriate contact procedures, required equipment, and any necessary configuration information. The installation specification also details coordination information including the signoff procedures required to certify that the installation is complete.

The installer(s) will follow the defined installation process and installation specification for each site to install the equipment, integrate it with other devices, test it, and activate it. If the technician is not able to complete the installation for any reason, the technician will revert the site to the previous technology and

report this failure and the reasons for it immediately to the Customer point of contact and the Hughes dispatcher. Upon completion of the installation, the technician will obtain acceptance signoff from the site contact, initiate cutover procedures, and initiate the process to update the tracking database to indicate date and time completed.

Hughes will publish a catalog of the products and services proposed here as part of this RFO response. The Hughes team (Customer Relationship Manager, Technical Sales Support, and Program Management) will be available, if needed, to answer questions and design specific solutions to meet specific Customer requirements using the products and services in the catalog. Many standard Hughes services can be implemented without this type of interaction, but the support is available for larger or more complex requirements.

Small Office/Home Office Service orders will be received and supported by the Hughes Call Center, which was implemented specifically to provide efficient and accurate support for receiving orders for this service. The Call Center will be trained in the specific details of the CTSA and the Texas DIR program to ensure that quality service is provided during the ordering process.

7.0 SERVICE ORDERING

Service Ordering Process;

Service Ordering

Hughes' Service Ordering for an **FSS network** to be implemented is through the use of an upload spreadsheet, which is a Microsoft Excel spreadsheet that contains all of the pertinent information required for Hughes to implement a Service Order. The Hughes Program Manager will provide the spreadsheet template and will support DIR in the development of systems to create the upload spreadsheet. **SOHO** services can be ordered through the Hughes Government Call center at: **844-817-5287**. Identify that the customer is ordering against the TEXAN-NG contract so the order is routed to the proper Government Call Center agent.

The Hughes team (Customer Relationship Manager, Technical Sales Support, and Program Management) will be available, if needed, to answer questions and design specific solutions to meet specific Customer requirements using the products and services in the catalog. Many standard Hughes services can be implemented without this type of interaction, but the support is available for larger or more complex requirements.

Once the contract line items that are required have been identified, it is expected that the Texas DIR will submit a purchase order to Hughes identifying the deliverables, Customer contacts, and schedule requirements. This order will be received by the Hughes Program Manager and an acknowledgment will be provided to Texas DIR within three business days.

The Hughes Program Manager and the supporting program management organization will enter the order in the Hughes provisioning system. If there is additional specific information required to complete the order, the Program Manager will contact the appropriate Texas DIR or DIR Customer personnel to ensure that these details are entered in the provisioning system. For orders larger than (typically) five remote locations, the Customer is to provide an excel spreadsheet (template provided by Hughes) be completed by the Customer with all of the site-specific details. This spreadsheet will be reviewed by Hughes and then used to electronically upload the site-specific details into the Hughes provisioning system.

The Hughes provisioning system will automatically transmit the detailed information to all of the appropriate support systems within Hughes (network management, Help Desk, billing, installation, field service, etc.) to enable the delivery and support process. The Hughes Program Manager will be able to track and report on the status of each order.

Scheduling processes and standard Service intervals;

Upon acceptance of an order, Hughes will begin scheduling each site for installation. Installations will generally be scheduled in relation to the date the order was placed for installation by Texas DIR and in accordance with the service levels.

Once the orders are entered by Hughes into our provisioning system, the scheduled installation dates will be made available to Texas DIR on the Hughes Customer Gateway. The information will contain the current confirmed date and a history of any schedule changes. The standard Service interval for Fixed Satellite Installations and Small Office/Home Office Business Internet installations is 30 calendar days from receipt of order. The standard Service interval for Virtual Private Network – Dedicated Service is 30 business days from receipt of order.

The Vendor shall work with DIR to integrate its Service Delivery systems with DIR systems including:

Service ordering;

Hughes shall work with DIR to integrate the Hughes Provisioning system and our service ordering process with the DIR systems. The standard Hughes ordering system and process is consistent with the requirements specified in this RFO. Adjustments can be made, if necessary to integrate with the DIR systems.

All TEX-AN NG Services will be ordered and billed to Customers by DIR, with the exception of Local Services and Internet connectivity for non-State agencies, Small Offices and Home Offices (SOHO).)

For Small Office/Home Office Internet services, Hughes will accept orders and send bills directly to the Customers. For Small Office and Home Offices, Hughes has established a TEXAN-NG Customer Call Center to support these activities. To order SOHO Internet Services Call: **844-817-5287**. Identify the order as being against the TEXAN-NG SOHO contract so the order is properly routed to the Government Ordering Personnel.

7.1 SERVICE ORDER IMPLEMENTATION

Hughes uses a common platform for business process automation and service ordering. The architecture and functionality of this platform, called “DSS,” is driven by the business objectives of Process Efficiency, Cost Reduction, and Customer Satisfaction. Order Management, Provisioning, Billing, Customer Support, and Service Assurance are the core functions provided by DSS. Standards-based architecture and interfaces are used for Business-to-Customer (B2C) and Business-to-Business (B2B) transactions. The major functions of DSS are:

- Order management and provisioning
- Billing
- Customer support
- Service assurance

All price quotes will be provided through the Hughes Account Manager and will be delivered in a standard format that clearly delineates the deliverables and price (including contracted rate plus the DIR CRF).

Provide DIR with the required data elements to place a complete and accurate Order for each Service proposed;

The Hughes Program Manager will provide Texas DIR with a standard template for placing orders. Hughes requests that this template be used by DIR to ensure completeness and accuracy.

Order cancellation policies and related penalties, if applicable;

Satellite services (Fixed Satellite Services and Small Office/Home Office Internet services) may be cancelled two weeks prior to installation without penalty. Orders for satellite services that are cancelled less than two weeks prior to installation incur a \$250 penalty. The Customer must notify the Program Manager via email to cancel any order.

For Virtual Private Network – Dedicated Services orders are implemented in a two-step process. The first step is executed by the Local Exchange Carrier (LEC) and the second step is executed by the Hughes installation technician. If the LEC completes its work and, through no fault of Hughes or its installation

subcontractors, the second step of the installation is delayed by more than 2 additional weeks, Customer's monthly service charges for the site will go into effect.

If Customer cancels an order for Virtual Private Network – Dedicated Services within the first 5 days after Hughes receives the order, Customer must pay Hughes only a circuit cancellation charge of \$250 for each site cancelled. However, if Customer cancels an order for Virtual Private Network – Dedicated Services more than 5 days after Hughes receives the order, Customer must also pay a \$99 early termination charge in addition to the circuit cancellation charge.

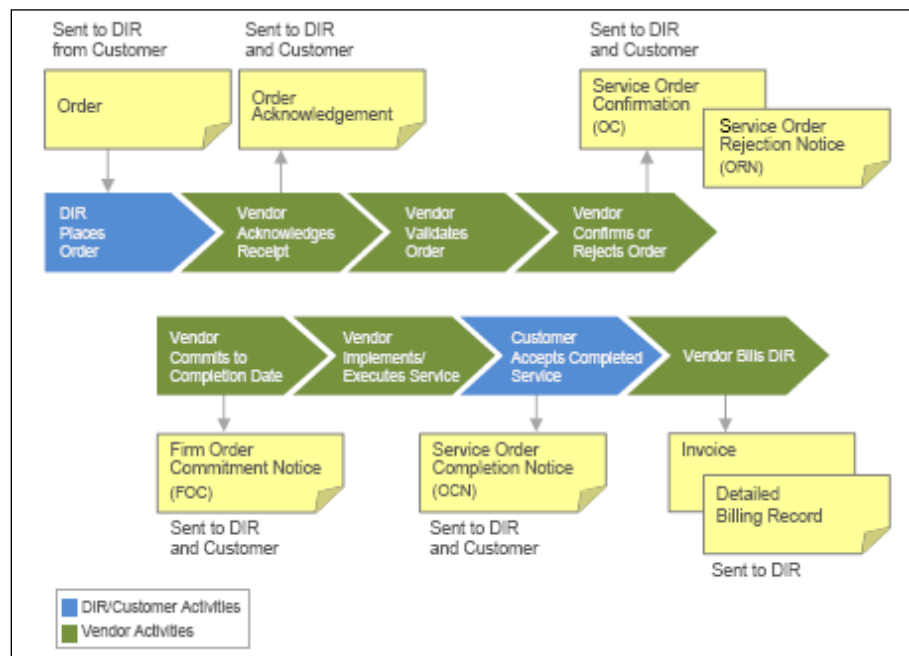
Restrictions or fees associated with Order changes

If Hughes schedules a site visit to install additional equipment or cutover a terrestrial circuit previously installed by the LEC, and Customer reschedules that installation date with less than 7 days prior notice, Customer must pay Hughes an installation cancellation charge of \$200. If Customer reschedules an installation date with at least 7 days prior notice, there is no installation cancellation charge. If an installation is cancelled and not rescheduled, Hughes considers it a cancellation order, and the cancellation charges will apply.

Start and stop service billing dates.

The Service billing start date is the date the service is activated by Hughes and the service billing stop date is the date the service is terminated by Hughes.

The Vendor shall coordinate Service ordering transactions as defined in the following diagram:



7.2 SERVICE ORDER MANAGEMENT

The Vendor shall provide DIR with an Order Process Management Plan in its Response which discloses the Vendor's processes and procedures for maintaining the integrity of the end to end order process which shall include, but not be limited to:

(Believe this is duplicated)

Standard intervals for the following:

1. Order Acknowledgement (OA);

Hughes will provide an order acknowledgement as follows:

- Satellite Services – No later than three business days.
- Virtual Private Network – Dedicated Services – no later than three business days.

2. Order Confirmation (OC);

Satellite Services – included as part of OA.

Virtual Private Network – Dedicated Services – no later than 7 business days from OA.

3. Firm Order Confirmation (FOC);

Satellite Services – no later than 3 weeks from OA.

Virtual Private Network – Dedicated Services – no later than 14 business days from OA.

4. Order Completion Notice (OCN);

Satellite Services – no later than 4 weeks from OA.

Virtual Private Network – Dedicated Services – no later than 30 business days from OA.

5. Order Rejection Notice (ORN);

Satellite Services – no later than 3 weeks from OA.

Virtual Private Network – Dedicated Services – no later than 14 business days from OA.

6. Moves, Adds, Changes, Disconnects (MACD);

Satellite Services – no later than 3 weeks from OA.

Virtual Private Network – Dedicated Services – no later than 30 business days from OA.

7. Order cancellations;

Satellite Services – no later than 3 weeks from OA.

Virtual Private Network – Dedicated Services – no later than 30 business days from OA.

The Vendor shall recognize and accept Orders from DIR that include both a DIR assigned Customer Circuit Record Code (CKR), which ties all location and billing elements together under one Service instance and a DIR assigned Telecommunications Service Record number (TSR).

CKR:	Customer Circuit Record Code
Example:	313100.HCGA.013883.TXNGA
Format:	313100 = agency/division HCGA = circuit call letters 013883 = 6 digit from format: CKRLog.Program TXNGA = Vendor
TSR:	Telecommunications Service Record number
Example:	10060001
Format:	FYMMXXXX (FY = fiscal year, MM = Month)

Hughes will recognize and accept Orders from DIR that include both a DIR assigned Customer Circuit Record Code (CKR), which ties all location and billing elements together under one Service instance and

a DIR assigned Telecommunications Service Record number (TSR). Hughes would recommend setting up a specific site code consisting of three numerical and five digits so the TEXAN sites would be easily identified within the Hughes system.

Order Confirmation (OC) will contain the minimum required data elements as required by the Vendor for its Inventory Management.

The Hughes Order Confirmation will contain the minimum required data elements as necessary for Inventory Management.

The data elements contained in the Service Order (SO) and Order Confirmation Notice (OCN) shall accurately reflect the related price quote and Order.

The data elements in the Service Order and Order Confirmation Notice will accurately reflect the related price quote and Order.

The Vendor shall cite the applicable CKR on all correspondence and acknowledgments for each Service instance throughout the ordering process.

Hughes will cite the applicable CKR on all correspondence and acknowledgments for each Service instance throughout the ordering process.

The Vendor shall cite the applicable CKR on the Monthly Consolidated Invoice.

Hughes will cite the applicable CKR on the Monthly Consolidated Invoice.

The Vendor shall reject an Order for only the following reasons:

Order has a Monthly Recurring Charge (MRC) and does NOT contain both a CKR and a TSR;

Hughes will reject an Order that has a Monthly Recurring Charge and does not contain both a CKR and a TSR.

Order is for a Service not provided by the Vendor under the CTSA; and/or

Hughes will reject an Order for Service that is not provided by Hughes under the CTSA.

Order contains one or more data elements that are incorrect, incomplete, inaccurate or otherwise insufficient.

Hughes will reject an Order that contains one or more data elements that are incorrect, incomplete, inaccurate or otherwise insufficient.

8.0 CHANGE MANAGEMENT

8.1 CHANGE MANAGEMENT IMPLEMENTATION

The Change Management section entails the Requirements to assure that Changes to Vendor Services, the underlying network and support infrastructure are planned for and are introduced in a controlled fashion. It is critical that all Changes which will impact DIR and any Customer are documented and optimized. "Changes" are defined as corrections, enhancements, modifications, additions and replacements.

Configuration changes allow Customers to meet their needs as their network continues to grow. Customer's individual remote and remote port configurations are stored in the Hughes databases.

Some changes, such as adding a new service location, are totally transparent to users and can be made at any time by the operators. Other changes, such as changing the protocol supported on a gateway can interrupt the traffic of all users on the gateway. These changes are normally made during a mini-window or Maintenance Window after scheduling the event with the affected Customer(s).

There are changes, such as adding new components to network infrastructure, that can cause all remote sites to reset and download new code. These changes are scheduled with the Customer(s) well in advance and are implemented during the monthly Maintenance Window.

All changes require Hughes' Change Control Board (CCB) review and approval.

Changes that affect traffic require approval from Hughes Operations management and appropriate Hughes engineering representatives (inroute usage, IP Gateway resets, sizing changes, etc.) are classified as 7-day Window Requests. These are scheduled after receipt of the request, if and only if the changes will not impact other National NOC operational traffic, i.e., the requested changes only impact the requester's network.

Changes that affect more than 5% of a Customer's remote sites or more than one Customer are classified as 10-Day Maintenance Windows Requests. This includes, but is not limited to IPGW resets, software changes, new releases, etc.

Configuration changes are requested through the Customer Gateway. The user can select the Configuration Change option under the Remote Case Management option, identify the site the change is to be performed on, and then describe the requested change.

All configuration changes should be submitted at least 24 hours prior to the requested time and date of the change. The National NOC Manager schedules all changes.

Once a site is operational on the National NOC and a change is requested and implemented, a site fee is levied by the Program Manager, in accordance with contract provisions and is billed with the National NOC services invoice.

The Vendor shall provide in its Response to DIR a Change Management Implementation Plan which shall include but not be limited to:

Contact information for a Change/Release Manager(s) who will at a minimum:

- 1. Attend all relevant Change Management related meetings including weekly conference calls;***

The Hughes Program Manager is responsible for the Texas DIR program. This individual will be identified after award of the CTSA.

- 2. Voice and document concerns of potential negative impact of proposed changes;***

This is the responsibility of the Hughes Network Engineer assigned to the Texas DIR program. This individual will be identified after award of the CTSA.

- 3. Make recommendations for implementation, further analysis, or deferment; and***

This is the responsibility of the Hughes Network Engineer assigned to the Texas DIR program. This individual will be identified after award of the CTSA.

- 4. Be available for consultation should an emergency Request for Change (RFC) be requested.***

Emergency change requests are submitted when it is determined that an event has or could possibly cause an interruption of service. These change requests are subject to the standard change control process as implemented for an emergency situation. This typically means that the duration of the review and approval process (but not the process itself) is abbreviated to meet the needs of the situation.

Non-emergency change requests are received during the normal monthly cycle for maintenance window activities. The Program Manager and Network Engineer will lead these planning and testing activities.

Process and procedures for managing, tracking, and reporting issues, and risks (that impact DIR) to:

- 1. Software;***

Some software changes are totally transparent to users and can be made at any time by the operators. Other changes, such as changing the protocol supported on a gateway can interrupt the traffic of all users on the gateway. These changes are normally made during a mini-window or Maintenance Window after scheduling the event with the affected Customer(s).

There are software changes, such as upgrading to new software release levels, that can cause all remote sites to reset and download new code. These changes are scheduled with the Customer(s) well in advance and are implemented during the monthly Maintenance Window.

All changes require Hughes' CCB review and approval.

Changes that affect traffic require approval from Hughes Operations management and appropriate Hughes engineering representatives are classified as 7-day Window Requests. These are scheduled after receipt of the request, if, and only if, the changes will not impact other National NOC operational traffic, i.e., the requested changes only impact the requester's network.

Changes that affect more than 5% of a Customer's remote sites or more than one Customer are classified as 10-Day Maintenance Windows Requests. This includes, but is not limited to IPGW resets, software changes, new releases, etc.

2. *Hardware;*

Some hardware changes, such as adding a new service location, are totally transparent to users and can be made at any time by the operators. Other changes, such as adding new gateway hardware in the NOC can interrupt the traffic of all users on the gateway. These changes are normally made during a mini-window or Maintenance Window after scheduling the event with the affected Customer(s).

All changes require Hughes' CCB review and approval.

Changes that affect traffic require approval from Hughes Operations Management and appropriate Hughes Engineering representatives (inroute usage, IP Gateway resets, sizing changes, etc.) are classified as 7-day Window Requests. These are scheduled after receipt of the request, if and only if the changes will not impact other National NOC operational traffic, i.e., the requested changes only impact the requester's network.

Changes that affect more than 5% of a Customer's remote sites or more than one Customer are classified as 10-Day Maintenance Windows Requests. This includes, but is not limited to IPGW resets, software changes, new releases, etc.

3. *Network infrastructure;*

Changes to the network infrastructure typically impact the traffic carrying capability of the entire network. These changes are scheduled with the Customer(s) well in advance and are implemented during the monthly Maintenance Window.

All changes require Hughes' CCB review and approval.

Changes that affect traffic require approval from Hughes Operations management and appropriate Hughes engineering representatives (inroute usage, IP Gateway resets, sizing changes, etc.) are classified as 7-day Window Requests. These are scheduled after receipt of the request, if and only if the changes will not impact other National NOC operational traffic, i.e., the requested changes only impact the requester's network.

Changes that affect more than 5% of a Customer's remote sites or more than one Customer are classified as 10-Day Maintenance Windows Requests. This includes, but is not limited to IPGW resets, software changes, new releases, etc.

4. *Monitoring systems;*

Changes to the monitoring systems are typically transparent to users and can be made at any time by the operators. However if the requested change is determined to have the potential to impact the traffic carrying capability of the network the change will be made during a mini-window or Maintenance Window after scheduling the event with the affected Customer(s).

All changes require Hughes' CCB review and approval.

Changes that affect traffic require approval from Hughes Operations management and appropriate Hughes engineering representatives (inroute usage, IP Gateway resets, sizing changes, etc.) are classified as 7-day Window Requests. These are scheduled after receipt of the request, if and

only if the changes will not impact other National NOC operational traffic, i.e., the requested changes only impact the requester's network.

Changes that affect more than 5% of a Customer's remote sites or more than one Customer are classified as 10-Day Maintenance Windows Requests. This includes, but is not limited to IPGW resets, software changes, new releases, etc.

5. Policies and business processes;

Changes to the policies and business processes will be presented and reviewed by the Hughes Account Manager or the Hughes Program Manager.

6. Training;

Changes to the training programs will be presented and reviewed by the Hughes Account Manager or the Hughes Program Manager.

7. Facilities; and

Changes to relevant facilities will be presented and reviewed by the Hughes Account Manager or the Hughes Program Manager.

8. Program documentation.

Changes to the program documentation will be presented and reviewed by the Hughes Account Manager or the Hughes Program Manager.

The Vendor shall provide DIR with its change management windows for each category as listed below. Changes shall be scheduled during the least disruptive time to DIR and its Customers.

Hughes performs prearranged inspections on the network infrastructure once a month. The monthly inspection is conducted on the first Sunday of the month unless it precedes, or is followed by a holiday. During these standard service windows, Hughes performs a variety of tasks ranging from troubleshooting, replacing hardware, or upgrading software. Outages may occur for a few minutes at a time, depending on the task performed. Emergency situations that could result in an outage are scheduled at any time. The Customer is notified in advance when possible.

The Maintenance Inspection Window schedule is posted on the Customer Gateway.

Emergency maintenance windows are maintenance windows that are not prescheduled. The emergency maintenance windows are conducted to effect repairs. The Customer is notified prior to the emergency maintenance window.

The National NOC is provided a maintenance window each month in which to perform system maintenance. These maintenance windows are conducted according to the published schedule, a copy of which is found on the Customer Gateway. In addition, the following rules/standards are followed:

- 39 to 45 days prior to any scheduled software upgrade or new release of software, the assigned Network Engineer works with the Customer(s) to allow them to test the features of the software upgrade.
- All maintenance to the RFT antennas, power upgrades, or calibration is performed during a maintenance window. If it is not possible to schedule this work during a maintenance window, it

is scheduled at a date and time to have minimum impact on the Customers belonging to the affected network group. (This is referred to as a mini-window.)

- Change requests, other than Configuration Change Requests (CCRs) are submitted to the Program Manager via a Change Request form.
- Due to the nature of Configuration Change Requests, they are typically not subject to maintenance window standards.
- Configuration changes in the National NOC are treated as changes and proceed according to standard maintenance window/change procedures and guidelines.
- Notifications regarding activities taking place during the maintenance window are sent to the email address recorded in the Customer's information file at Hughes. In addition, a ticket is posted on the Customer Gateway when a notification is sent. Amplifying information may be available via the Web site.
- When the maintenance window is completed (closed), a notification is sent and the ticket posted on the Customer Gateway.

Customer(s) will be advised of the following:

- At least seven days in advance of a maintenance window.
- Prior to the start and at the completion of the maintenance window.
- Seven days in advance of a "mini-release."
- Thirty days in advance of a "general release."
- Hughes will notify Customers of a planned interruption in traffic at least 24 hours prior to the planned outage.

The Vendor shall provide DIR with any standard change freeze windows.

The monthly inspection is conducted on the first Sunday of the month unless it precedes, or is followed by a holiday. During these standard service windows, Hughes performs a variety of tasks ranging from troubleshooting, replacing hardware, or upgrading software. Outages may occur for a few minutes at a time, depending on the task performed.

The Vendor shall adequately assess changes from both a business and a technical view-point with a clear understanding of the business needs of DIR and its Customers.

Hughes understands and will comply with this requirement. Thirty to forty-five days prior to any scheduled change, the Network Engineer will work with the DIR and its Customers to allow them to test the features and compatibility of the change.

8.2 ONGOING CHANGE MANAGEMENT

The Vendor shall provide in its Response to DIR a Change Management Plan that shall include but not be limited to:

- A The Vendor shall provide a Request for Change (RFC) to DIR 10 business days prior to the proposed Change which shall include the following information at a minimum:*
- 1. Change Requestor Information;*
 - 2. A summary of the proposed Change;*
 - 3. Reason for the proposed Change;*
 - 4. List of affected systems, policies and procedures;*
 - 5. Change Category;*
 - 6. Change Priority;*
 - 7. Change contact information;*
 - 8. Description of test strategy and test completion results;*
 - 9. Description of implementation methodology and the Requirements (if any) of other entities including other Vendors, DIR, DIR Customer(s);*
 - 10. Rollback procedures; and*
 - 11. Proposed implementation timeline including multi step Change information, if applicable.*

At least 10 business days prior to the change, Hughes will provide to DIR and its Customers an RFC that will contain the following:

- Change requestor information
- A summary of the proposed change
- Reason for the proposed change
- List of affected systems, policies and procedures
- Change category
- Change priority
- Change contact information
- Description of test strategy and test completion results
- Description of implementation methodology and the requirements (if any) of other entities including other vendors, DIR, DIR Customer(s)
- Rollback procedures
- Proposed implementation timeline including multistep Change information, if applicable

The Vendor shall provide Infrastructure Change/Release Management Reports on a weekly basis, see Appendix B-7. This report shall provide a forward schedule of Changes and maintain a history of Changes that were proposed, scheduled and completed or abandoned with descriptions of results.

This report will be made available (as specified) on the Customer Gateway.

The Vendor shall be responsible for coordinating the activities of all Changes with DIR and other Vendors as necessary to ensure that appropriate resources are available for monitoring, testing and implementation.

Hughes will be responsible for coordinating the activities of all Changes with DIR and other Vendors as necessary to ensure that appropriate resources are available for monitoring, testing, and implementation.

The Vendor shall provide an After Action Report (AAR), including root cause analyses and corrective actions, following any unsuccessful Change or any Change which results in an unexpected negative impact to DIR or Customers, see Appendix B-10. This report shall be provided within three (3) business days of the change incident. If root cause cannot be determined within three (3) business days, the Vendor shall notify DIR of its timeframe to identify root cause and provide a complete AAR.

Hughes will provide an After Action Report, including root cause analysis and corrective actions following any unsuccessful Change or any Change which results in an unexpected negative impact to DIR or Customers. Hughes calls this report a "Post Mortem Report." The report will be provided within 3 business days, and Hughes will notify DIR of its timeframe to identify root cause and provide a complete AAR.

Changes will be reviewed by a DIR Change Management Board (CMB). The CMB will have the authority, in its sole and absolute discretion, to authorize the Change, postpone the Change, or deny the Change entirely depending on the information provided and the readiness of all parties associated with the Change. DIR reserves the right to request a delay to or deny any RFC. Some reasons for deferring a Change are, but are not limited to:

Risk is too high;

Based on direction from DIR, Hughes will postpone or not implement the change if DIR determines that the risk is too high.

Change does not make business sense;

Based on direction from DIR, Hughes will postpone or not implement the change if DIR determines that the change does not make business sense.

Resources are not available (router, cable, bandwidth, etc.);

Based on direction from DIR, Hughes will postpone or not implement the change if DIR determines that resources are not available.

Not enough information to support the Change; and/or

Based on direction from DIR, Hughes will postpone or not implement the change if DIR determines that there is not enough information to support the Change.

Scheduling conflicts.

Based on direction from DIR, Hughes will postpone or not implement the change if DIR determines that there are scheduling conflicts.

DIR understands that in some cases, emergency Changes will need to be made without proper notice to DIR prior to the Change. In those instances, the Vendor shall provide DIR with an AAR (even if the change was successful). In addition, the Vendor shall provide a follow up RFC and document the Change in the Change/Release Management Report.

Hughes will provide DIR with an AAR for emergency changes (even if the change was successful). In addition, Hughes will provide a follow-up RFC and document the Change in the Change/Release Management Report.

The Vendor shall provide DIR with equivalent system mapping for the following Change priority definitions:

Emergency (same day) Causing loss of service or severe usability problems to a large number of users, a mission-critical system, or some equally serious problem. Immediate action required.

Hughes defines Emergency change priority as “Changes to resolve an event that has caused or could cause interruptions of service is implemented as soon as possible without causing additional interruption.”

High (next window): Severely affecting some users or having an impact upon a large number of users. To be given priority for change building, testing and implementation resources on the immediate next scheduled Change window.

Hughes defines Non-Emergency change priority as “Changes required to improve performance or correct minor issues are implemented in the next regularly-scheduled maintenance window. This includes scheduled upgrades.”

Medium (future window): No severe impact, but remediation of the incident must be addressed during a Change window in the near future.

This would be considered by Hughes to be a Non-Emergency change. Hughes defines Non-Emergency change priority as “Changes required to improve performance or correct minor issues are implemented in the next regularly-scheduled maintenance window. This includes scheduled upgrades”.

Low (routine): A Change is justified and necessary, but can wait until resources can be allocated and scheduled accordingly.

This would be considered by Hughes to be a Non-Emergency change. Hughes defines Non-Emergency change priority as “Changes required to improve performance or correct minor issues are implemented in the next regularly-scheduled maintenance window. This includes scheduled upgrades.”

The Vendor shall provide DIR with equivalent system mapping for the following Change categories and definitions:

Major: Involves potential impact on the highest percentage of users. The Change may be new technology or a configuration Change that will likely cause Downtime of the network or a Service. These changes shall be kept to a minimum.

Significant: Affects a high percentage of users. The Change is a nonstandard Change that may involve Downtime of the network or a Service.

Minor: Affects a smaller percentage of users and risk is less because of the organization's experience level with the proposed Change. It differs from a routine Change in that although the risk is low, the Change may not have been performed before or is rarely performed.

Routine: Affects the smallest percentage with minimal or no impact/risk to users and has a set release process where tasks are well-known and proven.

(We should be able to streamline the change category request into one section – seems to be quite a bit of duplication)

All changes require Hughes' CCB review and approval.

Changes that affect traffic require approval from Hughes Operations management and appropriate Hughes engineering representatives are classified as 7-Day Window Requests. These are scheduled after receipt of the request, if, and only if, the changes will not impact other National NOC operational traffic, i.e., the requested changes only impact the requester's network.

Changes that affect more than 5% of a Customer's remote sites or more than one Customer are classified as 10-Day Maintenance Windows Requests. This includes, but is not limited to IPGW resets, software changes, new releases, etc.

DIR reserves the right, in its sole and absolute discretion, to request Changes to be made outside of standard change windows on an individual case basis.

Hughes will agree to accept Changes outside of standard change windows on an individual case basis.

9.0 INVENTORY MANAGEMENT

Processes and procedures for Inventory/Asset Management;

Hughes maintains a database of all service components that will be provided to deliver services to DIR and DIR Customers. This database is available on the Hughes Customer Gateway for DIR to view and download reports.

The Inventory Management section contains the Requirements to assure that the underlying systems, processes and procedures provided by the Vendor shall effectively support and maintain an accurate inventory of all Service elements provided to DIR and DIR Customers.

Hughes maintains an accurate inventory of all Service elements.

9.1 INVENTORY MANAGEMENT IMPLEMENTATION

The Vendor shall provide a secure Web-based electronic interface which will allow DIR and DIR Customers to access inventory data, make queries, obtain reports and perform downloads.

The Hughes Customer Gateway meets this requirement. DIR will be able to login to the Customer Gateway and see all elements that are provisioned by Hughes. DIR will be able to download reports so the inventory information can be processed offline.

Plan to maintain records which include the following identifiers at a minimum:

1. Customer Circuit Record Code (CKR);

There currently isn't a CKR code in the database. However, Hughes will make every attempt to find a field where the CKR field could be populated.

2. Service location: Street address, city, state, and country;

The Hughes inventory management will maintain the service location, including street address, city, state, and country.

3. TSP Service components; and

The Hughes inventory management will maintain the TSP service components.

4. Any other Vendor identifiers as required.

The other identifier that is most important to Hughes is what is referred to as the "site ID." This is a unique alphanumeric code that can accommodate up to 10 characters that uniquely identifies the service element for the Hughes systems.

Procedures for resolution of inventory discrepancies.

Inventory discrepancies should be brought to the attention of the Hughes Program Manager who will then work with the appropriate Hughes support organizations to determine the cause of the discrepancy and take corrective action. The Hughes Program Manager will update DIR on the status of the resolution.

Timeframes for resolution of inventory discrepancies.

The timeframe for the resolution of an inventory discrepancy will vary depending on the nature of the discrepancy, but they can usually be resolved within thirty business days.

Inventory reconciliation procedures including internal verification and audit procedures to ensure that inventory completeness and accuracy.

Because the system that Hughes uses for inventory management is electronically linked to the provisioning system and the network management system, it is unusual for inventory discrepancies to occur. If a discrepancy were to occur, it would manifest itself as a problem preventing initial service activation (which would be resolved in real time by the network operations team). Discrepancies that are generated after implementation would be reconciled through the monthly billing process, which serves as a periodic internal verification check to verify consistency between the inventory management and billing records.

9.2 ONGOING INVENTORY MANAGEMENT

The Vendor shall provide DIR with an Ongoing Inventory Management Plan in its Response which discloses the Vendor's processes and procedures for ongoing management of the Inventory Database to ensure completeness and accuracy which shall include, but not be limited to:

Procedures for routine audits of billing against inventory database for both DIR and Vendor databases;

The Hughes Program Manager will audit billing records against the inventory management database periodically (quarterly at a minimum).

Notification procedures for identified Inventory database discrepancies;

Inventory discrepancies identified by the Hughes Program Manager will be communicated to DIR through the regular weekly program reviews. The Program Manager will work with the appropriate Hughes support organizations to determine the cause of the discrepancy and take corrective action. The Hughes Program Manager will update DIR on the status of the resolution.

Remediation procedures and timeframes for corrections to Inventory database.

The timeframe for the resolution of an inventory discrepancy will vary depending on the nature of the discrepancy, but they can usually be resolved within thirty business days.

If there is an inventory discrepancy, the Vendor shall work with DIR to resolve the issue at no additional cost to DIR.

Hughes will work with DIR to resolve inventory discrepancy issues at no additional cost to DIR.

Support the management of inventory.

The Monthly Consolidated Invoice will allow DIR to support the management of inventory.

10.0 CUSTOMER CARE

Help Desk/Trouble Tickets;

Processes and procedures for technical support;

The Hughes Customer Gateway provides a Web-based application that allows the user to report and track a remote issue or remote failure from initial report through final resolution. Alternatively, Customers can call the **Hughes Help Desk** at **1-800-788-6000**. The interactive voice response system is used to select the appropriate option to report a remote site issue, report an issue with the Customer Gateway, request Web site access, or to report a network issue.

Remote trouble reports received via the Customer Gateway are processed in exactly the same manner as phone calls.

When a request for technical support is reported, the appropriate details regarding the request are captured in a case report. The case report is automatically displayed on the Customer Gateway following the processing of the ticket by the Hughes technician.

Technical support cases follow an escalation procedure to ensure that they receive appropriate attention and are resolved promptly.

Processes and procedures for trouble resolution;

Hughes' escalation policies provide a communication path for the Hughes team to solve network problems. In the event that traffic is not interrupted and the Customer agrees on the status, a noncritical problem notification will be sent to the Network Engineering team. However, if traffic is interrupted and/or there is a disagreement on the status, the critical problem notification procedure is followed.

- In the event of a problem, affected Customers are notified immediately. When a problem is observed or reported, a Network Management ticket is opened and subsequent status entries are displayed on the Customer Gateway.
- Hughes provides Customers with status reports. Verbal updates are provided for critical outages and through the Program Manager when multiple Customers are involved. Status entries are also displayed on the Customer Gateway. The ticket through the Customer Gateway is updated later and made visible when approved.
- On the next business day, the details of an outage are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the outage ticket in a form viewable by the Customer on the Customer Gateway.
- Critical problems that cannot be resolved within 15 minutes are escalated.
- Escalation policies can be used for Network or remote service problems the Customer is experiencing. All requests for escalations related to Network or remote issues are submitted to the Hughes Help Desk. The Hughes Help Desk escalates the request through all appropriate channels.

Escalation procedures

Escalation procedures are provided in **Figure 10-1** and **Figure 10-2**.

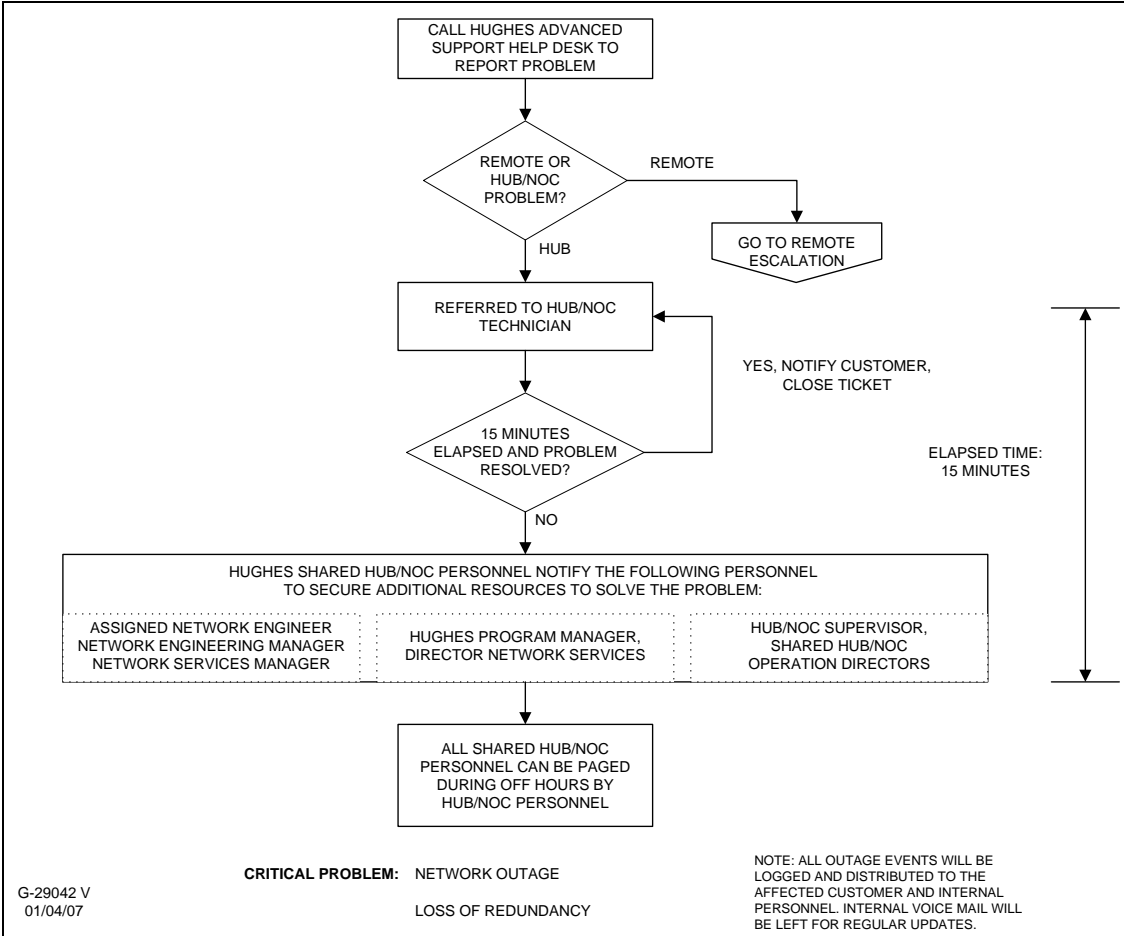


Figure 10-1. Hub/NOC Escalation (Critical)

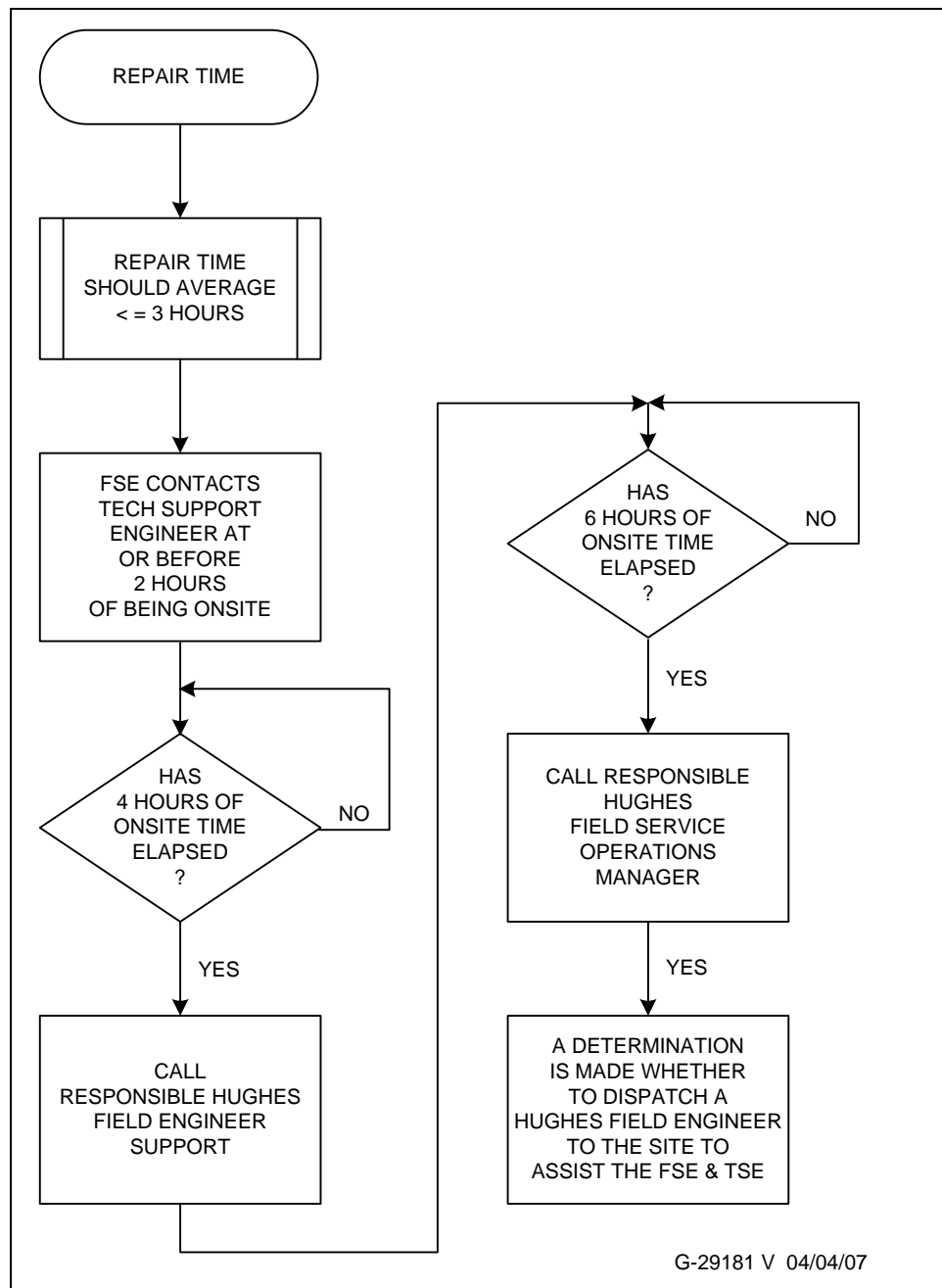


Figure 10-2. Remote Escalation

Customer Care

The Customer Care section contains the Requirements to assure that the underlying systems, processes, and procedures provided by the Vendor will effectively support DIR and DIR Customers in the following areas: Help Desk (Technical Support) and Reporting. These Requirements apply to all Services provided under the CTSA, including SOC and NOC Services.

The Hughes Help Desk, based in Germantown, Maryland, has remote diagnostic access to all Customer locations. The Help Desk is available 24x7 and is staffed by technical agents trained in HughesNet products and in providing quality Customer support. Trouble tickets can be initiated using a Web-based interface, via the Customer Gateway, or via toll free telephone number. Either means allows the

Customer Help Desk to generate track/request information, and close tickets. The Help Desk number is 1-800-347-3272.

The Hughes Help Desk role is to perform Tier 3 troubleshooting and attempt to resolve remote site issues remotely before dispatching a field service technician. The Help Desk also provides ticket monitoring, interim updates, and automatic escalations per contracted coverage hours. Help Desk technical agents provide assistance to field service representatives and monitor on-site progress.

In addition to the Hughes Tier 3 Help Desk, Hughes provides Tier 1 Help Desk support for its Business Internet Customers (proposed here in the category Small Office/Home Office Internet Service). This Tier 1 service will provide 7x24 support to Small Office/Home Office Customers on a wide range of support issues, including technical support, billing issues, and service activation/deactivation.

10.1 HELP DESK IMPLEMENTATION

The Vendor shall provide in its Response to DIR a Help Desk Implementation Plan which shall include, but not be limited to:

Customer Care technician standard skills, certifications and qualifications;

The Hughes Help Desk is staffed with professional, experienced technicians. These technicians go through a formal training process that covers a wide range of topics that includes system architecture, troubleshooting, and problem resolution. The Help Desk technicians have access to the Customer Gateway as well as a library of knowledge base articles, which provide a full suite of diagnostic, configuration, and status tools. In addition, customized training in Customer care procedures and the Web-based Customer Gateway trouble ticketing system are also provided.

Standard business hours and after-hours support coverage;

The Hughes Help Desk operates 24x7.

24x7 standard technical support procedures for all Service disruptions when:

- *Reported by DIR or a DIR Customer or*

The Hughes Help Desk's role is to perform Tier 3 troubleshooting and to attempt to recover a site remotely before dispatching a field service technician. When a service disruption is reported by DIR or a DIR Customer (either via telephone or via the Customer Gateway), a trouble ticket will be opened to track this problem resolution. The Help Desk technicians have many real-time tools available for their troubleshooting efforts and knowledgebase articles to assist in the diagnosis and isolation of remote issues. If it is determined to be necessary, the Help Desk will dispatch a field service technician to the remote site to troubleshoot and replace any failed equipment.

- *Detected by the Vendor via monitoring activities or systems.*

As part of our managed service, Hughes proactively monitors all elements of the network and will automatically generate a trouble ticket if a service disruption is detected.

If the service disruption is at a single remote location, then an email is automatically generated and sent to the DIR or DIR Customer Tier 1 Help Desk. Once the Tier 1 process is completed by the DIR or DIR Customer Tier 1 Help Desk, the ticket (which is accessed via the Hughes Customer Gateway) can be closed by the Tier 1 Help Desk (problem resolved) or escalated to the Hughes Tier 3 Help Desk for resolution.

Any issues that are determined to be network issues (and not unique to a particular remote site) are immediately escalated to the Hughes Network Engineering for problem isolation and resolution. The Network Engineering team is responsible for network troubleshooting, database changes, network event status updates and escalations to network engineering. In the event of a network issue, the Hughes Help Desk will open a trouble ticket and provide the ticket information to DIR and DIR Customer's Help Desk. The Network Engineering team will provide status updates and event notifications.

Joint technical support to DIR and any other TEX-AN NG Vendor(s) in order to re-solve Service disruptions efficiently and expeditiously;

Hughes will work with DIR and any other TEX-AN NG Vendor(s) to resolve Service disruptions efficiently and expeditiously. This is accomplished via our experienced 24x7 support team of Help Desk personnel, network engineers, and operational support staff. Based on our 20+ years of experience of supporting critical enterprise and government networks, the team has created a support process that ensures that the proper people and systems are available to respond to problems when they occur, but more importantly, prevent problems from occurring in the first place. The Hughes team understands that this requires accurate and timely communications among Customers, Hughes, and other vendors that are involved in the overall network.

24x7 technical support for emergency Customer events;

Hughes will provide 24x7 technical support for emergency Customer events. Requests for this type of support can be made via the Customer Gateway and the ticketing system or by contacting the Hughes Program Manager directly. All Hughes Program Managers are on call 24x7 with a backup process to ensure Customer calls are answered. Technical support is provided by the Network Engineering team, under the direction of the Program Manager, but deep technical support is also available through the Hughes development engineering team.

Support procedures during natural disasters;

Hughes has a great deal of experience in providing support during natural disasters. The best way to respond to natural disasters is to be prepared before the fact.

The satellite services included in this proposal provide path-diverse, highly available networking solutions that can serve as an insurance policy for continuity of government operations, especially in crisis situations. Additionally, we can provide emergency Internet access with nationwide reach, and vehicle-mount, on-the-move terminals, and flyaway kits that set up quickly.

After an emergency occurs, Hughes can provide a true alternative infrastructure that stays up and running when terrestrial systems fail. Typically, communications can be restored within 48 hours and our solutions are ideal for providing temporary service while primary communications are being restored after an emergency.

The Hughes Help Desk and Program Management team will be available to help DIR and DIR Customers with disaster recovery planning and put the systems and procedures in place so that communications to critical government agencies can quickly be restored.

Description of access procedures to any Web-based Customer interface for DIR use as necessary to support Customer Care functions including trouble ticket system and self help tools;

The Web-based Customer Gateway is the primary interface for:

- Creating and monitoring trouble tickets
- Monitoring installation activities
- Accessing real time status of network elements and other fault management related data
- Accessing performance management reports

Any authorized DIR or DIR Customer personnel will be provided a secure login ID and password so they can access the Customer Gateway. Appropriate DIR personnel will be given access privileges that allow DIR to provide ongoing management of IDs and passwords.

Description of trouble ticket life cycle management, including ticket status update timeframes;

The Hughes Help Desk will perform Tier 3 troubleshooting and to attempt to recover a site remotely before dispatching a field service technician. The Help Desk has many real-time tools available to support troubleshooting efforts and knowledgebase articles to assist in the diagnosis and isolation of remote issues. The Hughes Help Desk will contact DIR personnel to report potential network issues discovered through trending and as reported by the agency users. The Help Desk will provide ticket monitoring, interim updates, and automatic escalations. Technicians provide assistance to field service representatives.

Hughes also offers the option to the Customer for email alerts whenever an automatic ticket is opened by the Proactive Monitoring system. This option can also be extended to include an automatic prompting of the Customer's Tier 1/Tier 2 Help Desk should an automatically generated trouble ticket not be acted upon by the Customer's Help Desk within a fixed amount of time. This is configurable feature enabled upon Customer's request.

Site level proactive monitoring tickets are created in the Customer Gateway based on the alarms from the Fault Management system when there is a service disruption at an individual site. The system automatically clears the tickets when service is restored.

When a remote site does not respond to network polls from the network management system, a Major Alarm is generated against that site. If there is no response from the site for a configurable period of time (default 15 minutes), the system escalates the alarm severity to Critical and sends a message to the Customer Gateway to create a trouble ticket against that site. These tickets can be viewed along with the other tickets in the Customer Gateway.

The Proactive Monitoring system receives the trouble ticket number from the Customer Gateway and displays it in the notification log. The ticket is automatically cleared by the system when service is restored.

Network level tickets are created by the Proactive Monitoring system when service is disrupted in the network infrastructure. These alarms are calculated using correlation techniques, network hierarchy, and predetermined threshold levels. The thresholds are defined for each logical group based on prior experiences. These alarms are generated in anticipation that if multiple devices have multiple alarms (more than the defined thresholds), there is a high probability that the root cause of the problem is at a higher level network element.

When the network level alarms are generated, all the associated individual alarms for the remote sites are suppressed. A trouble ticket is opened in the Customer Gateway based on the network level alarm. This network level trouble ticket contains the list of all the Customers affected by the outage and all the sites

affected for each Customer. The network level ticket is directly assigned to the operations team and the resolution process starts immediately.

Standard definitions for trouble ticket priorities with translations to the following:

1. ***Critical;***
2. ***TSP;***
3. ***High;***
4. ***Medium; and***
5. ***Low;***

Hughes has a wide range of trouble ticket “types,” which translate to different priorities. The standard types and our suggested translation to the DIR priorities are:

- Account Change (Low)
- Advanced Technical Support (High)
- Configuration Change (Low)
- Emergency (Critical)
- Inquiry (Low)
- Install (High)
- Network Outage (Critical)
- Move/Add/Change (Medium)
- RMA Request (Low)
- Technical (High)
- Upgrade Request (Low)

The Vendor shall create a trouble ticket for the following: (Reference trouble ticket section)

Any Service disruption reported by DIR or Customer, or detected by the Vendor or its Subcontractor(s);

Hughes will create a trouble ticket for any Service disruption reported by DIR or Customer, or detected by the Hughes Proactive Monitoring system.

Any hazardous condition that has the potential for major Service impact (e.g., fire in a node);

Hughes will create a trouble ticket for any hazardous condition that has the potential for major Service impact.

Failure of network management system that results in loss of visibility to network and telemetry data;

Hughes will create a trouble ticket for any failure of the network management system that results in loss of visibility to network and telemetry data.

Any other Fault, event or request that DIR determines should be monitored or tracked through the Customer Care organization.

Hughes will create a trouble ticket for any other fault, event, or request that DIR determines should be monitored or tracked through the Customer Care organization.

10.2 HELP DESK REPORTING

The Vendor shall provide monthly Customer Care reports to DIR as follows:

- ***Trouble Ticket Aging Report by Customer;***

Hughes will make available on the Customer Gateway monthly reports on trouble ticket aging by Customer.

- ***SLA Non-Compliance Report;***

Hughes will make available on the Customer Gateway monthly reports on SLA Non-Compliance.

- ***Local Services Sales Report;***

This information is available in the standard Newly Commissioned Sites List ***monthly report.***

- ***SOHO Sales Report;***

Hughes will provide a monthly report on SOHO Sales.

- ***Internet connectivity for non-State agencies; and***

Hughes will provide a monthly report on Internet connectivity for non-State agencies.

- ***Marketing Report. Including:***

- ***Date(s) of marketing effort;***
- ***Marketing venue;***
- ***Description of marketing effort***
- ***Target market;***
- ***Marketing lead responsible for effort; and***
- ***Effectiveness of effort.***

The Hughes Account Executive will provide a monthly report on marketing efforts, including but not limited to:

- Dates of marketing efforts
- Marketing venue
- Description of marketing effort
- Target market
- Marketing lead responsible for effort
- Effectiveness of effort

Other reports that shall be provided by the Vendor as requested by DIR are:

- ***AAR;***

On the next business day after a critical outage, the details of an outage are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the outage ticket in a form viewable by the Customer on the Customer Gateway.

- ***Various reports of information in order to determine performance quality of Customer Care organization, and***

The Hughes Program Manager and Customer Care organization will work together to create the necessary reports of information in order to determine the performance quality of the Hughes Customer Care organization. This is typically reviewed in Quarterly Program Reviews.

- ***Other ticket information as requested by DIR.***

Hughes will provide any other ticket information as requested by DIR.

The Vendor shall submit all reports to DIR in an electronic format.

Hughes will submit all reports in an electronic format. All standard reports will be available for download via the Customer Gateway. Any ad hoc or custom reports will be submitted to DIR electronically via email.

11.0 BILLING

Billing Procedures;

All billing will be generated by Hughes to Texas DIR. The only exception to this will be the Small Office/Home Office Internet Services, where Hughes will directly bill the end user. Non-Recurring Charges (typically hardware and installation charges) will be billed in the month after the equipment and installation is delivered. Monthly Recurring Services will be billed at the beginning of each month for that month's service.

11.1 DESCRIPTION

The Billing section contains the Requirements to assure that the underlying systems, processes and procedures provided by the Vendor shall effectively support timely and accurate Billing of Services to DIR and its Customer(s). This section applies to all Services billed under the CTSA.

Hughes is confident that its billing systems, processes, and procedures will meet and exceed the requirements of DIR. It should be noted that Hughes currently has a successful relationship with DIR and we are looking forward to expanding that relationship with the TEX-AN NG project.

11.2 REQUIREMENTS

The Vendor shall provide in its Response to DIR a Billing Plan which shall include but not be limited to:

Key personnel including:

- ***Name and role,***

Bill Snider, Program Manager, Bill.snider@hughes.com, 301-601-7235

- ***Escalation list;***

Bryan Gustafson, Director of Billing, Bryan.Gustafson@Hughes.com, 301-428-5973

Billing process description (process for producing the Monthly Consolidated Invoice):

- ***Process description for handling Disputes and Adjustments,***

There will be periodic and regular program reviews between Hughes and DIR. These reviews can be either weekly, biweekly or monthly, depending on what both parties determine is appropriate. During these reviews, any billing Disputes and Adjustments will be tracked and managed until there is successful resolution.

- ***Process for Back-billing and Vendor initiated Rate changes, and***

Hughes may only "Back Bill" when applicable. This would generally occur if a charge was missed on a previous invoice. The request would come from the Program Manager and the charges would appear on the next month's invoice with the dates reflecting the period being charged.

- ***Process for reconciling areas of the CTSA that have an impact on billing;***

Requests are submitted to the Program Manager, who reviews current contract and escalates to the billing group where applicable.

Billing increment(s) by Service;

The service charges are assessed monthly on the anniversary date which the account was created. The billing is in advance.

Methodology explaining how DIR shall be billed by CKR;

For each remote location, there will be a Hughes Site ID, which can be equated to the CKR. For each Site ID (CKR), there will be no more than three line items. These line items are the equipment and installation (NRC), monthly service (MRC) and field service plan (MRC). The Hughes invoice will clearly identify each of these items with its associated Site ID (CKR).

A description of the Vendor's electronic billing formats and interface specifications, which shall be consistent with industry standards;

Hughes provides invoices on-line in HTML format. If the Customers are not paying by credit card, they will receive a paper copy invoice.

Any additional reporting options from the Vendor's systems available to DIR;

There are no additional reporting options available at this time.

Samples of all standard Bills and reports provided by the Vendor's system;

(Need to Provide sample invoice)

Samples of standard bills will be provided by Hughes as soon as possible.

System data export capabilities

Hughes bills are available in Microsoft Excel format.

Technique for prorating Services;

Hughes currently prorates charges based on the anniversary date—i.e., the account is billed in advance; if the Customer cancels his account 15 days into a 30 day period, 15 days is adjusted back to the account. If a monthly service plan is purchased 15 days into the cycle, 15 days will be charged on the next cycle plus the next month's billing.

Technique for rounding charges or units;

All charges are rounded to the nearest cent.

Process description for handling Disputes, Credits and Adjustments; (Duplicate section?)

Billing discrepancies should be brought to the attention of the Hughes Program Manager who will then work with the appropriate Hughes support organizations to determine the cause of the discrepancy and take corrective action. The Hughes Program Manager will update DIR on the status of the resolution.

Process for back-billing and Vendor initiated Rate changes;

Hughes may only "Back Bill" when applicable. This would generally occur if a charge was missed on a previous invoice. The request would come from the Program Manager and the charges would appear on the next month's invoice with the dates reflecting the period being charged.

Process for reconciling the other areas of the CTSA that have an impact on billing;

If the CTSA needs to be amended to address billing reconciliations, this will be handled through the Hughes legal organization.

Provide a secure billing database, which must be accessible by DIR via a web browser;

Hughes does not have a Web-accessible billing database at this time.

Invoice DIR at the allowable Rates under the CTSA;

The Hughes invoices will match the rates in the CTSA.

Addition of DIR Cost Recovery Fee (CRF) to the Rates applicable for the Service;

It is our understanding that this is only applicable to the Small Office/Home Office Internet Service. Hughes will add the CRF to each of these invoices, and then provide a monthly payment to DIR equal to the total CRF collected that month.

For Services ordered directly from the Vendor, the Vendor shall bill the Customer directly;

Hughes will bill the Customer directly for Services ordered directly from Hughes.

For Services ordered directly from the Vendor, the Vendor shall be responsible for the assessment and collection of the DIR Cost Recovery CRF for these Services and shall remit the fee to DIR as specified in the CTSA;

Hughes will be responsible for the assessment and collection of the DIR CRF for Services ordered directly from Hughes. Hughes will remit the fee to DIR, as specified in the CTSA.

Provide DIR with a single electronic Monthly Consolidated Invoice, which includes all Services provided by the Vendor;

A report can be supplied to DIR for invoices which were submitted to Customers under this program. This, however, cannot be an invoice as the system can only produce one invoice for the charges specified.

Provide the ability to batch load the Monthly Consolidated Invoice into a DIR designated system. The formats for Call Detail Records (CDR) and monthly circuit billing are in Appendices B-11-14;

Hughes does not have a batch load capability for invoices at this time.

The Vendor's billing system shall utilize the unique nomenclature/description of each billing element for each Service as disclosed by the Vendor in its Response in Appendix D;

The Hughes billing system will utilize the unique nomenclature/description of each billing element for each Service, as disclosed in Appendix D. (Needs to be attached to this document)

11.3 CUSTOMER BILLING

DIR reserves the right to introduce direct Customer billing options on all Services at any time with a 90 Business Day written notice. The Vendor shall cooperate with DIR to amend the CTSA as necessary to alter the billing and remittance responsibilities.

Hughes will cooperate with DIR to amend the CTSA as necessary to alter the billing and remittance responsibilities.

11.4 INVOICES (COMBINE DUPLICATIONS WHERE POSSIBLE)

The TEX-AN NG Monthly Consolidated Invoice to DIR shall include:

Unique Invoice Number (for each month's billing).

The Hughes TEX-AN NG monthly consolidated invoice will include a unique invoice number for each month's billing.

Monthly Invoice File: A summary of current Rates, Adjustments and payments.

Hughes will provide a monthly Invoice with current rates and adjustments. Hughes also creates a separate document referred to as an Aging Report (AR) that is available upon request to show status of invoices and payments received.

Detailed Billing File(s):

Detail supporting the Invoice File which includes the Customer Circuit Record Code (CKR) which ties all billing elements and location information together under one Service instance.

The Hughes TEX-AN NG detailed invoice will include the CKR, which ties all billing elements and location information together under one Service instance.

Long Distance and Toll Free billing details shall contain the price per billing increment. The Vendor shall verify that the correct contracted Rate is applied and submit a written statement of verification to DIR.

Hughes is not proposing any voice services (including long distance and toll-free).

Adjustment Billing File: File showing all Adjustments and Credits (including SLA Credits) for the given billing period.

- ***Detail shall include the original unique Invoice number, the original billing period, the corresponding CKR and the billing element adjusted.***

Hughes will provide an Adjustment Billing File, which will include the original unique invoice number, the original billing period, the corresponding CKR, and the billing element adjusted.

- ***For Adjustments not related to a CKR, detail shall be sufficient for DIR to validate the Adjustment.***

Hughes will provide an Adjustment Billing File, which will include detail sufficient for DIR to validate the Adjustment.

Monthly Consolidated Invoice Informational Memorandum: Explains any changes, is-sues or concerns regarding the current Monthly Consolidated Invoice.

Hughes will provide a Monthly Consolidated Invoice that provides enough data to enable DIR to validate the accuracy of a single charge by consulting the Order and its Service Order Completion Notice, price tables, Credits, and the telecommunications fees and surcharges Tables. The Monthly Consolidated Invoice will be in Microsoft Excel format.

The TEX-AN NG Monthly Consolidated Invoice shall provide enough data to enable DIR to validate the accuracy of a single charge by consulting the Order and its Service Order Completion Notice, price tables, Credits and the telecommunications fees and surcharges Tables. TEX-AN NG Monthly Consolidated Invoice shall be in an electronic format. DIR will also use the Monthly Consolidated Invoice to fulfill its governance mission in (1) ensuring that Vendors deliver what is quoted or ordered and (2) that the billing conforms to the Vendor pricing for each Service or Feature in the CTSA.

Overall, the TEX-AN NG Monthly Consolidated Invoice shall allow DIR to:

- ***Create a single Detailed Monthly Consolidated Invoice File;***

The Monthly Consolidated Invoice will allow DIR to create a single detailed monthly consolidated invoice file.

- ***Reconcile the Detailed Billing Files to the Monthly Consolidated Invoice File;***

The Monthly Consolidated Invoice will allow DIR to reconcile the detailed billing files to the monthly consolidated invoice file.

- ***Verify billing information back to an Order;***

The Monthly Consolidated Invoice will allow DIR to verify billing information back to an Order.

- ***Validate the accuracy of each charge in the Detailed Billing File;***

The Monthly Consolidated Invoice will allow DIR to validate the accuracy of each charge in the Detailed Billing File.

Verify accuracy of the Adjustment Billing File (including Credits) at the detail level; and

The Monthly Consolidated Invoice will allow DIR to verify the accuracy of the Adjustment Billing File (including Credits) at the detail level.

12.0 PROGRAM MANAGEMENT

The Program Management section contains the Requirements to assure that the underlying systems, processes and procedures provided by the Vendor will effectively support and manage TEX-AN NG designated projects.

12.1 PROGRAM MANAGEMENT IMPLEMENTATION

The Vendor shall provide in its Response to DIR a Program Management Plan which shall include but not be limited to:

Key Project personnel and contact information;

Program Management;

Bill Snider
Director, Program Management
301-601-7235

Bill is responsible for the execution of the contract and overall management of the Texas DIR program.

Deb Chowdhury
Sr. Director, Government Business Management

As part of the Government Business Management, Deb also leads the Program Management Office responsible for managing government programs at Hughes. One of the Program Managers reporting to Deb will be assigned as the day-to-day Program Manager for Texas DIR. The role and responsibilities of the Program Manager are described in more detail in Subsection 4.7. Deb will hold regular program reviews with the Hughes Program Manager assigned to Texas DIR to ensure that the program and performance objectives are being met.

Clear chain-of-command and formalized decision-making process;

The Hughes Program Manager will have responsibility for ensuring that proper coordination takes place between Hughes and DIR and DIR Customers. Typically, the deliverables from the Hughes Program Management Team are as follows:

- Project plan and implementation schedule
- Customer site installation specification
- Coordination of overall site installation process
- Implementation of site maintenance plan
- Reporting and periodic project status reviews
- Contract administration as required

DIR communication and collaboration activities;

The Hughes Program Manager is responsible overall for communications between Hughes and DIR. Through weekly and/or monthly status reviews, he will track open items, provide project updates, and seek collaboration/review/comment from appropriate DIR resources.

Program control including, but not limited to, program tracking and communications, change control, risk management, quality assurance, Customer Acceptance and Transition;

Hughes' Program Management approach and philosophy includes the following major steps:

Program Definition

- Obtain official master contract and related documents
- Define contract requirements
 - Identify scope of work
 - Milestones
 - Deliverable items
 - FAT and ATP requirements
- Prepare Project Breakdown Structure (PBS)
- Determine CFEs, sparing, and specific tasks to be performed by Hughes and Customer

Program Team Selection

Identify individuals to perform each required task and obtain commitments.

Program Records

- Establish the record files, distribution lists, and document control requirements
- Maintain all significant program records and historical data and correspondence

Internal Kickoff Meeting

Hold a kickoff meeting with all program team members present. Prepare the startup meeting's agenda to cover the following required topics:

- Customer introduction
- Program scope and objectives
- Contractual requirements
- End item specifications
- New developments
- Design reviews (PDR, CDR)
- Program reviews
- Target schedules
- Required resources
- Financial terms
- Preliminary budgets
- Risk areas (penalties, technical exposures)
- Customer training
- Any other item crucial to successful implementation of the contract

Also in this meeting, members of the program team are introduced and their relationships and responsibilities clarified. A startup package covering the above items is prepared beforehand and distributed during the meeting.

Order Entry and Configuration Review

As a first step, the list of equipment is entered in the order entry system together with any other major deliverable items defined in the contract. The equipment list and configuration are reviewed and verified by the configuration controller and Program Manager to ensure the proper order entry.

Schedule Preparation

- Identify and define program-level milestones and interfaces
- Prepare the program master plan and schedule
- Identify the schedule's critical path and related items
- Prepare a more detailed subtask schedule for critical areas for further monitoring and control
- Ensure the schedule and tasks are based on available resources
- Obtain the commitment of the performing department or group managers for their portion of the schedule and tasks through PWA or minutes of meetings

Invoicing and Accounts Receivable

- Monitor, control, and ensure prompt invoicing of the Customer by the contract administrator in accordance with the terms and conditions of the contract
- Make sure that the account receivable is not in arrears
 - If in arrears, take steps to remedy the delays by following up with the proper corrective actions and protocols with the Customer
 - Escalate the Customer's non payments to higher management

Program/System Engineering Planning

- Program PE defines functional requirements, system block diagrams, and vendor specifications
- Analyzes and ensures the integrity of the system/equipment configuration and sparing vis-à-vis Customer network requirements
- Scrub down and review technically all of the program's technical elements
- Determine performance requirements, simulations, test procedures internally and externally for the Customer (e.g., ATP, FAT, link budgets, numbering plans)
- With the assistance of the installation group, prepare all the technical/installation drawings, procedures, manuals, and documentation
- Coordinate and drive system engineering to define and freeze the design and complete any software or hardware development work required
- Participate at CCB meetings and ensure that all ECNs are incorporated into the equipment through the product line manager

- PE supports installation and performs integration tests, as required by the contract, at Hughes or at Customer site during installation
- Prepare and maintain complete program specification documents and copy CAC for upkeep during the maintenance phase of the program
- Provide CAC procedures to the Customers for warranty and subsequent maintenance periods

External Kickoff Meeting

Hold a startup meeting with the Customer at its site to lay out the ground work for initiation of the program based on the terms and conditions of the contract. This meeting could also encompass design reviews, if appropriate.

Preliminary and Critical Design Reviews

Hold PDR and CDR meetings to scope NRE and technical development tasks. These meetings are held internally first to define the problem and establish the solution algorithms and then held with the Customer to achieve concurrence and finalize the design.

Configuration/Order Entry Modifications

Review the configuration requirements and make final adjustments to the order entry based on any changes made during the final CDR and engineering reviews.

Operation Group/Production Planning

- Ensure all the equipment line items are properly downloaded from the order entry system and properly scheduled in the MRP system
- Participate in the weekly shipping planning meetings to drive and ensure that shipments are taking place according to the contract master schedule
- Make sure all future add-on orders also have been entered in the MRP system and are scheduled for a rolling 12-month period in order for the Operations Group to plan and drive manufacturing production accordingly

This planning is of the utmost importance to avoid any shortages or delays in shipping schedules for Customers. Also make sure that marketing managers of the same region have properly scheduled all the high probability quotations/proposals in the forecasting system.

Program Work Authorizations

Issue PWAs wherever appropriate and obtain commitments from functional groups for developmental, engineering, or any other tasks necessary for the completion of the program.

Purchase Requisitions and Subcontracts

- Complete purchase requisitions for third-party equipment and initiate subcontractor evaluation and contract negotiations
- Determine subcontractor liaison, shipping, logistics and FAT procedures
- Monitor vendor progress to see that mutually agreed-to delivery dates are met

- Make sure closeout procedures are completed in accordance with the subcontract

Program Evaluation and Control

- Update task plans, labor, material, budget, and schedule variances and LRE reports
- Initiate internal program review and evaluation meetings
- Hold periodic external program meetings at Customer premises as needed to enhance communication and report on the status of the program as required by contract

Installation Requirements and Planning

- Ensure the installation group has properly scheduled and designated installers for the installation of the hub, remotes, and any other equipment Hughes is required to install
- Make sure the third-party vendors/subcontractors have planned for installation of their equipment such as UPS, RFT, etc.
- Review and put in place procedures for acceptance tests to be performed by Hughes and vendor installers

Site Installation, Operation and Training

As required by contract, select a site project coordinator to supervise the installation of the equipment and to conduct on-the-job training, prepare operating and maintenance procedures, and manage overall vendor site installation activities. He or she is also to supervise system checkout and final acceptance tests.

Key Project phases, schedule management and work breakdown structure;

As described above, the Hughes Program Manager will manage the key project phases, manage the program schedule and work breakdown schedule. This includes, but is not limited to, development and management of:

- Program definition
- Program team selection
- Program records
- Internal kickoff meeting
- Order entry and configuration review
- Schedule preparation
- Invoicing and accounts receivable
- Program/system engineering planning
- External kickoff meeting
- Preliminary and critical design reviews
- Configuration/order entry modifications
- Operation group/production planning
- Program work authorizations
- Purchase requisitions and subcontracts
- Program evaluation and control
- Installation requirements and planning
- Site installation, operation and training

Approach to cost tracking and management;

With the assistance of a Hughes financial analyst, the Program Manager will review the cost estimate files and the service order to establish the program's required direct labor, material, and other resources. The Program Manager will prepare program cost performance reports and LRE for approval, monitoring, and control. He will obtain the commitment of the performing department or group managers for their portion of the budget and tasks through a Program Work Authorization or minutes of the meetings.

Approach to Subcontractor management;

Hughes has strong and effective subcontractor or management processes in place, from initial subcontractor assimilation to active oversight of performance. These processes enable Hughes to consistently deliver superior task order execution and network management services.

The key elements of the Hughes subcontractor management approach are:

- **Selection** – Perspective subcontractors are reviewed for capabilities, financial strength, past performance. Onsite interviews are conducted by Hughes to evaluate management and discuss the subcontractor agreement. A subcontractor contract is established defining the scope, objectives, quality requirements, fees, reporting requirements, and tasks the subcontractor will execute for Hughes.
- **Education** – All initial subcontractor-technician training is hands-on and face-to-face. Subcontractor employees are also given web access to ordering and provisioning systems and are cleared to take the education/training module. Upon completion, the subcontractor employee is cleared to use the portions of the portal related to the tasks they will use for task order tracking and reporting.
- **Access to Hughes Tools** – Each subcontracted company has gone through extensive train-the-trainer programs and are required to train and certify all of their subcontractors who will be conducting installation work for us.
- **Performance Monitoring** – Execution of tasks are monitored on a day-by-day basis and performance issues identified. Every new agency is assigned an Implementation Coordinator who is responsible for agency interface activity regarding installations. The Implementation Coordinator also works with our regional Installation Managers and Installation Coordinators to ensure all scheduling is accurate, agency portal is updated, and sites are completed on time. Each subcontractor is assigned an installer certification number and all installs are tracked showing who actually performed the work at the install site.
- **Quality** – Hughes has a published Quality Assurance Program that all contractors are contractually required to follow. Photos are required to be taken at every remote site install as well as an installation site audit and release form to be signed by the site point of contact. Quality audits of sites are conducted on a random and periodic basis with Hughes internal field support personnel. The results of all audits are captured in the Hughes Quality Assurance database for use in tracking the quality of installations of all contractors and subcontractors.
- **Reporting** – Weekly performance reports are reviewed with each subcontractor and tasks identified to address any issues in performance that are identified. Open correction action tasks are reviewed monthly. Subcontractors failing to meet and/or failing to address performance objectives are subject to potential contract termination or financial penalties.

Escalation procedures; (Combine duplication if possible)

Communication between Hughes and DIR and DIR Customers will be essential to ensure that the Customers' day to day operations are not being impacted by the Hughes implementation and that the network service is being delivered as planned. Based on guidance from DIR, the Hughes Program Manager will establish regular program updates, either through face-to-face meetings, teleconferences, or regular electronic or written reports. The Hughes program team is on call 24x7 and always available in the event that there are immediate issues that need resolution. Furthermore, they can always get real time updates through the Hughes Customer Gateway; DIR can always get real-time updates with respect to installation status and schedule, remote site status, trouble ticket updates, etc. Escalation procedures are clearly established on the Customer Gateway to ensure that trouble tickets and configuration requests are addressed and resolved in a timely fashion.

In addition, Hughes will provide escalation paths to DIR through:

- Account Manager as needed
- Program Manager as needed
- Quarterly Program reviews with functional group representation from Hughes
- Semi-annual on-site network audits
- Annual Executive Briefing

Provide accurate, complete, and timely standard program-level reports; and

All program-level reports are made available through the Customer Gateway and are automatically generated by the underlying systems that monitor the performance and implementation of the network.

Provide any additional non-standard reporting options.

Optional On-Demand Report capability can be made available. This option provides the ability to run reports based on criteria such as time duration, traffic flow, individual site, etc. There is a wide variety of reports available allow network managers and support personnel to view network traffic at the TCP/IP application level by a variety of parameters including port, servers, hosts, host conversations, protocols such as IP/TCP/UDP, etc.

The enhanced reporting capability allows users of the Customer Gateway to take the standard monthly reports (e.g., top talkers, top applications, application throughput) and create custom reports on demand based on a variety of input criteria.

The query-based capability provides the ability to select traffic flow by inbound and outbound, different networks defined for the traffic (different agencies, traffic flowing through different hubs, etc.), and the time duration. The query also provides the capability to view the data for an individual site or the entire network.

The data is available starting from the previous 15 minutes up to a year. This data range allows you to use these reports for monitoring the network to see what has been happening near real time, troubleshooting, and long-term capacity planning and trending. The granularity level of the report is based on the duration of time selected for the report. The reports can be as granular as 5 minutes.

12.2 ONGOING PROGRAM MANAGEMENT

The Vendor shall provide DIR with an Ongoing Program Management Plan in its Response which discloses the Vendor's processes and procedures for ongoing management of DIR designated Projects or Programs which shall include but not be limited to:

A TEX-AN NG Program Manager who shall serve as the Vendor's single point of contact (SPOC) for all TEX-AN NG matters for the Term of the CTSA;

To provide quality network implementation and ongoing operational support, Hughes has developed an extensive program management organization with carefully structured and proven procedures.

The Hughes Program Manager serves as the single point of contact within Hughes to manage and coordinate all resources and activities associated with the ongoing support of DIR and DIR Customers. The Program Manager leads a team of qualified individuals from the various Hughes support organizations and provides daily and long-term coordination of these resources as required to achieve successful execution of the project. Hughes Program Managers are selected for their breadth of expertise in the array of disciplines required for effective management of these types of projects. Hughes Program Managers are trained and certified in accordance with the Project Management Institute (PMI®). PMI is the world's leading association for the project management profession. It administers a globally recognized, rigorous, education, and/or professional experience and examination-based professional credentialing program that maintains ISO 9001 certification in Quality Management Systems.

The Hughes Program Manager will have responsibility for ensuring that proper coordination takes place between Hughes and DIR and DIR Customers. Typically, the deliverables from the Hughes program management team are as follows:

- Project plan and implementation schedule
- Customer site installation specification
- Coordination of overall site installation process
- Implementation of site maintenance plan
- Reporting and periodic project status reviews
- Contract administration as required

With a single point of contact (the Program Manager) responsible for managing the complete implementation of the network, Customers can stay focused on their own strategic initiatives and projects and not have to allocate precious technical resources to network implementation and management.

Procedures to control, track and manage Projects as determined by DIR;

The Program Manager adapts the procedures and tools to match the specific requirements of the program. In general, the Program Manager will manage the following items to ensure that the project is implemented to the satisfaction of DIR:

- Customer introduction
- Program scope and objectives
- Contractual requirements
- End item specifications
- New developments
- Design reviews (PDR, CDR)
- Program reviews
- Target schedules
- Required resources
- Financial terms

- Risk areas (penalties, technical exposures)
- Customer training

Procedures for disaster recovery planning and execution activities;

Hughes has designed the network to obtain 99.7% network availability. However, Hughes recognizes that outages will occur. How recovery is accomplished depends on the type of failure.

Recovery of Remote Site Failure

An outage at a remote location can be due to two primary factors. The first is a hardware failure that makes the remote CPE inoperable. In this situation, the Hughes Help Desk will dispatch a field service technician to correct the failure and restore service.

The other type of situation that can develop is where the remote CPE is working but cannot establish a link with the Hughes Network Operating Center. This can occur due to a very heavy rain or ice creating interference and reducing the signal strength or due to a failure of the radio on the antenna. The system is designed to provide 99.7% availability with taking these outages into consideration. To improve the availability and recovery from this type of failure, the indoor unit supports a terrestrial connection for redundancy. This feature is called Virtual Automatic Dial Backup (VADB) because it utilizes a dial-up VPN connection.

Recovery of Satellite Transponder Failure

When a signal is sent to a satellite for transmission, the main element involved in receiving the signal and amplifying it for return transmission to Earth is called the transponder. In the history of commercial satellite communications, the incidence of transponder failure has been extremely rare, although it can and has happened. In almost all cases, the failure mode is a slow performance degradation over an extended period of time. This situation is typically observed well in advance of the point where communications service is affected and corrective action is taken in a planned and orderly manner. In the event that the various ground commands available to the satellite operators cannot correct the problem on the affected transponder, a redundant transponder (or TWT) is switched into operation to replace the faulty unit. This process does not require any involvement of the Customer or changes in configuration for the remote equipment.

Recovery of Satellite Failure

Communications satellites are designed for the utmost in reliability. The traveling wave tube (TWT) amplifiers are redundant with a ring switching arrangement. This ring switching allows even double failures to be recovered. Because the component design life exceeds the satellite design life (which tends to be limited by the available station-keeping fuel), the likelihood of component failure remains extremely low throughout the life of the satellite.

Hughes maintains a Network Disaster Recovery Operating Procedure (NDROP) as its plan for responding to a satellite failure. In this plan, Hughes has identified the Customers and associated remote locations that would be impacted by the in-orbit failure of a satellite.

Hughes' NDROP document provides detailed procedures to be followed in the event of an unrecoverable satellite failure, and for the purpose of restoring the affected communication networks to service as soon as possible.

The NDROP plan provides detailed descriptions of the declaration and notification process. A crisis management plan is delineated and lists the role and interaction for each functional group including the

call center, operations, engineering, emergency response center, and program management. Also included is a description of first-, second-, and third-level field resources.

After a satellite failure is declared, Hughes will mobilize a set of functional teams. These teams will coordinate internally, and with Customer personnel, to reestablish network connectivity at each remote site. Clearly, the most critical element of this process relates to repointing of VSAT systems to an operational satellite with defined frequencies and support configurations. Hughes has at its disposal three levels of repoint resources, which can be quickly and efficiently deployed. These include personnel that typically handle Hughes installations and those that provide field service to Hughes Customers.

The repoint process is managed from a geographical perspective, with an assigned program and technical manager for each region. Resources, which have been pre-identified in each region, are deployed using the NDROP database. Priorities for repoint activity are driven by geographical proximity, that is, repoint crews identify those sites which they can arrive at most quickly.

Recovery of Hub Failure

Hughes operates three major NOCs in Germantown, MD, Las Vegas, NV, and Detroit, MI. Critical electronic NOC components are equipped with redundancy in order to maintain the necessary level of availability. The entire operations activity is maintained in a secured facility with battery backup and diesel generators that are capable of supporting 150% of the building's power requirements for up to a week with the current fuel load. Backup power systems are routinely verified and utilized during maintenance windows to ensure that the systems are operational. Delivery schedules for additional diesel fuel have been arranged so that it can be delivered at preset times in the event the generators are required. Satellite uplink RFTs are distributed around the campuses and are connected via a fiber ring that allows for the switching of traffic. Considerable expense has been made to ensure the reliability and redundancy of the campus environment.

The traffic carrying NOC components will automatically switch in a redundant element in the event of a failure. An alarm message is generated to the NOC operator. The operator examines the failure state and determines if the shelf spare needs to be immediately installed. Most elements can be hot swapped so that there is no interruption in traffic. For those elements that cannot be automatically switched in, there are shelf spares preconfigured and ready to be installed in the event of a problem.

For an incremental charge, Hughes can work with a Customer to develop a Customer-specific Disaster Recovery plan and set aside dedicated equipment at an alternate Hughes facility to support a faster recovery in the event of a disaster. In the event it is determined by a Customer that this type of a disaster recovery network is required, Hughes will work closely with them to develop plans for Disaster Recovery (DR) and/or Business Continuity Management (BCM) arrangements for the data network.

Procedures to resolve interoperability problems;

Inter - operability problems will be resolved through the Hughes Network Engineering team. This team of networking experts will be directed and managed by the Hughes Program Manager assigned to DIR to ensure that interoperability problems quickly and thoroughly. Depending on the severity and specific nature of the interoperability problem the Program Manager will schedule periodic status reviews with DIR to communicate progress.

Procedures to respond to escalated Service concerns;

Communication between Hughes and DIR and DIR Customers will be essential to ensure that the Customers' day-to-day operations are not being impacted by the Hughes implementation and that the network service is being delivered as planned. Based on guidance from DIR, the Hughes Program Manager will establish regular program updates, either through face-to-face meetings, teleconferences, or regular electronic or written reports. The Hughes program team is on call 24x7 and always available in

the event that there are immediate issues that need resolution. Furthermore, through the Hughes Customer Gateway, DIR can always get real-time updates with respect to installation status and schedule, remote site status, trouble ticket updates, etc. Escalation procedures are clearly established on the Customer Gateway to ensure that trouble tickets and configuration requests are addressed and resolved in a timely fashion.

In addition, Hughes will provide escalation paths to DIR through:

- Account Manager, as needed
- Program Manager, as needed
- Quarterly Program reviews with functional group representation from Hughes
- Semi-annual on-site network audits
- Annual Executive Briefing

Program Manager shall participate in CTSA performance reviews;

Hughes understands and will comply with this requirement.

Program Manager shall participate in CTSA Amendment negotiations;

Hughes understands and will comply with this requirement.

Program Manager shall serve as an escalation point; and

Hughes understands and will comply with this requirement. This is consistent with the role of the Program Manager in the Hughes organization.

Procedures to manage the Vendor's individual Subcontractors to meet or exceed the Vendor's performance thresholds and all other Requirements contained in this RFO.

Hughes has strong and effective subcontractor or management processes in place, from initial subcontractor assimilation to active oversight of performance. These processes enable Hughes to consistently deliver superior task order execution and network management services.

The key elements of the Hughes subcontractor management approach are:

- **Selection** – Perspective subcontractors are reviewed for capabilities, financial strength, past performance. Onsite interviews are conducted by Hughes to evaluate management and discuss the subcontractor agreement. A subcontractor contract is established defining the scope, objectives, quality requirements, fees, reporting requirements, and tasks the subcontractor will execute for Hughes.
- **Education** – All initial subcontractor-technician training is hands-on and face-to-face. Subcontractor employees are also given Web access to ordering and provisioning systems and are cleared to take the education/training module. Upon completion, the subcontractor employee is cleared to use the portions of the portal related to the tasks they will use for task order tracking and reporting.
- **Access to Hughes Tools** – Each subcontracted company has gone through extensive train-the-trainer programs and are required to train and certify all of their subcontractors who will be conducting installation work for us.
- **Performance Monitoring** – Execution of tasks are monitored on a day-by-day basis and performance issues identified. Every new agency is assigned an Implementation Coordinator who

is responsible for agency interface activity regarding installations. The Implementation Coordinator also works with our regional Installation Managers and Installation Coordinators to ensure all scheduling is accurate, agency portal is updated, and sites are completed on time. Each subcontractor is assigned an installer certification number and all installs are tracked showing who actually performed the work at the install site.

- **Quality** – Hughes has a published Quality Assurance Program that all contractors are contractually required to follow. Photos are required to be taken at every remote site install as well as an installation site audit and release form to be signed by the site point of contact. Quality audits of sites are conducted on a random and periodic basis with Hughes internal field support personnel. The results of all audits are captured in the Hughes Quality Assurance database for use in tracking the quality of installations of all contractors and subcontractors.
- **Reporting** – Weekly performance reports are reviewed with each subcontractor and tasks identified to address any issues in performance that are identified. Open correction action tasks are reviewed monthly. Subcontractors failing to meet and/or failing to address performance objectives are subject to potential contract termination or financial penalties.

12.3 PROGRAM MANAGEMENT REPORTING

The Vendor shall provide DIR with a Weekly Electronic Status Report for all current Projects which shall include at a minimum:

- ***Schedule changes***

Hughes will provide a weekly Electronic Status Report for all current projects, including current schedule and any changes.

- ***Updated project plan***

Hughes will provide a weekly Electronic Status Report for all current projects, including an updated project plan.

- ***Related Project Services inventory***

Hughes will provide a weekly Electronic Status Report for all current projects, including related project services inventory.

- ***Risk and Issues log***

Hughes will provide a weekly Electronic Status Report for all current projects, including a risk and issues log.

- ***Any other pertinent Project documentation***

Hughes will provide a weekly Electronic Status Report for all current projects, including any other pertinent documentation.

The Vendor shall deliver a quarterly Status of Projects by Customer Report to DIR including the following, at a minimum:

- ***Customer name;***

- *Project name;*
- *Brief Project description;*
- *Name of Project Manager or lead employees;*
- *Original planned Project completion date;*
- *Current planned Project completion date;*
- *Approximate percent Project completion;*
- *Project phase (Definition – gathering Requirements, design, etc.; Planning – ordering, provisioning, etc.; Implementation – turn-up, etc. through Customer Acceptance; closeout – Project review, lessons learned, etc.);*
- *Current status (Green – Project on track to meet planned completion date; Yellow – current issues have potential to impact completion dates; Red – critical issues will likely cause completion date slippage), and*
- *Current issues and risks.*

Hughes will conduct Quarterly Program reviews with functional group representation from Hughes attending. These Quarterly Program reviews can be conducted with DIR in person or via teleconference, but they will include as a minimum:

DIR reserves the right, in its sole and absolute discretion, to request, in special cases (such as performance shortfalls or issue escalations), more frequent reporting as needed.

Hughes will provide, upon request by DIR, more frequent reporting as needed.

The Vendor shall, at DIR's request, support (by making its representatives available in person) periodic meetings and collaborative forums with DIR and/or Customers to discuss topics of interest and respond to questions or make presentations specific to TEX-AN NG Services.

Hughes will support (by making its representatives available in person) periodic meetings and collaborative forums with DIR and/or Customers to discuss topics of interest. We will respond to questions and develop and present presentation specific to TEX-AN NG services.

The Vendor shall be responsible for aggregating Subcontractor performance data and incorporating the Subcontractor data into required reports. Subcontractor performance data shall not be provided separately, unless specifically requested by DIR.

Hughes will be responsible for aggregating Subcontractor performance data and incorporating the Subcontractor data into required reports. This is considered standard Hughes process.

As part of its performance measures reported to State leadership, DIR must show the cost avoidance realized by the State for the products and services obtained under DIR contracts. Cost avoidance is the difference between the negotiated DIR contract price and the prevailing market price. CTSA's resulting from this RFO task the Vendor with cooperating with DIR in assembling and reporting the cost avoidance performance measures. Further, the CTSA requires the Vendor to furnish pricing from other contracting vehicles (See Appendix F).

Hughes will work in a collaborative fashion with DIR to clearly show the cost avoidance realized by the State for the products and services provided by Hughes. We feel strongly that our ability to provide exceptionally high availability through true network diversity has significant cost avoidance implications for the State. Furthermore, there is significant cost avoidance in our ability to deliver broadband Internet Access to any Small Office or Home Office location, regardless of geographical location and regardless of proximity to telephone central office or cable infrastructure.

Ongoing Help Desk Management

The Vendor shall provide DIR with an Ongoing Help Desk Management Plan in its Response which discloses the Vendor's processes and procedures for ongoing management of the Help Desk which shall include, but not be limited to:

- ***Process for responding to a report request from DIR or DIR Customers;***

Reports are available on the Customer Gateway. Authorized DIR and DIR Customer personnel may access these reports and download them at any time. If there is a problem or a requirement for a custom report, then the Hughes Program Manager can be contacted.

- ***Process and procedures to support DIR Customers in Transition;***

Hughes will use the same process and procedures to support DIR Customers in Transition as that is being used to support other DIR Customers. If there are special requirements for Customers in Transition the Hughes Program Manager will work with the appropriate DIR representatives to develop custom processes for those unique requirements.

- ***Process for responding to a general information request;***

General information requests should be directed to the Hughes Program Manager and the Hughes Account Executive.

- ***Support for at DIR Customer conferences, at no cost to DIR, including, but not limited to conferences pertaining to the following:***

- ***Briefings on CTSA and Service offerings;***

Hughes will provide support DIR Customer conferences at no cost to DIR, for conferences pertaining to briefings on CTSA and Service offerings.

- ***Training sessions;***

Hughes will provide support at DIR Customer conferences, at no cost to DIR, for conferences pertaining to briefings on CTSA and Service offerings.

- ***AAR briefings;***

Hughes will provide support at DIR Customer conferences, at no cost to DIR, for conferences pertaining to AAR briefings.

- ***On-site representative(s) to answer questions and document special topic is-sues, and***

Hughes will provide on-site representatives, at no cost to DIR, to answer questions and document special topic issues. Note that Hughes has an Account Executive based in Austin, Texas.

13.0 REPORTING

13.1 PERFORMANCE MANAGEMENT

Hughes continuously monitors and proactively manages the performance levels of the services provided to our Customers. The Hughes Customer Gateway provides a wide range of powerful monitoring and reporting capabilities. It allows the Customer to manage and optimize bandwidth and application delivery. Historical reports are available for traffic analysis and troubleshooting. The historical reports are useful for understanding the network utilization and trends such as top talkers, top applications, peak usage time, etc. These reports are also useful for forecasting and capacity planning exercises.

The Network Level Historical Reports provide access to network performance data at the aggregate network level. These reports are posted weekly on the Customer Gateway and can be accessed for the past three months. The reports are broken down by inbound and outbound traffic, which provide traffic patterns in both directions.

These reports also include the Bytes vs. Time, Bit Rate vs. Time, Top 25 Remote Sites, and Top 20 Applications Reports. These reports give the Customer the ability to view the traffic for the aggregate network as well as by top sites and top applications. This report provides information regarding which sites or application use maximum bandwidth and if there are any that produce unusually high inbound or outbound traffic. Following are some of the examples of the reports available as part of the standard service.

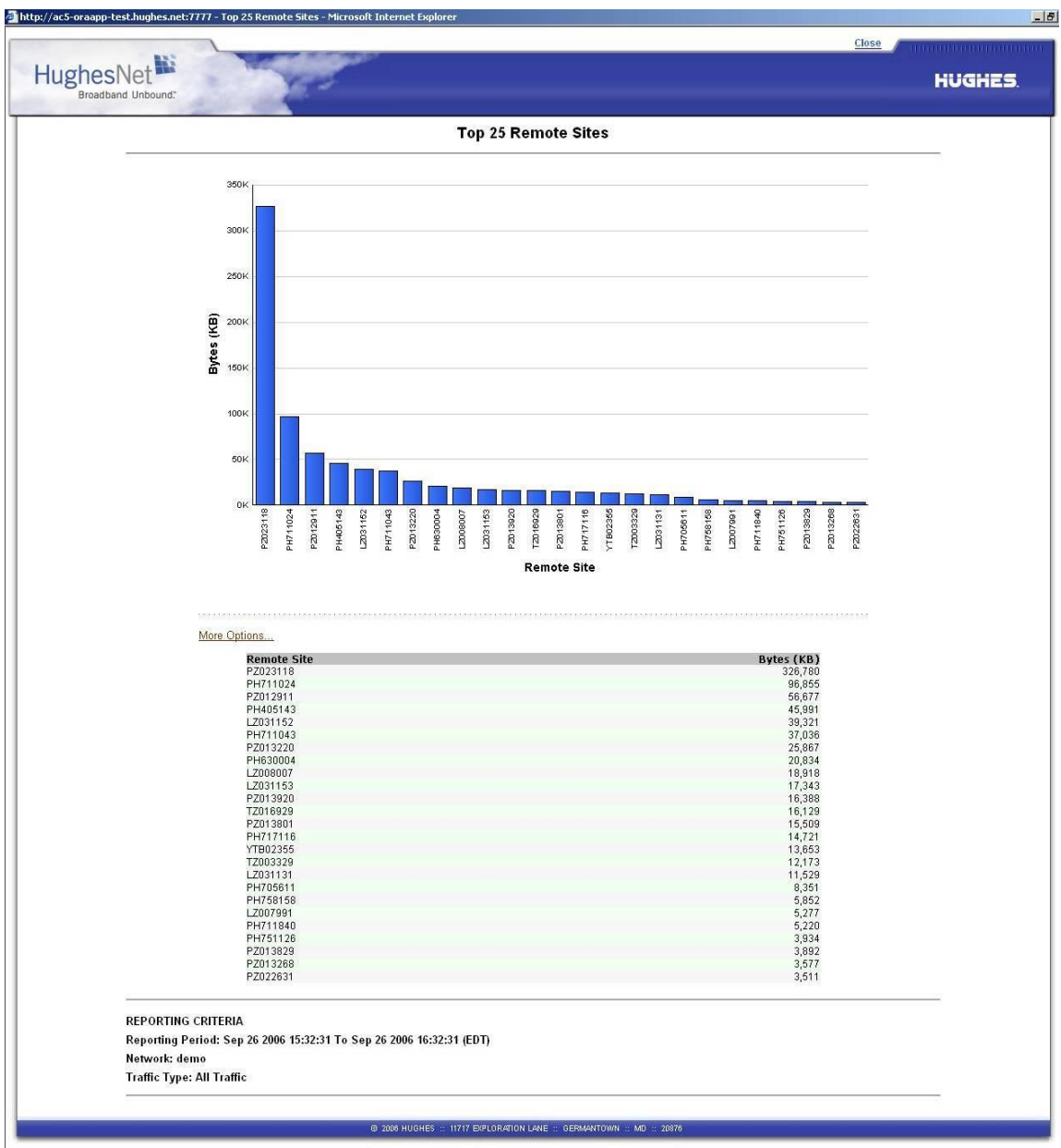


Figure 13-1. Top 25 Remote Sites

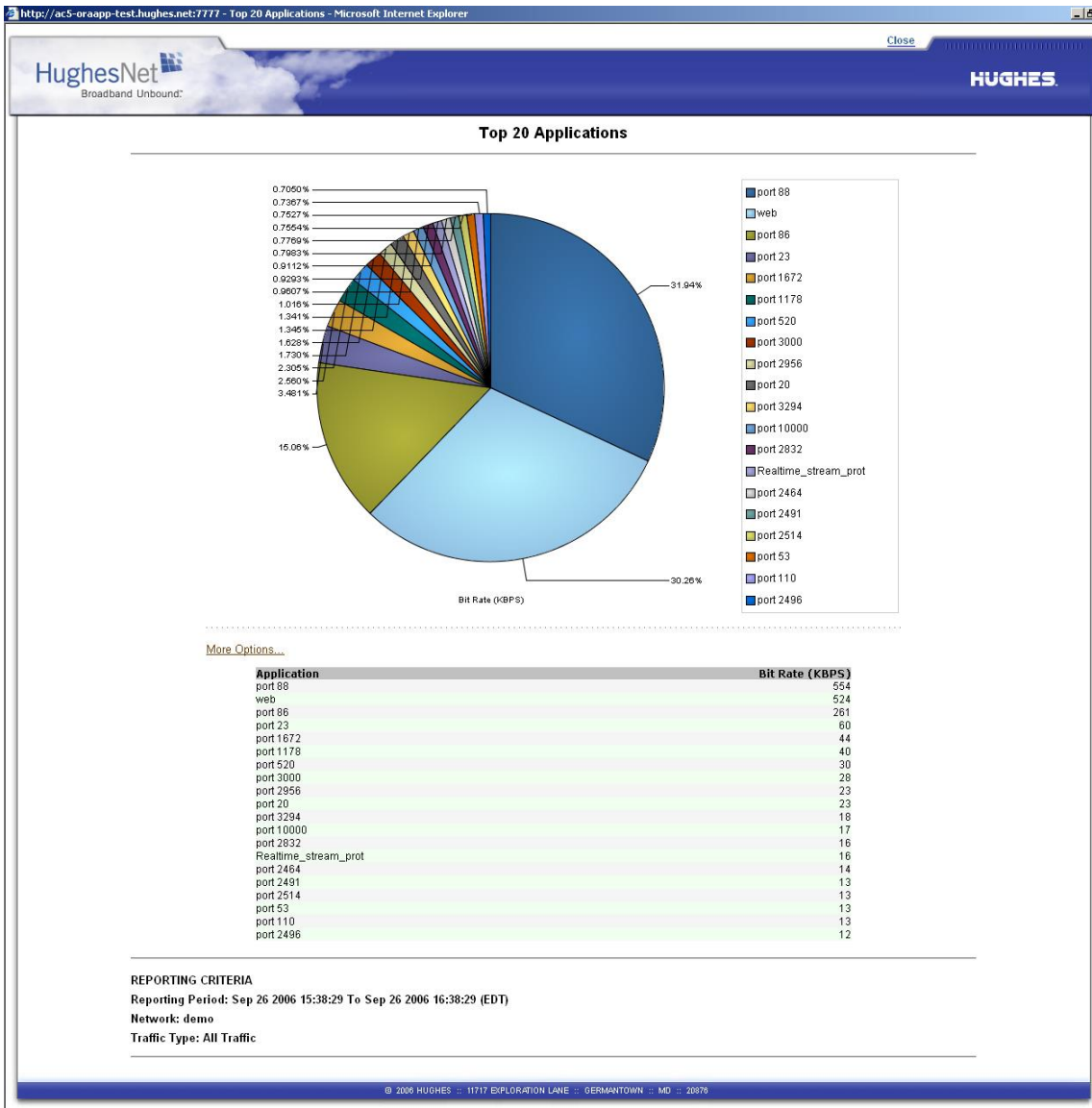


Figure 13-2. Top 20 Applications

MRTG (Multi-Router Traffic Grapher) reports show aggregate near real-time network bandwidth utilization graphs. The graphs show utilization for both overall network inbound and outbound traffic. The daily graphs are based on 5-minute traffic samples. The weekly, monthly, and yearly graphs rollup averages from a previous graph (i.e., the weekly graph is based on averaging data points from the daily graph). The graphs are updated once every 5 minutes.

MRTG reports are useful for studying trends in traffic on the network. The MRTG reports are particularly useful for determining when the traffic “peaks out” for an extended period of time, indicating that there could be a capacity problem and a need to upgrade. It also helps in understanding traffic patterns over a period of time and in planning capacity needs for the future.

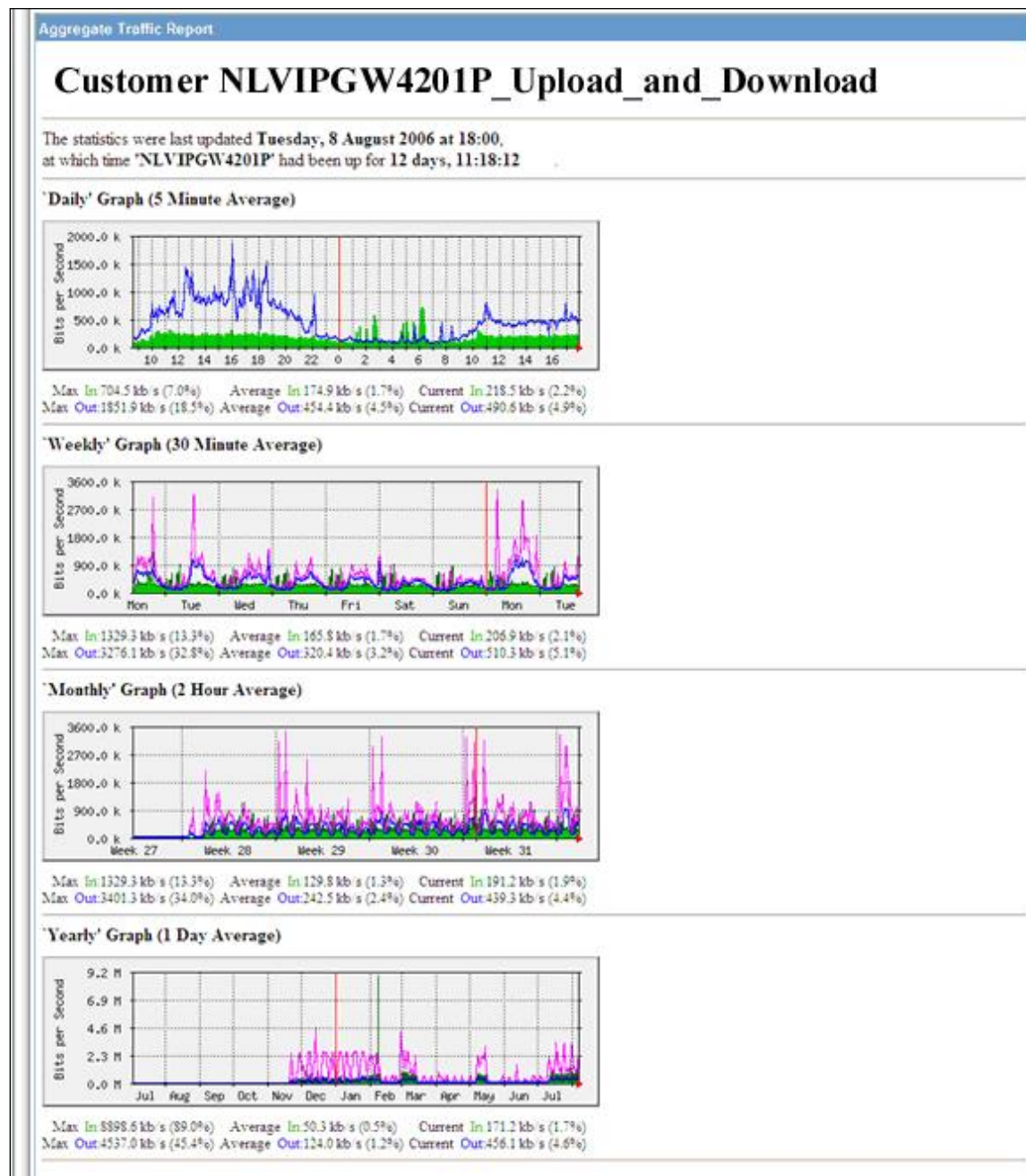


Figure 13-3. Aggregate Traffic Utilization Report (MRTG)

Standard Reporting capabilities;

There is a wide range of reports that are always available on the Hughes Customer Gateway. As described in Monthly standard reporting below. Above, there are Historical Performance Management Reports such as Bytes vs. Time, Bit Rate vs. Time, Top 25 Remote Sites, and Top 20 Applications Reports. There are daily MRTG reports available that show the inbound and outbound network traffic levels based on 5-minute traffic samples. Weekly, monthly, and yearly graphs are also provided.

In addition to the Performance Management Reports, there are standard monthly reports on the Site List (including additions and removals), trouble ticket history (summary and detail), and RMA request and status.

Enhanced Reporting capabilities;

Optional On-Demand Report capability can be made available. This option provides the ability to run reports based on criteria such as time duration, traffic flow, individual site, etc. There is a wide variety of reports available allowing network managers and support personnel to view network traffic at the TCP/IP application level by a variety of parameters including port, servers, hosts, host conversations, protocols, such as IP/TCP/UDP, etc.

The enhanced reporting capability allows users of the Customer Gateway to take the standard monthly reports (e.g., top talkers, top applications, application throughput) and create custom reports on demand based on a variety of input criteria.

The query-based capability provides the ability to select traffic flow by inbound and outbound, different networks defined for the traffic (different agencies, traffic flowing through different hubs, etc.), and the time duration. The query also provides the capability to view the data for an individual site or the entire network.

The data is available starting with the previous 15 minutes up to a year. This data range allows you to use these reports for monitoring the network to see what has been happening in near real time, troubleshooting, and long-term capacity planning and trending. The granularity level of the report is based on the duration of time selected for the report. The reports can be as granular as 5 minutes.

Monthly Standard Reports;

Monthly Customer reports provide detailed information and analysis regarding aspects of the network and its performance. Each month a report package will be posted to the Customer Gateway consisting of:

- Monthly availability analysis percentage in bar chart format
- Outage analysis detail report
- Remote outage analysis percentage report
- Master site list summary
- Master site list report
- Newly commissioned sites list
- Customer remote service performance summary
- Remote maintenance field services metrics

This report package, which is compiled from Hughes' in-house database, is posted within the first 10 days of each month. The following paragraphs contain a detailed description of the monthly report components.

Monthly Availability Analysis % in Bar Chart Format

This report is a bar graph that shows a sliding 12-month breakdown of the NOC, remote, and network availability (weighted mean average). A line of data at the bottom of the columns shows the number of active sites recorded in the database.

Outage Analysis Detail Report

This report contains trouble ticket breakdown with Case ID, Site ID, Reported Problem, Resolution Code, Resolution Description, Covered Hours, Elapsed Hours, Outage Time, % of Service Lost, Non-Available Hours, Date Resolved, and Date Opened. The outage analysis detail and outage analysis percentage report from the Hughes Ticket System database allows you to view the breakdown by problem, date and

time the trouble ticket was opened, date and time it was closed, site number, who the problem was assigned to, and the covered and elapsed hours. Outage analysis by site lists each site that had an outage during the reporting month.

Remote Outage Analysis

This analysis includes a breakdown of the trouble tickets for the reporting month, by cause, in the form of a color pie chart. In addition to the total number of sites in your network, the MTTR for both clock and actual outage period are provided.

Trouble Tickets

Actual trouble tickets from Hughes Ticket System are available through the Customer Gateway. Tickets can be selected for viewing on the Case Search screen using such selections as date ranges and case status. Categories of tickets can be selected for viewing or printing from the Problem Status screen. The various categories include Open, Hold, Pending, Closed, or (All). Any of the categories can be selected with a specific date range specified. Any ticket that can be viewed can be printed using the Print Frame capability under the File Selection.

Master Site List Summary

This summary provides a count of the total number of sites broken down by Active Sites, Inactive Sites, Not Yet Commissioned Sites, Decommissioned Sites, Decommissions in Progress, Installations in Progress, and the Total Number of Sites. This report is produced at the beginning of the month as well as mid-month to accommodate Customer billing cycles.

Master Site List

This list contains a listing of all Customer-commissioned sites to date. This information comes from data gathered by Hughes CRM Ticket System database. This list is sorted by site ID number and includes the following fields: Site ID, Site Status, location name, Site address, City, State, ZIP code, Primary contact name, Primary phone number, Date created, Adapter model, NOC, Commission date, and Decommission date. This report is produced at the beginning of the month as well as mid-month to accommodate Customer billing cycles.

Newly Commissioned Sites List

This list shows all the sites that were commissioned during the reporting month. The information, which is gathered through Hughes' database, lists the site ID number and includes the following fields: location name, site address, city, state, contact name and phone number, commission date, type of unit installed, and the National NOC facility on which the site is supported.

Customer Remote Service Performance Summary

This summary lists the total number of commissioned sites to date, total number of decommissioned sites to date, total number of active sites at the end of the reporting month, total available hours (for remote network), total non-available hours (for remote network), Mean time between maintenance activity (remote network), remote availability, percent of tickets requiring remote dispatches, and percent of tickets not requiring dispatch. In addition, the report includes a table that displays a breakdown of the trouble tickets for the reporting month by cause area, total count by cause area, % of cause of breakdown by area, hours of outage by area, and the average outage time by breakdown area.

Remote Maintenance Field Service Metrics

These metrics contain the Number of Sites, Contract Calls, Monthly Contract Call Rate, First Call Fixed, % of First Call Completion, Dispatches Meeting Response Time, Dispatches Meeting Restore Time, Average Response Time (Hrs), % of Response Time within Target, Average Restoral Time (Hours), % of Restoral time within Target, Calls Open > 24 hours, Calls Open > 48 hours, % of Calls Open > 24 Hours, and % of Calls Open > 48 Hrs.

13.2 HELP DESK REPORTING

The Vendor shall provide monthly Customer Care reports (see Appendices B-6, B-8 and B-9) to DIR as follows:

- ***Trouble Ticket Aging Report by Customer;***

Hughes will make available on the Customer Gateway monthly reports on trouble ticket aging by Customer.

- ***SLA Non-Compliance Report;***

Hughes will make available on the Customer Gateway monthly reports on SLA Non-Compliance.

- ***Local Services Sales Report;***

This information is available in the standard Newly Commissioned Sites List ***monthly report.***

- ***SOHO Sales Report;***

Hughes will provide a monthly report on SOHO Sales.

- ***Internet connectivity for non-State agencies; and***

Hughes will provide a monthly report on Internet connectivity for non-State agencies.

- ***Marketing Report. Including:***

- ***Date(s) of marketing effort;***
- ***Marketing venue;***
- ***Description of marketing effort***
- ***Target market;***
- ***Marketing lead responsible for effort; and***
- ***Effectiveness of effort.***

The Hughes Account Executive will provide a monthly report on marketing efforts, including but not limited to:

- Dates of marketing efforts
- Marketing venue
- Description of marketing effort
- Target market
- Marketing lead responsible for effort
- Effectiveness of effort

Other reports that shall be provided by the Vendor as requested by DIR are:

- **AAR;**

On the next business day after a critical outage, the details of an outage are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the outage ticket in a form viewable by the Customer on the Customer Gateway.

- ***Various reports of information in order to determine performance quality of Customer Care organization, and***

The Hughes Program Manager and Customer Care organization will work together to create the necessary reports of information in order to determine the performance quality of the Hughes Customer Care organization. This is typically reviewed in Quarterly Program Reviews.

- ***Other ticket information as requested by DIR.***

Hughes will provide any other ticket information as requested by DIR.

The Vendor shall submit all reports to DIR in an electronic format.

Hughes will submit all reports in an electronic format. All standard reports will be available for download via the Customer Gateway. Any ad hoc or custom reports will be submitted to DIR electronically via email.

14.0 ESCALATION

14.1 ESCALATION PROCEDURES

Hughes escalation policies provide a communication path for the Hughes team to solve network problems. In the event that traffic is not interrupted and the Customer agrees on the status, a noncritical problem notification will be sent to the Network Engineering team. However, if traffic is interrupted and/or there is a disagreement on the status, the critical problem notification procedure is followed.

- In the event of a problem, affected Customers are notified immediately. When a problem is observed or reported, a Network Management ticket is opened and subsequent status entries displayed on the Customer Gateway.
- Hughes provides Customers with status reports. Verbal updates are provided for critical outages and through the Program Manager when multiple Customers are involved. Status entries are also displayed on the Customer Gateway. The ticket through the Customer Gateway is updated later and made visible when approved.
- On the next business day, the details of an outage are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the outage ticket in a form viewable by the Customer on the Customer Gateway.
- Critical problems that cannot be resolved within 15 minutes are escalated.
- Escalation policies can be used for Network or remote service problems the Customer is experiencing. All requests for escalations related to Network or remote issues are submitted to the Hughes Help Desk. The Hughes Help Desk escalates the request through all appropriate channels.

Figure 14-1 and Figure 14-2 depict the remote maintenance support procedure.

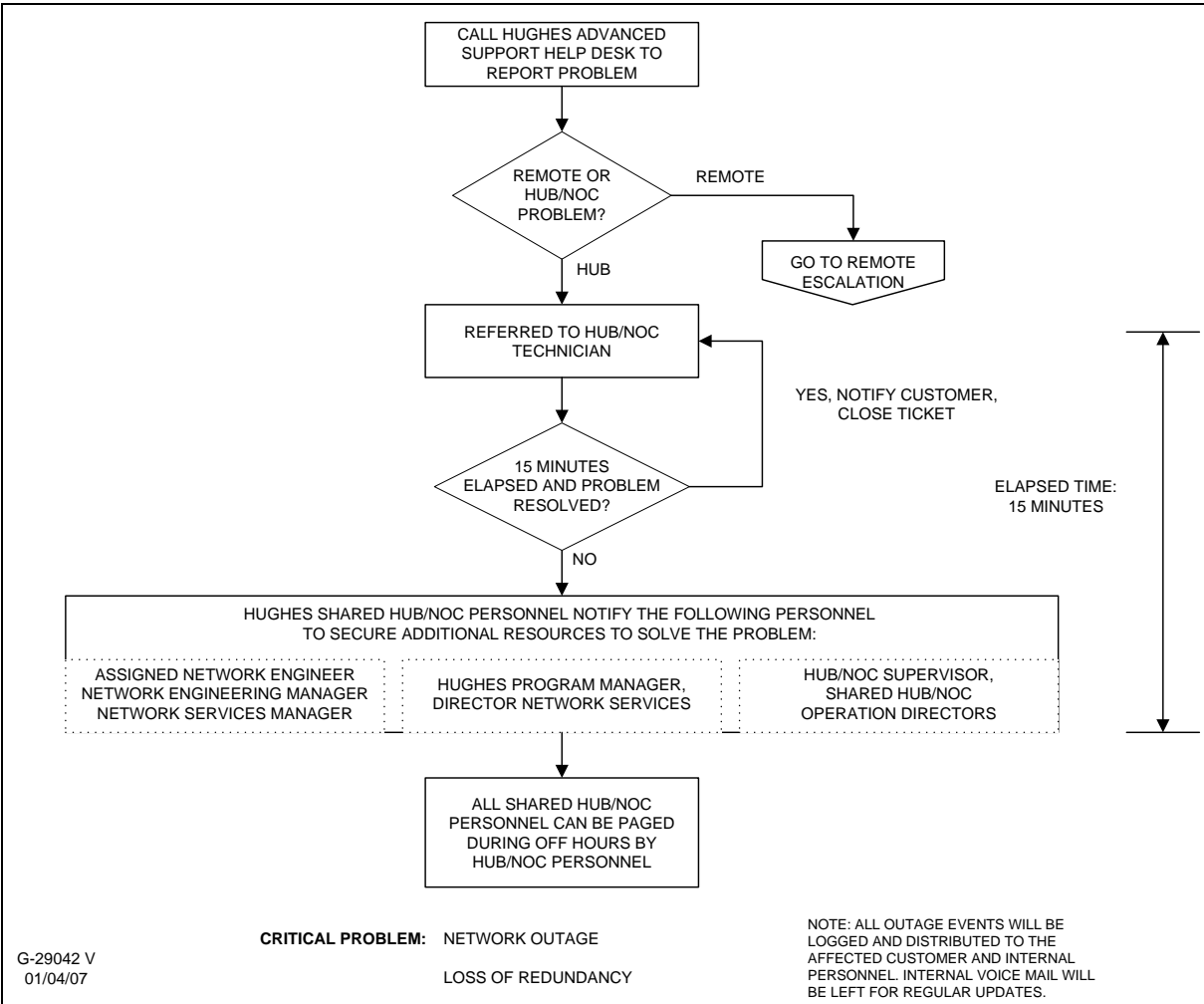


Figure 14-1. Hub/NOC Escalation (Critical)

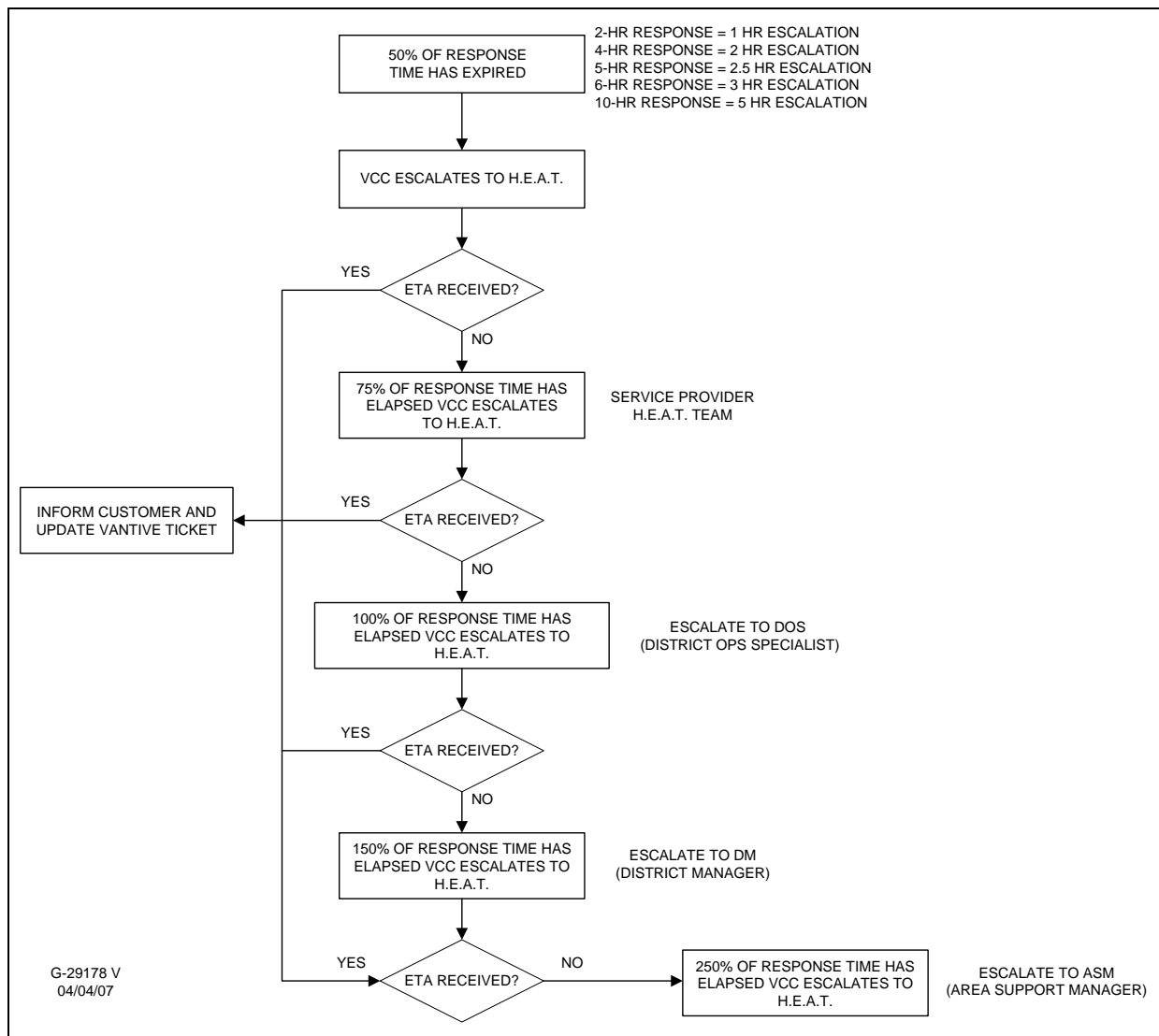


Figure 14-2. Customer ETA Escalation

Procedures for logging, tracking, managing, and reporting for the following:

- **Security incidents;**

- In the event of a security incident, affected Customers are notified immediately. When the incident is observed or reported, a Network Management ticket is opened and subsequent status entries displayed on the Customer Gateway.
- Hughes provides Customers with status reports. Verbal updates are provided for critical security incidents and through the Program Manager when multiple Customers are involved. Status entries are also displayed on the Customer Gateway. The ticket through the Customer Gateway is updated later and made visible when approved.
- On the next business day, the details of an outage are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the security incident ticket in a form viewable by the Customer on the Customer Gateway.

- ***Network Faults, and***

- In the event of a problem, affected Customers are notified immediately. When a problem is observed or reported, a Network Management ticket is opened and subsequent status entries displayed on the Customer Gateway.
- Hughes provides Customers with status reports. Verbal updates are provided for critical outages and through the Program Manager when multiple Customers are involved. Status entries are also displayed on the Customer Gateway. The ticket through the Customer Gateway is updated later and made visible when approved.
- On the next business day, the details of an outage are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the outage ticket in a form viewable by the Customer on the Customer Gateway.

- ***ESecS (E Security Systems) Faults.***

- In the event of an ESecS fault, affected Customers are notified immediately. When a fault is observed or reported, a Network Management ticket is opened and subsequent status entries displayed on the Customer Gateway.
- Hughes provides Customers with status reports. Status entries are also displayed on the Customer Gateway. The ticket through the Customer Gateway is updated later and made visible when approved.
- On the next business day, the details of the ESecS fault are investigated and an AAR is prepared. This AAR is submitted to the Program Manager for review and approval. Once the Program Manager releases the AAR, it is provided to the Customer and posted to the ESecS fault ticket in a form viewable by the Customer on the Customer Gateway.

15.0 TRAINING

15.1 TRAINING PROCEDURES

Hughes has a professional Technical Training Group whose objective is to provide Customers with world-class training in support of Hughes' products and services. Hughes' state-of-the-art training facility in Gaithersburg, Maryland has fully functioning laboratories and professionally qualified staff. A training registrar is available to take Customer course reservations through the Hughes Program Manager.

Courses taught at the Hughes training facility are hands-on courses dealing with equipment installation, maintenance, and operation. This training is not required for Customers using Hughes managed network services, but is available for those individuals who want to have a detailed knowledge of the technical aspects of Hughes products.

Hughes will also provide training to Texas DIR on use of the Customer Gateway. This training is typically conducted online and can be easily conducted in 1- or 2-hour-long sessions. Topics include:

- Login and navigate the Customer Gateway
- Manage their account password
- View scheduled installation activities
- Report and view the Remote, Network Management, and Network Engineering-related issues
- Update site information and locate sites
- View the reports and documentation provided by Hughes
- Report and view quality issues
- View Hughes company contacts

The Customer training will ensure that once the network implementation begins, the appropriate Texas DIR personnel are familiar with Hughes products and services and will know how to access the proper information that they need to do their jobs.

15.2 ONGOING TRAINING FOR BOTH DIR AND ITS CUSTOMERS AS NEEDED

Hughes has a professional Technical Training Group whose objective is to provide Customers with world-class training in support of Hughes products and services. Hughes' state-of-the-art training facility in Gaithersburg, Maryland has fully functioning laboratories and professionally qualified staff. A training registrar is available to take Customer course reservations through the Hughes Program Manager.

Courses taught at the Hughes training facility are hands-on courses dealing with equipment installation, maintenance, and operation. This training is not required for Customers using Hughes managed network services, but is available for those individuals who want to have a detailed knowledge of the technical aspects of Hughes products.

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The Customer training will ensure that once the network implementation begins, the appropriate Texas DIR personnel are familiar with Hughes products and services and will know how to access the proper information that they need to do their jobs.

Description of training for DIR and its Customers;

Courses taught at the Hughes training facility are hands-on courses dealing with equipment installation, maintenance and operation. This training is not required for Customers using Hughes managed network services, but is available for those individuals who want to have a detailed knowledge of the technical aspects of Hughes products.

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- View the reports and documentation provided by Hughes
- Report and view Quality issues
- View Hughes company contacts

The Customer training will ensure that once the network implementation begins, the appropriate Texas DIR personnel are familiar with Hughes products and services and will know how to access the proper information that they need to do their jobs.

16.0 MARKETING PLAN

Marketing Plan, including

Description of overall marketing and sales strategy;

- **Marketing**
 - Maintain a comprehensive Web site complete with TEX-AN NG solutions and services, information on how to purchase, and an easy, convenient way to get in touch with Hughes (government.hughes.com)
 - Participate in state government and industry trade shows and events
 - Advertise TEX-AN NG solutions in targeted state government and industry publications both online and in print
 - Host targeted Webinars focused around the needs of the Texas state government and other DIR authorized end-users
 - Reach out to all potential and current Customers via email blast or on-site meetings regarding important happenings with company, products and services; provide quarterly
 - Conduct seminars once each year on various topics, a combination of presentations and demonstrations. Target audience will be managers to C-level executives. Upon request, conduct a technical level seminar and discussion session
- **Sales**
 - Support TEX-AN NG sales with a dedicated Hughes sales team
 - Support sales activities working with Texas DIR and through DIR Web site
 - Support sales activity through direct contact with state agencies and other DIR authorized end-users, meet to determine requirements, and recommend appropriate solutions
 - Provide sales support and clarification for all technical and pricing questions

Number of resources dedicated to TEX-AN NG marketing function;

The following resources will provide support to the TEX-AN NG marketing function:

- John Fanelli, Senior Director, Government Sales
- Dan Brown, Marketing Staff Consultant

Number of resources dedicated to TEX-AN NG sales support function;

The following resources will provide support to the TEX-AN NG sales function:

- John Fanelli, Senior Director, Government Sales (301) 601-2691
- Tony Bardo, Assistant Vice President Government Sales
- Dave Tuscano, Sr. Director Government Sales Operations (301) 601-7284
- Paul Rabenhorst, Solution Consultant
- Mainul Haque, Solutions Consultant

- Deb Chowdhury, Sr. Director, Government Business Management
- Bill Snider, Program Manager (301) 601-7235
- Corporate Call Center

Number of sales offices related to TEX-AN NG program;

The following sales offices will provide support to the TEX-AN NG program:

- Hughes Network Systems, Germantown, Maryland
- Hughes Network Systems, Corporate Call Center

Number of planned marketing efforts in each year by TEX-AN NG market segment;

Hughes will conduct weekly, quarterly, and semi-annual marketing events for state and DIR authorized end-users. These efforts will include: emails blasts, webinars/seminars, and ads in state publications.

Customer notification of new Services awarded under the CTSA.

All communications regarding new services will be communicated by the Hughes Account Manager.

APPENDIX A: SUBSCRIBER AGREEMENT

Applies to TEXAN State Government SOHO VSAT Services ordered with a Business Internet Service Plan.

Thank you for choosing HughesNet®! PLEASE READ THIS SUBSCRIBER AGREEMENT CAREFULLY, AS IT CONSTITUTES A BINDING CONTRACT BETWEEN YOU AND HUGHES NETWORK SYSTEMS, LLC ("HUGHES"). BY APPLYING FOR OR ESTABLISHING AN ACCOUNT WITH HUGHES, YOU AGREE TO BE BOUND BY THE TERMS OF THIS AGREEMENT.

Subscriber Agreement Organization

This Subscriber Agreement is organized into six "Parts:"

Part I – Key Provisions;

Part II – The Service, Your Subscription and This Subscriber Agreement;

Part III – Payment;

Part IV – Permitted Use and Restrictions on Use;

Part V – Grant of Important Rights by You to Us, and Important Disclaimers, Acknowledgments and Obligations;

Part VI – General (Note: Although located at the end of this Subscriber Agreement, these terms are important.)

PART I – KEY PROVISIONS.

1.1 SPEED CLAIMS AND DISCLAIMERS.

HughesNet service is available in the contiguous U.S. with an unobstructed view of the southern sky, and its usage is subject to the Fair Access Policy. When you connect to the Internet using HughesNet, the upload and download speeds you experience will vary based on a variety of factors including the configuration of your computer, the number of concurrent users, network or Internet congestion, the speed of the Websites you are accessing, and other factors. Stated speeds and uninterrupted use of service are not guaranteed. Actual upload and download speeds may be lower than maximum advertised speeds, particularly during peak periods.

1.2 EQUIPMENT.

You specifically agree that any Equipment provided during a field service call may be new or refurbished as new. Any refurbished Equipment will have the same warranty as new Equipment.

1.3 SERVICE COMMITMENT AND EARLY TERMINATION FEES.

All Service Plans require a commitment of 24 months. If you have subscribed to any of the Business plans and you terminate service prior to the expiration of the commitment, you will owe, and your credit or debit card will be charged, the Early Termination Fees described below.

Early Termination: Purchase Option (Equipment and standard installation purchased upfront)

If you cancel your order before installation, you will not be charged.

If you cancel *within* 30 days of activation, no service termination fees will be charged, but you will not receive any refund for installation charges or other fees. You may return your HughesNet modem, power supply, and radio for a \$200 refund. All equipment must be received in good condition within 45 days of termination in order to receive this refund.

If you cancel after 30 days of activation but before the end of your 24-month term commitment, you will be charged a Service Termination Fee of up to \$400. The exact amount of the Service Termination Fee will be \$400 for the first three (3) months after activation of the HughesNet Service. Thereafter, the amount of the Service Termination Fee will decrease by \$15 per month for each month of active Service.

For customers eligible or required to return equipment, Hughes will provide instructions on how to de-install and return the required equipment.

Early Termination due to breach by Subscriber

If your account is terminated by Hughes for non-payment or any other reason, the Early Termination Fee will be charged immediately upon cancellation.

PART II – THE SERVICE, SUBSCRIBERSHIP AND THIS SUBSCRIBER AGREEMENT.

2. THE SERVICE.

Hughes provides a two-way, satellite-based Internet access solution that carries information between the Internet and your personal computer (the "Service").

2.1. COMPOSITION OF THE TERMS OF SERVICE.

This Subscriber Agreement and the HughesNet Subscriber Privacy Policy collectively make up the HughesNet Terms of Service. The HughesNet Terms of Service govern your HughesNet subscription and your use of the HughesNet Service and any other HughesNet services (as defined below). Certain features and services offered by Hughes and its suppliers contain additional terms or guidelines that supplement this Subscriber Agreement and, along with this Subscriber Agreement, will govern the use of those services. You will have an opportunity to review the additional terms before you sign up or use those services.

3. MODIFICATIONS; RIGHTS OF CANCELLATION OR SUSPENSION.

3.1. MODIFICATION OF THIS SUBSCRIBER AGREEMENT; NOTICES.

Hughes may revise this Subscriber Agreement (the "Agreement") at any time by posting the modified version to <http://subagree.hughesnet.com>. Although Hughes may choose to provide you with individual notice of material modifications to the Agreement, it has no obligation to do so. In the event you do not agree to such revisions, you must cancel your subscription and stop using the Service prior to the effective date of such modifications or, if no effective date is provided, within thirty (30) days after such modifications are first posted on the Hughes Website at www.Hughesnet.com (the "Website"). Otherwise, except as provided in Section 19.5 below, your continued use of the Service after the effective date of such modifications constitutes your full acceptance of such modifications.

3.2. MODIFICATION OF THE SERVICE.

Hughes may discontinue, add to, or revise any or all aspects of the Service in Hughes' sole discretion, with or without notice, including without limitation access to support services, publications, and any other products or services ancillary to the Service. For purposes of illustration and not limitation, Hughes may: (a) establish and enforce limitations concerning use of the Service, e.g., the maximum number and/or

size of email messages that may be sent from or received by an account on the Service, and the maximum amount of bandwidth that may be used by a single user or a single account; (b) take any action that Hughes deems appropriate to prevent and/or delete bulk email; (c) delete old email messages from any account; (d) quarantine or delete messages or content suspected of containing viruses or other malware; (e) refuse to process email or instant messages that fit criteria defined by us; or (f) modify any user setting. In the event that Hughes makes any changes to the Service or its availability, Hughes may, but is not required to, notify you.

3.3 PRICING REVISIONS; NOTICES.

Hughes may revise pricing for any Service Plans at any time by providing notice of any price change to you over the HughesNet Service as well as written notice to your address. Hughes will endeavor to provide at least 30 days' notice of any such change to you. In the event you do not agree to such price revisions, you may terminate your subscription (as provided herein) and stop using the Service before the later of either the effective date of the price change or thirty (30) days after such notice is delivered, in which event you will not be bound by such changes. Otherwise, except as provided in Section 19.5 below, your continued use of the Service after such time constitutes your full acceptance of such pricing revisions.

3.4. TERMINATION BY SUBSCRIBER.

In the event that Hughes modifies this Agreement, the Service, or related pricing or billing terms, you may immediately terminate your account and this Agreement. Subject to your payment of the termination charges herein described, you may also do so at any other time and for any reason on written notice to Hughes. You must terminate this Agreement in accordance with the terms and conditions specified herein; failure to do so may delay or prevent us from knowing that termination was intended. Failure to terminate in accordance with this Agreement may result in your continued liability for all fees and charges associated with your Service account until such time as the Agreement has been properly terminated or Hughes has acknowledged such termination in writing. In the event you cancel your subscription to the Service prior to the expiration of the minimum commitment period specified for your applicable service plan, you may be subject to a service termination fee of up to \$400. The exact amount of termination charges which will apply is specified in Section 1.3 above.

If you wish to terminate your service, contact our Billing Department at 1-866-347-3292. Except as may be otherwise provided in this Agreement, cancellation of your Subscription is your sole right and remedy with respect to any dispute with Hughes. This includes, but is not limited to, any dispute related to, or arising out of: (1) any term of this Agreement or Hughes' enforcement or application of this Agreement; (2) any policy or practice of Hughes, including the Fair Access Policy and the HughesNet Subscriber Privacy Policy, or Hughes' enforcement or application of these policies; (3) the content available on the Service or the Internet or any change in content provided by Hughes; (4) your ability or inability to access and/or use the Service; or (5) the amount or type of fees, surcharges, applicable taxes, billing methods, or any change to the fees, applicable taxes, surcharges, or billing methods.

3.5. TERMINATION OR SUSPENSION BY HUGHES.

Hughes reserves the right to terminate or suspend your account and this Agreement at any time, with or without notice, in whole or in part, for any reason or no reason.

3.6. CONTINUATION OF OBLIGATIONS.

Notwithstanding any cancellation or termination of this Agreement or your account, or any suspension or termination of access to or use of the Service, you will remain responsible for any obligations accrued up to the date of such action, including payment of any charges that may be due as a result of or in connection with such action(s).

4. WHO MAY USE THE SERVICE? – RESPONSIBILITY AND SUPERVISION.

4.1. AGE AND ACCOUNT SETUP.

You represent that you are at least 18 years of age and have the right and ability to enter into this Agreement. You agree that you are responsible for installing, establishing, and setting up, and for verifying and maintaining, the account, options, settings, and other parameters under which the Service is used, including (without limitation) all related passwords and user identification information. These account functions may be performed only by a person at least 18 years of age, without exception.

4.2. MULTIPLE USE OF ACCOUNT.

Multiple members of your business may share a single ID number and account, if authorized by you to use the account. In addition, multiple users at the same site may access the Service at any given time through the same ID number or account, however performance may be degraded.

4.3. INSTALLATION OF SUBSCRIBER EQUIPMENT.

You acknowledge and agree that Hughes or its designated service provider may be required to access your premises and/or computer system in order to install and maintain the components necessary for you to access the Service (the "Subscriber Equipment"). This may include opening your computer to install, repair, or replace equipment or install software on your computer at your location. By accepting this Agreement and scheduling a service or installation visit, you hereby authorize Hughes or its service provider to access your computer for the purpose of installing, repairing or replacing Subscriber Equipment for the purpose of facilitating your access to the Service. NEITHER HUGHES NOR ITS SERVICE PROVIDER SHALL HAVE ANY LIABILITY WHATSOEVER FOR ANY LOSSES RESULTING FROM INSTALLATION, REPAIR OR OTHER SERVICES, INCLUDING WITHOUT LIMITATION DAMAGE TO YOUR PREMISES OR COMPUTER, OR LOSS OF SOFTWARE, DATA OR OTHER INFORMATION FROM YOUR COMPUTER. Hughes may check the version of the HughesNet software on your computer and, without any additional notice to you, may download and install on your computer updates to the HughesNet software. In addition, Hughes may check the health and status of your computer to ensure that your configuration is optimized for use with the Service.

4.4. SUBSCRIBER RESPONSIBILITY.

You shall be responsible for all access to and use of the Service through your account or password(s) and for any fees incurred for goods or services purchased thereon, or any other expenses incurred as a result of any use of your account. You promise to pay the amounts billed for any such goods or services, along with any related fees, taxes, and charges. Use of your account is limited to users using the service at your permanent location or place of business. You acknowledge that you are aware that areas accessible on or through the Service may contain material that is unsuitable for minors (persons under 18 years of age). You agree to supervise usage of the Service by minors who use the Service through your account. You hereby ratify and confirm any obligations a minor using your account enters into or assumes and any promises or permissions such minor makes or gives. You agree to: (a) provide us with true, accurate, current, and complete information about yourself; and (b) promptly update this information to keep it true, accurate, current, and complete.

PART III – PAYMENT.

5. FEES AND PAYMENT.

5.1. FEES, TAXES AND OTHER CHARGES.

You agree to pay, in advance, and in accordance with the provisions of the billing option you selected, any registration, activation, and/or monthly fees, ISP service charges, minimum charges, and other amounts charged to or incurred by you, or by users of your account, at the rates in effect for the billing

period in which those amounts are charged or incurred. You agree to pay all applicable taxes and Universal Service assessments related to your use of the Service or the use of the Service by users of your account. Information on charges and surcharges (if any) that are to be paid to us and are incurred by you or by users of your account will be made available to you on the Website, and you agree that this is sufficient notice for all purposes as to charges incurred and paid or to be paid to us. Hughes reserves the right to increase fees, surcharges or monthly subscription fees, or to institute new fees at any time upon thirty (30) days prior notice. You understand and acknowledge that you may not receive a bill in the mail for your Service. Additional terms relating to pricing, billing, and payment are set forth and available on the Website.

5.2. PAYMENT.

Hughes accepts invoice billing for business customers. Hughes may perform a business credit check that may help determine whether Hughes will extend credit to a customer. Hughes reserves the right, at its sole discretion, to not extend credit to a customer for any reason whatsoever. In such case, Hughes may, at its option, request that any amounts owing or to be charged be paid by a credit card, or alternatively, request a personal financial guarantee from one or more of the principals of the applicable business customer.

Except where additional methods of payment are specifically required or permitted under applicable law or regulation or where Hughes explicitly and in advance permits another method of payment, you agree that you will provide a major credit or charge card (i.e., MasterCard, Visa, American Express, or Discover) that Hughes may charge for all Service fees or other amounts payable under this Agreement. Additionally, you agree that Hughes may pre-charge your monthly Service fee to the credit or charge card supplied by you during activation or subscription. You hereby authorize automatic credit or charge card billing by Hughes for all such charges. You further agree that the charges described above will be billed to the credit or charge card that you have provided when you applied for the Service. YOU MUST PROVIDE CURRENT, COMPLETE, AND ACCURATE INFORMATION FOR YOUR BILLING ACCOUNT. YOU MUST PROMPTLY UPDATE ALL INFORMATION IN ORDER TO KEEP YOUR ACCOUNT CURRENT, COMPLETE AND ACCURATE (SUCH AS A CHANGE IN BILLING ADDRESS, CREDIT CARD NUMBER, OR CREDIT CARD EXPIRATION DATE). CHANGES TO SUCH INFORMATION CAN BE MADE AT www.myHughesNet.com. IF YOU FAIL TO PROVIDE US WITH ANY OF THE FOREGOING INFORMATION, YOU AGREE THAT HUGHES MAY CONTINUE CHARGING YOU FOR ANY SERVICE PROVIDED UNDER YOUR ACCOUNT, AND THAT YOU WILL BE RESPONSIBLE FOR ANY LATE FEES ASSOCIATED WITH HUGHES' INABILITY TO OBTAIN PAYMENT BASED ON BILLING INFORMATION YOU HAVE PROVIDED. You agree that all charges are considered valid unless disputed in writing within fifteen (15) days after the date you receive your credit or charge card bill. You agree that Hughes will not be responsible for any expenses that you may incur resulting from overdrawing your bank account or exceeding your credit limit as a result of an automatic charge made under this Agreement.

In the event that you used a debit card to activate your subscription, you authorize Hughes to initiate debit entries to your checking or savings account, as the case may be, for payment of the monthly charge for the Service. Hughes, pursuant to this authorization, will debit the monthly service charge for the Service from your account each month. In addition, Hughes will deduct from your account any and all early termination charges arising from termination of your Service prior to its required minimum term. Hughes will not be responsible for any overdraft or other third-party fees or penalties resulting from Hughes' debiting from your account any amount authorized by this Agreement or any other agreement between you and Hughes. Hughes will charge a return fee for each debit that is declined by your bank. The return fee will vary from state to state and will be the maximum amount allowed in each state.

You acknowledge that the recurring debit authorized hereunder will purchase the Service and that Hughes will continue to debit monies from your account until you revoke this authorization by going online to www.myHughesNet.com to change payment method or by mailing a written request to:

HughesNet Customer Service
11717 Exploration Lane
Germantown, MD 20876

Credit card payment is not required for residents of states where payment by credit cards may not be made mandatory. Further, in the event that checks submitted by you are returned for insufficient funds, or if your account is suspended for non-payment, and you wish to restore Services, in addition to other charges which may be applicable, you may be liable for an additional administrative charge of up to \$25. If you think a charge is incorrect or you need more information, you should contact our billing department. You must contact us within sixty (60) days after receiving the statement on which the error or problem appeared. Hughes will make available to you a statement for each billing cycle showing payments, credit purchases, and other charges. Payment of the outstanding balance is due in full each month, and may be billed in advance or pre-charged as set forth above. If your payment is not received by us before the next statement is issued, you may be charged interest on the delinquent balance at the lesser of one and one-half percent (1.5%) per month or the maximum rate permitted by applicable law, prorated on a daily basis. Hughes may, but is not required to, accept partial payments from you. If partial payments are made, they will be applied to statements starting with the oldest outstanding statement. If you send us checks or money orders marked "payment in full" or otherwise labeled with restrictive endorsements, Hughes can, but is not required to, accept them, without losing any of Hughes' rights to collect all amounts owed by you under this Agreement. In the case of late payment or non-payment, you understand and agree that Hughes may report such late payment or non-payment to the appropriate credit reporting agencies. If Hughes chooses to use any collection agency or attorney to collect money that you owe us or to assert any other right which we may have against you, you agree to pay the reasonable costs of collection or other action including, but not limited to, the costs of a collection agency, reasonable attorneys' fees, and court costs, as provided by applicable law.

5.3. COMMENCEMENT AND DURATION OF SUBSCRIBERSHIP FEES.

You acknowledge that a monthly subscription fee will apply for each and every month (or portion thereof) that you subscribe to the Service. Once you subscribe, your account and payment obligations will continue until terminated as set forth herein.

PART IV – PERMITTED USE AND RESTRICTIONS ON USE.

6. SOFTWARE LICENSE.

To facilitate your use of the Service, Hughes may provide you with software and written materials including documentation (the "Software"). Subject to the terms of this Agreement, Hughes grants you a limited personal, non-exclusive, non-sublicenseable, and nontransferable license to use and display the Software on any machine(s) on which you are the primary user or which you authorize for use. Unauthorized copying of any portion of the Software, including software that has been modified or updated, or merged or included with the Software, as well as the documentation provided, is expressly forbidden. You may not sublicense, assign, or transfer this license or the Software except as expressly permitted by Hughes. Any attempt to sublicense, assign or transfer any of the rights, duties, or obligations under this license is void. You agree that you shall not, nor shall you permit others to, copy, duplicate, reverse engineer, decompile, or create derivative works from the Software, in whole or in part, including any written materials provided in conjunction with the Software. Hughes will occasionally provide automatic software and technology upgrades to improve the Service, such as virus and spam screening technologies, although these upgrades may not be consistent across all platforms and devices. You agree to accept and to take no action to interfere with such automatic upgrades, scanning, and related services.

7. SPECIFIC RESTRICTIONS ON USE OF THE SERVICE.

7.1. PROHIBITED CONDUCT.

You agree to comply with the terms of the [Hughes Acceptable Use Policy](#). Violations of the Acceptable Use Policy may result in suspension or termination of Service.

7.2. HUGHES FAIR ACCESS POLICY.

To ensure fair Internet access for all HughesNet subscribers, Hughes maintains a Fair Access Policy. This policy establishes an equitable balance in Internet access for all HughesNet subscribers. Hughes assigns a download threshold to each service plan that limits the amount of data that may be continuously downloaded. The small percentage of subscribers who exceed this limit will experience a temporary reduction of speed. Hughes' Fair Access Policy may be revised by Hughes at any time. More information about the current Fair Access Policy is available at legal.hughesnet.com.

7.3. COMPLIANCE WITH LAWS.

You agree to comply with all applicable laws, rules, and regulations in connection with the Service, your use of the Service, and this Agreement.

7.4. NO RESALE.

You agree not to reproduce, resell, transfer, trade, sublicense, or exploit for any commercial purposes your subscription to the Service, any portion thereof, or any capabilities or applications enabled by the Service (e.g., Voice over Internet Protocol service).

7.5. ASSUMPTION OF RISK.

Hughes may, but shall not have any obligation to, screen content transmitted through and stored on the Service for objectionable material and material that violates any law or regulation, the terms of this Agreement or the Acceptable Use Policy (collectively, "Objectionable Content"). Hughes may, but shall not have any obligation to, remove from the Service or refuse to store or transmit any Objectionable Content. You agree to bear all risks associated with any and all content you use, transmit, or receive on or through the Service, and agree that you will not rely on any such content.

PART V – GRANT OF IMPORTANT RIGHTS BY YOU TO US, AND IMPORTANT DISCLAIMERS, ACKNOWLEDGMENTS AND OBLIGATIONS.

8. IP ADDRESSES.

In the event you are acquiring the use of one or more private IP Addresses through your HughesNet Subscription, the following conditions will apply. Hughes may, but shall not have any obligation:

- "Static IP" addresses are primarily for the use for customers who need to access other networks through firewalls or VPNs that require an IP address from the source of the connection to remain the same over long periods of time.
- IP addresses cannot be guaranteed in perpetuity. Hughes retains the right to change the IP addresses allocated for HughesNet systems. Should it become necessary to change a static IP, Hughes will attempt to contact the customer with sufficient notice advance of the change.
- Hughes will not support any attempts to run Web pages, hosting servers, or SMTP relays behind a HughesNet terminal or any other server as described in the Hughes Acceptable Use Policy. This includes removing a static IP address from SMTP "Blacklists" or "Dynamic IP address lists," or creating custom reverse DNS entries for the IP addresses allocated to a HughesNet terminal, such that a customer domain name purchased by another vendor can be associated with a HughesNet system for the purposes of operating a Web page or SMTP service.
- Hughes will not register IP addresses granted to a HughesNet customer as separate domains or DNS/MX Record domains customized for an individual subscriber.
- All IP addresses allocated to a HughesNet system are the sole property of Hughes. Title, ownership, and registration of IP addresses granted to a HughesNet terminal will remain the property and under the administrative authority of Hughes.

9. COPYRIGHT AND LICENSES.

Hughes reserves all copyrights and other rights in and to any content available through the Service which is identified as, claimed by us as, or known by you to be, proprietary to Hughes or its licensors (collectively, "Proprietary Content"). The Proprietary Content is protected under U.S. and international copyright laws, including as a collective work. All copying, modification, distribution, publication, or other use by you, or by any user of your account, of any such content or other works is prohibited, except as expressly permitted by Hughes.

10. NO ENDORSEMENT.

Hughes does not endorse or in any way vouch for the accuracy, completeness, truthfulness, or reliability of any service, opinion, advice, communication, information, or other content on or made available through the Service. Such content does not necessarily constitute or reflect the views or approval of Hughes or any of its subsidiaries or affiliates.

11. INTERNET.

YOU ACKNOWLEDGE THAT INTERNET SITES, AND USE OF THE INTERNET, MIGHT CONSIST OF, INCLUDE AND/OR PROVIDE ACCESS TO IMAGES, SOUND, MESSAGES, TEXT, SERVICES, OR OTHER CONTENT AND MATERIAL THAT MAY BE UNSUITABLE FOR MINORS AND THAT MAY BE OBJECTIONABLE TO MANY ADULTS. YOU ACKNOWLEDGE THAT HUGHES IS NOT RESPONSIBLE FOR ANY SUCH CONTENT OR MATERIAL AND THAT ACCESS TO SUCH CONTENT AND MATERIAL THROUGH THE SERVICE IS AT YOUR SOLE RISK.

12. LIMITED WARRANTY ON EQUIPMENT.

Hughes warrants to the original buyer that under normal use and wear the equipment used to access the Service (the "Equipment"), which includes the Indoor Unit (satellite modem), Power Supply, and Outdoor Unit (Antenna & Radio Assembly), will be free from defects in material and workmanship for a standard limited warranty term of 24 months from the date of activation. Any Equipment replaced or repaired under this warranty will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. This warranty is not transferable.

If under normal use and wear, the Equipment becomes defective in materials or workmanship during the warranty period set forth above, Hughes shall at its option and expense, perform one of the following:

- We will repair or replace the defective Equipment within thirty (30) days of the date the defective Equipment was returned to Hughes' designated address at your expense, to cause it to comply with the terms of this Limited Warranty. Reconditioned replacement components, parts, units or materials may be used if the Equipment is repaired or replaced.
- If repair or replacement is not commercially practicable, we will return the original price paid by you for the defective Equipment. If service to the Outdoor Unit (satellite antenna and transmitter) is required, Hughes will, at its expense, repair or replace it pursuant to the limited warranty for the first six months after installation. From six months to the end of your limited warranty period, Hughes will cover the cost of the replacement equipment, but the cost of the onsite service technician visit, if necessary, will be paid by you. You may request a price estimate prior to the work, based on the type of the replacement. If your satellite antenna needs to be re-pointed after the first 6 months of service, a standard onsite visit fee will be charged to you. Reconditioned replacement components, parts, units, or materials may be used if the Equipment is repaired or replaced.
- We may upgrade the Equipment to a later-generation product that performs the same function and complies with the terms of this Limited Warranty.

THESE ARE YOUR SOLE AND EXCLUSIVE REMEDIES FOR DEFECTS DURING THE WARRANTY PERIOD IN ANY EQUIPMENT COVERED BY THE LIMITED WARRANTY. To request Limited Warranty service you must contact Hughes Customer Service, toll-free, at 1-866-347-3292 within the Limited Warranty period.

This Limited Warranty will be void in its entirety if the Equipment is serviced by anyone other than Hughes or a Hughes-Authorized Service Center. Hughes neither assumes nor authorizes any Authorized Service Center or any other person or entity to assume any other obligation or liability beyond that which is provided for in this Limited Warranty.

This Limited Warranty does not cover damage or affected operation of the above-referenced Equipment resulting from:

- Non-professional installation; re-pointing of the Antenna; removal, repair, or disassembly of Equipment by anyone other than a Hughes-Authorized Service Technician;
- Failure to follow instructions;
- Fire, flood, wind, lightning, earthquake, or other acts of God;
- Spills of food or liquids;
- Problems with electrical power;
- Misuse, abuse, accident, vandalism, alteration, or neglect;
- Use in combination with other external devices not manufactured or provided by Hughes.

This Limited Warranty does not cover items in the following categories:

- Software provided by any party other than Hughes;
- External devices not manufactured or provided by Hughes;
- Any payments for labor or service to representatives or service centers not authorized by Hughes.

EXCEPT AS SPECIFICALLY PROVIDED ABOVE, THE EQUIPMENT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FURTHER, HUGHES DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE, OR THE RESULTS OF THE USE, OF THE EQUIPMENT IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS, OR OTHERWISE. THE ENTIRE RISK AS TO THE RESULTS AND PERFORMANCE OF THE EQUIPMENT IS ASSUMED BY YOU.

No oral or written information or advice given by Hughes, its dealers, distributors, agents, or employees, shall create a warranty or in any way increase the scope of this warranty, and you may not rely on any such information or advice. This warranty gives you specific legal rights. You may have other rights, which vary from state to state.

All liability and obligations of Hughes under this Limited Warranty shall terminate upon expiration of the applicable warranty period provided herein. This Limited Warranty sets forth the entire responsibility of Hughes with respect to the Equipment. Hughes shall have no further liability to you or to any third party arising from the sale of the products whether based on warranty, contract, negligence or other theories of liability. HUGHES SHALL HAVE NO LIABILITY FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR PUNITIVE DAMAGES OF ANY NATURE ARISING OUT OF HUGHES' BREACH OF THIS LIMITED WARRANTY, WHETHER SUCH DAMAGES AROSE IN CONTRACT OR TORT, AND WHETHER OR NOT SUCH DAMAGES WERE FORESEEABLE. In no event shall Hughes liability exceed the amount paid by you for the Equipment.

Hughes may, at its option, elect to ship replacement equipment in advance of receiving a failed item from you. If you do not return such failed modem to the address specified by Hughes within 20 days of Hughes' shipping your replacement modem, you agree to pay, and Hughes will automatically charge your account an unreturned equipment fee equal to \$125.00 for each item of equipment not returned. This fee will be collected in addition to your monthly service charge via your standard payment method (your credit/debit card on file or via invoice).

13. DISCLAIMER OF WARRANTIES ON THE SERVICE AND EXCLUSION OF LIABILITY.

13.1. WARRANTY DISCLAIMER.

HUGHES DOES NOT OFFER ANY WARRANTY IN CONNECTION WITH THE SERVICE OR THE SUBSCRIBER EQUIPMENT. THE SERVICE IS MADE AVAILABLE ON AN "AS IS" AND "AS

AVAILABLE" BASIS WITHOUT WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF TITLE OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HUGHES EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE SERVICE WILL BE ERROR-FREE, SECURE, OR UNINTERRUPTED OR OPERATE AT ANY MINIMUM SPEED. YOU AGREE THAT YOUR USE OF THE SERVICE AND THE SUBSCRIBER EQUIPMENT, AND SUCH USE BY ANYONE USING YOUR ACCOUNT, IS AT YOUR SOLE RISK. NO ORAL ADVICE OR WRITTEN INFORMATION PROVIDED BY HUGHES, ITS EMPLOYEES, DEALERS, OR THE LIKE SHALL CREATE A WARRANTY.

13.2. LIMITATION OF LIABILITY.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, NEITHER HUGHES NOR ANY OF ITS INFORMATION OR CONTENT PROVIDERS, SERVICE PROVIDERS, LICENSORS, EMPLOYEES, OR AGENTS SHALL BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES ARISING OUT OF USE OF THE SERVICE OR INABILITY TO USE THE SERVICE WITHOUT LIMITING THE FOREGOING. IF FOR ANY REASON ANY PORTION OF THE FOREGOING LIMITATION OF LIABILITY SHALL BE VOIDED, THEN IN SUCH EVENT THE MAXIMUM, SOLE, AND EXCLUSIVE LIABILITY OF HUGHES, ITS DEALERS, DISTRIBUTORS, AGENTS, EMPLOYEES, OR THIRD-PARTY CONTENT PROVIDERS, IF ANY, SHALL BE LIMITED TO AN AMOUNT NOT TO EXCEED THE TOTAL AMOUNT ACTUALLY PAID TO HUGHES BY YOU FOR SERVICES FURNISHED UNDER THIS AGREEMENT FOR THE PERIOD OF TIME COMMENCING UPON THE OCCURRENCE OF SUCH ERROR, DEFECT, OR FAILURE AND CEASING UPON THE DISCOVERY AND RECTIFICATION OF SUCH, IN WHOLE OR IN PART; PROVIDED, HOWEVER, THAT IN NO EVENT SHALL SUCH PERIOD OF TIME EXCEED THE TWELVE- (12-) MONTH PERIOD IMMEDIATELY PRECEDING THE DATE WHICH SUCH ERROR, DEFECT, OR FAILURE IS FIRST DISCOVERED IN WHOLE OR IN PART.

Without limiting the foregoing, Hughes shall not be responsible for (a) any failure to transmit or store, or for any deletion of, any communication, message, email, or content transmitted through, sent to, or received by the Service or Hughes' servers; or (b) any modification, suspension, interruption, or discontinuance of the Service.

13.3. FULL APPLICABILITY.

THE FOREGOING EXCLUSIONS OR LIMITATIONS OF LIABILITY APPLY REGARDLESS OF ANY ALLEGATION OR FINDING THAT A REMEDY FAILED OF ITS ESSENTIAL PURPOSE, REGARDLESS OF THE FORM OF ACTION OR THEORY OF LIABILITY (INCLUDING WITHOUT LIMITATION NEGLIGENCE) AND EVEN IF HUGHES OR OTHERS ARE ADVISED OR AWARE OF THE POSSIBILITY OR LIKELIHOOD OF SUCH DAMAGES OR LIABILITY.

14. INDEMNITY.

You agree to indemnify and hold harmless Hughes against all claims, liability, damages, costs, and expenses, including but not limited to reasonable attorneys' fees, arising out of or related to this Agreement, any and all uses of your account, and your use of the Service. This includes, without limitation, responsibility for all such consequences resulting from actions by you or any user of your account in violation of this Agreement, the Acceptable Use Policy, or any law or regulation.

15. LIABILITY FOR UNAUTHORIZED USE.

You agree to notify us immediately after you sell, give away, or otherwise transfer your Equipment to anyone else. You are considered the registered recipient of the Service until Hughes receives such notice, and you will be liable for any charges or fees incurred by the use of your Equipment by anyone else up to the time that Hughes receives your notice, unless otherwise provided by State law. You may not assign or transfer your service without Hughes' written consent. If you do, Hughes may inactivate your service. If your Equipment is stolen or otherwise removed from your premises without your authorization, you must notify HughesNet Customer Care Center immediately, or else you may be liable for payment for unauthorized use of your Equipment system. You will not be liable for unauthorized use after Hughes has received your notification.

16. PROPRIETARY RIGHTS.

All copyright or other proprietary rights notices contained in or associated with the content available through the service must be preserved on any copies made of such material; provided, however, that no copies shall be made in violation of Section 7 or any other provision of this Agreement. The placement of copyrighted material in any public posting area, or any software library, without the consent of the copyright owner is prohibited. Nothing in this Agreement may be construed to convey to you any interest, title, or license in the user ID, email address, Universal Resource Locator ("URL"), IP address, or domain name used by you in conjunction with the Service.

PART VI – GENERAL.

17. LIMITS ON TRANSFERS; NO RIGHT OF SURVIVORSHIP.

Unless otherwise agreed in writing, your right to use the Service, or to designate other users of your account, is not transferable and is subject to any limits established by Hughes. Your right to use your user ID, email address, and other unique identifiers assigned to you by Hughes shall terminate upon the termination of this Agreement. This Agreement will terminate immediately upon your death.

18. CHOICE OF LAW.

This Agreement is made in the State of Maryland. This Agreement and all of the parties' respective rights and duties in connection herewith, including, without limitation, claims for violation of state consumer protection laws, unfair competition laws, and any claims in tort shall be governed by and construed in accordance with the laws of the State of Maryland, in the United States, excluding its conflicts of laws provisions.

19. DISPUTE RESOLUTION AND BINDING ARBITRATION.

19.1 GENERAL.

EXCEPT AS OTHERWISE PROVIDED HEREIN, ANY AND ALL DISPUTES, CONTROVERSIES, OR CLAIMS BETWEEN YOU AND HUGHES, BASED ON, ARISING OUT OF, INVOLVING, OR RELATING IN ANY WAY TO THIS SUBSCRIBER AGREEMENT, THE HUGHESNET SERVICE, ANY OTHER ASPECT OF OUR RELATIONSHIP, OR ANY RELATED PRODUCTS OR SERVICES, INCLUDING WITHOUT LIMITATION CLAIMS BASED ON CONSUMER PROTECTION LAWS, UNFAIR COMPETITION LAWS, OTHER STATUTES, CONTRACT, TORT, MISREPRESENTATION, FRAUD, OR ANY OTHER LEGAL THEORY, SHALL BE SETTLED BY BINDING ARBITRATION AS SET FORTH HEREIN. ANY QUESTIONS AS TO THE ENFORCEABILITY OF THIS ARBITRATION AGREEMENT OR AS TO THE ARBITRABILITY OF ANY DISPUTE SHALL BE DECIDED BY THE ARBITRATOR, EXCEPT THAT ANY QUESTIONS AS TO THE APPLICABILITY OR ENFORCEABILITY OF THE PROHIBITION ON CLASS PROCEEDINGS IN SECTION 19.3 BELOW SHALL ONLY BE DECIDED BY A COURT. THIS AGREEMENT TO ARBITRATE IS SUBJECT TO THE FEDERAL ARBITRATION ACT.

Arbitration means that any dispute will be decided by an independent arbitrator, and will not be decided in court by a judge or jury. The applicable procedures may be different from procedures followed in court. In an arbitration, there is no right to a jury trial, discovery may be limited, and the grounds for seeking appeal or judicial review of the arbitrator's award are limited.

An arbitrator must honor the terms and conditions of this Agreement to the same extent that any court would. Except as otherwise expressly provided herein, the same claims, legal theories, damages, and other relief that would be otherwise available in court, including any right you may have to recover attorney's fees and/or litigation costs, shall also be available in an arbitration commenced pursuant to this clause. This agreement to arbitrate shall survive termination of this Subscriber Agreement and will apply to any claims brought or disputes arising before or after termination of this Subscriber Agreement.

This Dispute Resolution and Binding Arbitration provision (including all subparts of this Section 19) shall, to the extent permitted by law, apply to all pending and future claims, disputes, arbitrations, and litigation, including those involving former subscribers whose agreements terminated prior to the adoption of this

provision. Any former subscriber whose agreement terminated prior to the adoption of this provision shall be entitled to proceed under the terms of this Dispute Resolution and Binding Arbitration provision with respect to any disputes, controversies, or claims within the scope of this Section 19.1.

19.2 DISPUTE RESOLUTION AND ARBITRATION PROCEDURES.

Notice of Dispute. Prior to filing any claim against the other, you and Hughes agree that you will first send the other a written Notice of Dispute. Any Notice of Dispute to Hughes should be sent to: HughesNet Customer Service, 11717 Exploration Lane, Germantown, MD 20876 (the "Notice Address"). Any Notice of Dispute to you will be sent to your billing address. The Notice should describe the nature of the problem or dispute and set forth the specific relief sought, including the amount of any monetary damages sought. If the party receiving the Notice of Dispute agrees within 30 days to provide the specific relief requested in the Notice of Dispute, no formal claim may be filed with respect to the subject of the Notice of Dispute. If we are unable to reach an agreement to resolve the dispute within 30 days after the Notice of Dispute is delivered, either you or Hughes may commence an arbitration.

Arbitration Proceedings. Any arbitration between you and Hughes shall be administered by the American Arbitration Association ("AAA") under its Commercial Arbitration Rules and Supplementary Procedures for Consumer-Related Disputes, as supplemented and modified by the terms of this Agreement. In the event of any conflict between this Dispute Resolution and Binding Arbitration clause and the applicable AAA rules, this clause shall govern. The AAA Commercial Arbitration Rules and its Supplementary Procedures for Consumer-Related Disputes may be obtained online at www.adr.org or by calling the AAA at 1-800-778-7879. The arbitrator's award shall be final and binding and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof.

If the arbitrator enters an award in your favor, you shall be entitled to an award of any reasonable attorney's fees or other reasonable costs and expenses you incur in the arbitration; provided that, if the settlement or award in your favor is equal to or less than the amount of a written settlement offer made by Hughes prior to selection of the arbitrator(s), you shall only be entitled to an award of reasonable attorney's fees or other reasonable costs and expenses you incurred up to the date of that written settlement offer. The foregoing right to an award of fees, costs, and expenses is in addition to, and does not limit, any such right you may have under the applicable law governing your claim.

Unless you and Hughes agree otherwise, any arbitration hearing will take place at a location convenient to you which is in or nearest to the county where you reside when the arbitration is commenced. If your claim is for \$10,000 or less, you may choose to have the arbitration conducted in person or by phone, or you may choose to have the arbitration decided solely on the basis of documents submitted to the arbitrator without a hearing. If your claim exceeds \$10,000, the right to a hearing will be determined by the applicable AAA Rules.

Arbitration Costs and Fees. Payment of a filing fee is required to commence an arbitration. If you commence an arbitration against Hughes pursuant to this Binding Arbitration clause, and the claim seeks \$10,000 or less, Hughes will, at your written request, pay the filing fee directly to the AAA or, if you have already paid it, promptly reimburse you for the amount of the filing fee. In addition, for any arbitration initiated in accordance with this Binding Arbitration provision which does not exceed \$10,000, Hughes will also pay all other arbitration fees and expenses imposed by the AAA, including administration and arbitrator fees. However, if the arbitrator finds your claim is frivolous or brought for an improper purpose, then Hughes may seek reimbursement of any AAA fees and expenses it has paid in your behalf. For any arbitration involving claim(s) for more than \$10,000, payment of fees and costs shall be governed by the applicable AAA rules.

19.3 PROHIBITION ON CLASS ARBITRATION.

YOU AND HUGHES AGREE THAT NO DISPUTE OR CLAIM MAY BE BROUGHT OR MAINTAINED AS PART OF A CLASS ARBITRATION OR OTHER REPRESENTATIVE ARBITRATION, REGARDLESS OF WHETHER THE APPLICABLE ARBITRATION RULES WOULD OTHERWISE PERMIT CLASS OR REPRESENTATIVE PROCEEDINGS. ACCORDINGLY, YOU AND HUGHES MAY ONLY PURSUE A CLAIM AGAINST THE OTHER IN AN INDIVIDUAL CAPACITY, AND MAY NOT PURSUE A CLAIM AGAINST THE OTHER ON BEHALF OF ANY OTHER PERSON, AND NO OTHER PERSON MAY PURSUE A CLAIM ON BEHALF OF YOU OR HUGHES AGAINST THE OTHER. AN ARBITRATOR MAY

ENTER AN AWARD ONLY IN FAVOR OF THE INDIVIDUAL PARTY SEEKING RELIEF AND ONLY TO THE EXTENT NECESSARY TO PROVIDE RELIEF WARRANTED BY THAT PARTY'S INDIVIDUAL CLAIM.

19.4 LIMITATIONS ON ARBITRATION PROVISION.

Notwithstanding Sections 19.1 and 19.2 above, but subject to Section 19.3 above, you or Hughes may bring an individual action against the other in small claims court, and arbitration shall not be required as to any dispute relating to the validity or enforcement of either party's patents, copyrights or other intellectual property.

19.5 RIGHT TO OPT OUT; FUTURE CHANGES.

IF YOU DO NOT WISH TO BE BOUND BY THIS DISPUTE RESOLUTION AND BINDING ARBITRATION CLAUSE, YOU MAY OPT OUT OF THIS CLAUSE. TO DO SO, YOU MUST NOTIFY HUGHES IN WRITING TO THE ABOVE NOTICE ADDRESS WITHIN 30 DAYS AFTER YOU FIRST RECEIVE NOTICE OF THIS CLAUSE. YOUR WRITTEN NOTICE MUST INCLUDE YOUR NAME, ADDRESS, HUGHES ACCOUNT NUMBER, AND A CLEAR STATEMENT THAT YOU DO NOT WISH TO RESOLVE DISPUTES WITH HUGHES THROUGH ARBITRATION. FAILURE TO PROVIDE SUCH NOTICE WITHIN 30 DAYS CONSTITUTES AGREEMENT TO THE TERMS OF THIS DISPUTE RESOLUTION AND BINDING ARBITRATION CLAUSE. YOUR DECISION TO OPT OUT OF THIS CLAUSE WILL HAVE NO ADVERSE EFFECT ON YOUR RELATIONSHIP WITH HUGHES OR THE DELIVERY OF SERVICES TO YOU BY HUGHES.

In addition, if Hughes makes any future change to this Dispute Resolution and Binding Arbitration provision, you may reject any such change by sending Hughes written notice within 30 days of receiving notice of the change. In that case, any dispute arising between you and Hughes will be governed by the Dispute Resolution and Binding Arbitration provision, or any equivalent provision, in effect as of the date you received notice of the change.

19.6 EXCEPTION TO SEVERABILITY.

Notwithstanding Section 22.1 below, if for any reason the prohibition on class proceedings set forth in Section 19.3 above is not enforced as written with respect to any dispute, then Section 19.1 above also will not apply to that dispute.

20. ELECTRONIC DELIVERY POLICY AND YOUR CONSENT.

By applying for or using the Service, you consent to receive all agreements, disclosures, policies, notices, and other information (collectively, "Notices") provided by Hughes or its affiliates via paper, aural, and/or electronic delivery at Hughes' sole and absolute discretion. For purposes of example and not limitation, Hughes may deliver or display Notices to you by email or pop-up window, or by posting a message on the Service or the Hughes Website. You agree that certain supplemental or enhanced services made available to subscribers may also have their own procedures for providing Notices.

21. CONSTRUCTION AND DELEGATION.

Neither the course of conduct between parties nor trade practice shall act to modify the provisions of this Agreement. Hughes may authorize or allow its contractors and other third parties to provide services necessary or related to making the Service available and to perform obligations and exercise Hughes' rights under this Agreement, and Hughes may collect payment on their behalf, if applicable. The provisions of any Sections of this Agreement, which by their nature should continue, shall survive any termination of this Agreement.

22. MISCELLANEOUS.

22.1. NOTICE; SEVERABILITY.

Where notification by Hughes is contemplated by or related to this Agreement, notice may be made by any reasonable means, including without limitation email or publication over the Service. If any term of this Agreement is found by a court of competent jurisdiction to be invalid, illegal, or unenforceable, it shall be construed in such a way as to eliminate the offending aspects while still giving as much effect as possible to the intentions of such term. Where an entire provision is invalid, illegal, or unenforceable and cannot be so repaired, then the term shall be considered to be stricken from this Agreement as if it had not been included. In any such case, the balance of this Agreement shall remain in effect in accordance with its remaining terms notwithstanding such invalid, illegal, or unenforceable term.

22.2. NO WAIVER.

Hughes may enforce or decline to enforce any or all of the terms of this Agreement in its sole discretion without waiving its rights to enforce such provisions in the future. In no event shall Hughes be required to explain, comment on, suffer liability for, or forfeit any right based on its enforcement, non-enforcement, or consistency of enforcement of these terms.

22.3. CAPTIONS.

Captions used in this document are for convenience only and shall not be considered a part of this Agreement or be used to construe its terms or meaning.

22.4. STATUTE OF LIMITATIONS.

You agree that, regardless of any statute to the contrary, any claim or cause of action arising from or related to use of the Service or this Agreement must be filed within one (1) year after such claim or cause of action arose or be forever barred.

23. ASSIGNMENT OF ACCOUNT.

Hughes may sell, assign, or transfer your account to a third party without notice to you.

24. ENTIRE AGREEMENT.

This Agreement, as published over the Service and available on the Website, as well as the additional online documents specifically referred to herein as being a part of this Agreement (e.g., the Acceptable Use Policy), constitute the entire and only agreement with respect to the subject matter hereof between you and Hughes. This Agreement supersedes all representations, proposals, inducements, assurances, promises, agreements, and other communications with respect to the subject matter hereof except as expressly set forth in this document. By applying for or using the Service, you agree to the terms and conditions of this Agreement. This Agreement can be amended only in the manner expressly provided for herein.

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