1.5.10 TeleWorking Services (TWS) [C.2.12.1]

Agencies will receive comprehensive, secure, and tried-and-tested telework solutions from a full service telecommunication and Information Technology (IT) provider that operates one of the largest enterprise telework programs, has a dedicated telework Center of Excellence (COE), and has deployed large-scale telework solutions for Government Agencies and large Fortune 100 enterprises on a global scale. Agencies receive a low-risk telework solution that goes beyond the latest technologies to effectively and efficiently use telework to enhance and advance the Agency's mission and business processes.

1.5.10.1 Technical Approach to Management and Applications Service Delivery [L.34.1.5.1]

1.5.10.1.a Approach to Service Delivery [L.34.1.5.1.a]

(a) Analyze the service requirements specified in this solicitation and describe the approaches to service delivery for each service. [L.34.1.5.1.a]

Telework enables Agency employees to perform officially assigned communication and collaboration work duties remotely from their primary office location. In addition, Agencies are eager to use telework to:

- Realize cost savings in the form of lower real estate needs and associated infrastructure and utilities.
- Improve employee morale as workers avoid long commutes and lost time.
- Improve continuity of operations (COOP) and disaster recovery (DR) capabilities.

> *"Telework also has numerous benefits that complement our transportation systems, conserve resources, and improve quality of life. It also is a powerful way of assisting those with disabilities to participate fully in the Federal workforce by the means of advanced technology."*
>
> --Kay Coles James, Director
> U.S. Office of Personnel Management (OPM)

- Provide employees with easier access and sharing of knowledge and information (e.g., traveling employees).
- Meet Federal telework mandates, such as Public Law 106-346 Section 359 that mandated all eligible Federal employees be allowed to telework by April 2005.

Following the aftermath of Hurricane Katrina, the Office of Personnel Management (OPM) issued a memorandum to push telework, carpooling, and other fuel-consumption alternatives after President Bush's admonition for nationwide energy conservation. The GSA has expanded access to 14 telework centers in the Washington, D.C. area. GSA is offering free use of the facilities to all Federal employees through the end of the year.

Figure 1.5.10.1-1 further shows the value that AT&T will provide Agencies in providing telework services to Agency teleworkers. As the figure depicts, Agencies must view telework as a required complement to their suite of enterprise networking services, such as managed application hosting, dedicated security services, virtual private network (VPN) services, and transport services.

The successful integration of telework into the existing Agency enterprise networking environment is fundamental to enabling an Agency to meet its telework expectations of providing equal access for teleworkers to the Agency's mission-critical application base. AT&T will provide Agencies with the experience and expertise needed to successfully integrate telework into the Agency's extended enterprise networking domain.

In addition, as telework technologies, standards, and vendors change, AT&T will help Agencies easily adapt to maintain a unified Agency networking construct. Agency teleworkers, Agency remote and traveling workers, and external partners play as critical a role to the Agency's mission success as do their internal counterparts. AT&T will help Agencies realize that potential.

Figure 1.5.10.1-1: Empowering Teleworkers. *Agencies receive a comprehensive, unified enterprise network that includes telework and remote access.*

AT&T's approach to telework is the main reason for our highly successful telework program that is one of the largest enterprise Teleworking Services (TWS) programs. AT&T will use this same approach to enable Government Agencies to successfully enable telework within their respective entities. AT&T's approach to delivery of TWS is based on a number of tenets that reflects AT&T's experience in providing large-scale TWS enterprise networking solutions to large Government entities and enterprises. **Table 1.5.10.1-1** summarizes AT&T's TWS approach.

SERVICE DELIVERY APPROACH	TECHNICAL DESCRIPTION
Capability Mirroring	Mirroring the capabilities each employee has working at the primary work location at the remote location or employee home. This includes providing the facilities and capabilities that enable teleworkers to conduct business as though they worked from their primary work locations. [redacted]
Security	Placing a heavy emphasis on security. This includes using technologies that enable privacy and confidentiality of data and information, as well as using technologies to help secure Agency assets under the employee's use.
Ease of Use	Making the telework experience non-cumbersome. The AT&T unified global client that normally resides on a teleworker's laptop or PC, is very easy to set up and use.
Monitoring, Maintenance, and Management	Each AT&T employee is provided with a toll-free number to easily troubleshoot problems and resolve issues.
Application Support	AT&T supports a number of applications that further facilitates communication and collaboration. These include Instant Messaging (IM), conferencing, and location-based services. AT&T has recently established a long-term strategic initiative with Microsoft to further develop and deploy next-generation communication and collaboration applications, especially those based on a converged architecture, including the services oriented architecture (SOA) and services over IP (SoIP).
Education & Training	AT&T has deployed web-based and classroom training to educate not only teleworkers on the use of the various telework technologies, but also educate AT&T managers culturally to become more accepting of telework as a general practice.

Table 1.5.10.1-1: Telework Approach. *Agencies deploy highly successful telework initiatives with the tried-and-tested AT&T telework approach.*

Another important element of the AT&T approach is solution flexibility. By offering multiple access, wireless access network (WAN), and security options, as well as support for multiple vendors, AT&T can customize a telework solution to best fit an Agency's needs. **Table 1.5.10.1-2** summarizes the range of access, WAN, security, and device options available to Agencies.

TELEWORK RELATED OPTIONS	TECHNICAL DESCRIPTION
Access	AT&T supports multiple teleworker access arrangements. These include integrated services digital network (ISDN), xDSL, cable, private line, wireless fidelity (WiFi), Ethernet, satellite, and cellular (licensed wireless).
WAN	AT&T can provide an Agency with a WAN, based on multiprotocol label switching (MPLS) VPN technology, which includes features such as quality of service (QoS) and Class of Service (CoS) to allow teleworkers to simultaneously transmit voice, data, and video over a single access circuit.
Security	AT&T supports IPSec, L2TP, point to point tunneling protocol (PPTP), and secure sockets layer (SSL) tunneling, authentication, and encryption protocols. AT&T also offers highly sophisticated and advanced dedicated security services, such as managed firewall, intrusion detection, and virus scanning services.
Device Support	[redacted]

Table 1.5.10.1-2: Solution Flexibility. *Agencies deploy highly customized telework initiatives with AT&T's flexibility in access, WAN, security, and device-types.*

As new and improved telework solutions are introduced by Industry, AT&T will continue to evaluate and work closely with the vendor community to incorporate these improvements into the AT&T telework service.

AT&T realizes an estimated $180 million in business benefits annually from increased productivity by employees and reduced real estate needs.

--Telework Coalition
February 2005

1.5.10.1.b Benefits to Technical Approach [L.34.1.5.1.b]

(b) Describe the expected benefits of the offeror's technical approach, to include how the services offered will facilitate Federal Enterprise Architecture objectives (see http://www.whitehouse.gov/omb/egov/a-1-fea.html). [L.34.1.5.1.b]

AT&T's Networx services, in general, and TWS services, in particular, support the Government's vision of transformation through the use of the Federal Enterprise Architecture (FEA) so that technologies contribute to mission performance. **Table 1.5.10.1-1** describes each service-delivery approach element in relation to FEA and summarizes its contribution and/or provides an example of how it facilitates FEA implementation. AT&T is aligning its product and service components to be easily integrated, commonly manageable, and usable. This applies across Government functions, horizontally and vertically, as well as between levels of Government.

SERVICE DELIVERY APPROACH	BENEFITS	FEA FACILITATION
Capability Mirroring	Agency teleworkers gain access to Agency data and information repositories and communicate and collaborate virtually as they would physically.	As a component of Technical Reference Manual (TRM)/service access and delivery/access channels, this service allows for increased sharing and collaboration between same Agency employees and between Agencies.
Security	Privacy and protection of Agency data and information, as well as protection of both Agency and teleworker assets, from external threats.	As a component of TRM/component framework/security, this service allows Agency e-commerce and e-business functions to remain intact in the event major threats are released onto the Internet. Significantly reduces the likelihood that a teleworker would become a conduit for harming Agency infrastructure.
Ease of Use	Teleworkers access Agency information quickly and efficiently.	As a component of TRM/service access and delivery/access channels, this service allows for Agencies to increase telework adoption and use. Agencies can realize the cost savings and sharing that telework provides.
Monitoring, Maintenance, and Management	Lesser telework related outages and lost time coupled with improved trust in teleworking reliably.	As a component of TRM/component framework/data management, data that is relevant to an Agency in terms of planning, prioritizing, or executing becomes easily available, allowing Agencies to meet their mission functions more effectively.
Application Support	Teleworkers have access to more application types helping them work more effectively and efficiently.	As a component of TRM/service platform and infrastructure/delivery servers, this service allows Agencies to increase communication, collaboration, and information sharing. Agencies also more easily share with other Agencies that use similar application types.
Education and Training	Increased telework adoption.	As a component of TRM/service platform and infrastructure/delivery servers, this service allows Agencies to successfully deploy large-scale telework initiatives helping drive cost savings and improved intra-Agency and cross-Agency communication and sharing.

Table 1.5.10.1-3: Agency Benefits and FEA Facilitation. *AT&T will help Government Agencies realize the benefits of telework and meet the guidelines and promises of FEA.*

AT&T's development of net-centric technologies supports solutions based on service oriented architecture (SOA) that uses standardized, web-adapted components. Our approach ensures that:

- Technical Reference Model capabilities are fully met and linked to the Service Component Reference Model (SRM) and Data Reference Model (DRM).
- These links are structured to support Business Reference Model (BRM) functions and provide Performance Reference Model (PRM) line-of-sight linkage to mission performance and ultimate accomplishment.
- AT&T operates as an innovative partner through Networx to help achieve the vision of the FEA to enhance mission performance.

Telework's importance within the framework of the FEA, and the benefits derived, will continue to grow during the timeframe of the Networx procurement, as Agencies accelerate telework adoption, and as telework continues to play an important role within the Agency's business and mission environments.

1.5.10.1.c Major Issue to Service Delivery [L.34.1.5.1.c]

(c) Describe the problems that could be encountered in meeting individual service requirements, and propose solutions to any foreseen problems. [L.34.1.5.1.c]

In transitioning into any new service delivery model, whether it be task-based or fully outsourced, unforeseen issues can always arise. Therefore, it is important that GSA selects a service provider, such as AT&T, which brings the depth and background that minimize an Agency's risk during transition. Our experience has allowed us to develop proven methods, processes, and procedures applicable to the simplest or the most complex projects. As with all large TWS projects, we enter each of these risks and others (after identification and characterization) into our risk-tracking database, and immediately take steps to mitigate them before they become an issue.

[redacted]

Based on extensive studies conducted by the AT&T Telework Center of Excellence (COE)[1] over a period of several years, there are two levels of risk associated with broad and successful telework adoption. The first level is strategic in nature, while the second is tactical. At the strategic level, the biggest obstacles to successful telework adoption are those of:

- **Culture** – Do managers accept subordinates working *out of sight*?

[1] *The AT&T Telework Coe provides guidance and direction on telework technologies, polices, and efficiencies.*

- **Technology** – Do technologies allow teleworkers to economically conduct business from a home or remote location?
- **Policy** – Does an Agency have clear rules that answer many teleworker concerns, such as use of personal assets when conducting business and expected *working hours*?

[redacted]

Table 1.5.10.1-4 lists the top eight tactical service delivery risks and our mitigation strategy.

RISKS	RISK DESCRIPTION	RISK MITIGATION
Business disruption	Business disruption associated with outsourcing key IT and networking functions to a managed services provider.	[redacted]
Requirements changes (Scope Creep)	Requirements changes before and after service delivery contribute to budget overruns and missed expectations.	[redacted]
Incomplete and inaccurate location information	Location information often is not accurate and site point-of-contacts (POCs) are no longer valid.	[redacted]
Schedule slippage	Many issues can contribute to schedule slippage. Examples include local access provider access-circuit provisioning delays, delays due to poor project planning, and delays due to inside wiring issues.	[redacted]
Equipment functionality problems	It is not uncommon for premises equipment not to live up to manufacturer's claims and fail to deliver functionality that customer expects.	[redacted]
Cyber-Security Threats	Security threats in the form of worms, viruses, etc. that emanate from the Internet and could cause severe damage to Agency critical resources.	[redacted]
Inability to Cope	Care must be taken to ensure that	[redacted]

RISKS	RISK DESCRIPTION	RISK MITIGATION
with Rapid Technological Changes	technological changes work to the advantage of both teleworkers and their respective Agencies. For example, a new broadband and wide reach wireless technology that has the potential to redefine telework is Wi-Max.	[redacted]
Inability to Provide Low-Cost Solutions in Remote Areas	Remote and rural teleworker sites, including Agency branch offices, might not have cost-effective broadband access available.	[redacted]

Table 1.5.10.1-4: AT&T Service Delivery Lessons Learned and Risk Mitigation Strategies. *Agencies benefit from lessons learned and experience implementing TWS, which ultimately minimize service delivery risks.*

As evidenced from **Table 1.5.10.1-4**, several program, implementation, and network risks exist that might hinder an Agency's ability to deliver high-quality and low-risk TWS to its users. Agencies can build on AT&T's capabilities as a full service network provider to mitigate these risks and give uncompromised TWS to Agency end users.

In 2004, AT&T and Intel established joint R&D efforts to design, test, and deploy access solutions based upon the new Wi-Max standard which promises to be a breakthrough access technology over the next 2-3 years. AT&T is currently conducting customer trials using Wi-Max. "We've been very enthusiastic of the results" notes Hossein Eslambolchi, Technology Chief and President of AT&T Labs.

1.5.10.2 Satisfaction of Management and Applications Performance Requirements [L.34.1.5.2]

1.5.10.2.a Service Quality and Performance [L.34.1.5.2.a]

(a) Describe the quality of the services with respect to the performance metrics specified in Section C.2 Technical Requirements for each service. [L.34.1.5.2.a]

AT&T will comply with and meet the TWS quality performance metrics specified in Section C.2.12.1.4.1 as illustrated in **Table 1.5.10.2-1.** High-quality TWS requires quick time to restore (TTR) metrics to provide maximum teleworker uptime and access to Agency mission and business enabling resources. **Table 1.5.10.2-1** depicts the TTR service performance metrics that Agencies will obtain for TWS.

KEY PERFORMANCE INDICATOR (KPI)	SERVICE LEVEL	PERFORMANCE STANDARD (THRESHOLD)	PROPOSED SERVICE QUALITY LEVEL
Time to Restore Service	Without Dispatch	4 hr Maximum	[redacted]
	With Dispatch	8 hr Maximum	[redacted]

Table 1.5.10.2-1: Time to Restore Telework Services. *Agency teleworkers receive maximum uptime through AT&T TTR metrics.*

In general, telework services pose a challenge to TTR metrics. This is due to:

- Teleworkers can be located at remote or rural areas with long travel times.
- Teleworkers operate from homes, and gaining access to a residence is normally more difficult than gaining access to a business location.
- Providing enhanced reliability and availability through access and equipment redundancy is not an economically feasible option to a large home-based telework population.

In addition to quick TTR, high quality TWS requires deployment over a robust and high-performance infrastructure network. As IP becomes the network infrastructure of choice, high-quality TWS will require deployment over a high-quality IP network. Agencies will be able to deploy quality TWS solutions because AT&T strives to lead the industry in the quality of the IP network, as all AT&T service types converge onto a common IP/MPLS backbone network.

An IP network is traditionally characterized by its availability, data delivery ratio, delay, and jitter. The AT&T IP/MPLS network leads the industry in the KPIs it supports, as depicted in **Table 1.5.10.2-2**.

DEDICATED INTERNET ACCESS KPIS		
Latency (ms)		
• Within Region U.S.		
• Within Region AP		
• Between Regions AP-EMEA		
Data Delivery		
• Within Region U.S.		
• Within Region Europe		
• Between Regions U.S. to Others		
Service Availability (End-to-end)		
Provisioning (Days)—Dedicated access		
Time to Repair		
Jitter		

Table 1.5.10.2-2: Competition.

One of the most important metrics that reflects the quality of the IP network is delay. A lower delay means that the network is operating without congestion and with ample capacity and bandwidth, both of which have a direct impact on the data delivery ratio, another important quality indicator. **Figure 1.5.10.2-1** depicts actual published IP packet delay, measured by leading IP providers.

Figure 1.5.10.2-1: IP Network Latency Comparison. A *lower and consistent latency translates to improved end-to-end quality for Agency applications and is the basis for successfully converging Agency applications onto a common IP infrastructure. Source: respective company websites.*

This scale allows AT&T to

> *AT&T is really raising the bar with these SLAs. This is a comprehensive and aggressive move to challenge the industry's traditional methods of measuring performance in a way that is meaningful to customers and meeting their business objectives. It will be harder for competitors to be vague about their SLA commitments when AT&T's are out there in bold print.*
>
> --Kate Gerwig
> Current Analysis

quickly adapt to traffic surges and network outages that would otherwise severely impair a smaller ISP network [redacted]

1.5.10.2.b Approach to Monitoring and Measuring Performance [L.34.1.5.2.b]

(b) Describe the approach for monitoring and measuring the Key Performance Indicators (KPIs) and Acceptable Quality Levels (AQLs) that will ensure the services delivered are meeting the performance requirements. [L.34.1.5.2.b]

Of equal importance to identifying the KPIs for a service is the method by which the KPIs are captured, measured, and monitored. [redacted]

For availability, data delivery, and delay measurements of the IP backbone network, and unlike other service providers who might use ping and trace route

tests to show performance, AT&T has deployed a separate performance measurement infrastructure to collect network performance information[2].

AT&T's measurement methodology more closely captures the real performance that TWS users experience. [redacted]

To simplify the verification process, AT&T has automated the process. The common testing platform provides an integrated system to perform service verification testing and present the results either on the AT&T **Business**Direct® web portal or by written report. The service verification process is presented in greater detail in Section 1.3.2.d, Approach to Perform Service Delivery Verification.

1.5.10.2.c Approach to Perform Service Delivery Verification [L.34.1.5.2.c]

(c) Describe the offeror's approach to perform verification of individual services delivered under the contract, in particular the testing procedures to verify acceptable performance and Key Performance Indicator (KPI)/Acceptable Quality Level (AQL) compliance. [L.34.1.5.2.c]

The first time the service is provided through the Networx contract, the performance must be verified. Service KPIs are monitored to certify that the

[2] *Ping and trace routes do not yield the most accurate results for network performance. Pings use ICMP and UDP packets that are generally given lowest priority by routers for handling, thus yielding inaccurate results. Trace route uses ICMP messages and is also de-prioritized by the routers in the path.*

service performance complies with the AQL. **Table 1.5.10.2-3** summarizes the verification and testing procedures for the TWS time to restore KPI.

KEY PERFORMANCE INDICATOR	VERIFICATION APPROACH
Time to Restore (TTR)	[redacted]

Table 1.5.10.2-3: Service Delivery Verification. [redacted]

The AT&T dedicated project management team will be responsible for all TWS test and turn-up related activities, including, but not limited to, the following duties:[3]

- Manage the overall provisioning and installation process.
- Conduct customer test and turn-up.
- Close out all outstanding provisioning activities.

During the installation process, the project management team will coordinate and work with Agency personnel to properly install devices and measure to assess whether performance parameters are within target levels. For telework services at an employee's home, AT&T will provide training materials and telephone support to any employee who might require it. [redacted]

Post installation, AT&T manages all telework devices on a 24x7 basis, and will proactively call customers if they fall within this category (normally multi-user sites). [redacted]

[redacted]

[redacted]

1.5.10.2.d Performance Level Improvements [L.34.1.5.2.d]

(d) If the offeror proposes to exceed the Acceptable Quality Levels (AQLs) in the Key Performance Indicators (KPIs) required by the RFP, describe the performance improvements. [L.34.1.5.2.d]

Achieving the AQLs defined by the Government for the KPIs will result in superior TWS performance. [redacted]

1.5.10.2.e Approach and Benefits for Additional Performance Metrics [L.34.1.5.2.e]

(e) Describe the benefits of, and measurement approach for any additional performance metrics proposed. [L.34.1.5.2.e]

As stated earlier, AT&T constantly drives toward improving the end user experience. AT&T measures and reports a number of key performance metrics that directly impact the end user's experience with the service. **Table 1.5.10.2-4** lists the additional performance metrics that would greatly enhance telework services to end users.

PROPOSED KPI	DESCRIPTION & MEASUREMENT APPROACH	BENEFITS
Proactive monitoring	[redacted]	Higher service levels in the form of decreased outage times and improved end-to-end performance.
Availability	[redacted]	Telework services are available when employees require them.
Latency	[redacted]	Improved application performance.

PROPOSED KPI	DESCRIPTION & MEASUREMENT APPROACH	BENEFITS
Packet delivery	[redacted]	Improved data delivery and higher service levels.

Note: These performance metrics apply only to multi-user telework sites (two or more concurrent users at a worksite).

Table 1.5.10.2-4: Service Enhancements. *Agency end users receive higher reliability and performance levels for telework associated services.*

Improving the overall teleworker experience will contribute to greater telework adoption and reliance. Additionally, multimedia type applications with real-time traffic streams will become a significant component within the Agency enterprise application space through the lifetime of the Networx procurement. [redacted]

1.5.10.3 Satisfaction of Management and Applications Service Specifications [L.34.1.5.3]

1.5.10.3.a Service Requirements Description [L.34.1.5.3.a]

(a) Provide a technical description of how the service requirements (e.g., capabilities, features, interfaces) are satisfied. [L.34.1.5.3.a]

Figure 1.5.10.1-1 depicted how Agency teleworkers, mobile and traveling workers, and remote and branch offices interconnect with Agency headquarters, offices, data centers, and partners. **Table 1.5.10.3-1** presents how the telework service requirements will be satisfied through the AT&T telework service portfolio, as well as the associated benefits to Agencies.

TWS SERVICE REQUIREMENTS	DESCRIPTION	BENEFIT TO AGENCY
Connectivity between teleworkers and Agency voice and data applications.	AT&T supports traditional voice and VoIP. For data applications, VPN devices will be used to establish secure tunnels between teleworker locations and Agency applications: • VPN appliance for Agency remote branch offices and teleworker homes • PC client for Agency traveling workers	• Teleworkers gain equal access to Agency applications allowing for virtually seamless communication and collaboration. • Traveling workers gain secure access into Agency applications.
Support for two tiers of telework services.	AT&T will support: • Tier 1 (Basic): AT&T designs and deploys the telework solution, while Agency manages the service, • Tier 2 (Enhanced): AT&T will design, deploy, and	• For Tier 1, Agencies retain control over teleworkers day-to-day operations, while leveraging AT&T expertise in designing and deploying complete telework solutions.

TWS SERVICE REQUIREMENTS	DESCRIPTION	BENEFIT TO AGENCY
	manage the entire telework solution.	• For Tier 2, Agencies relieved from day-to-day operations, allowing for more resources to be dedicated to mission needs.
Providing secure connectivity and authentication and encryption capabilities.	AT&T will support secure connectivity and encryption via establishing secure tunnels between teleworker devices and Agency locations. • Encryption: DES, 3DES, AES, or FIPS 140-2. • Tunneling protocols: IPSec, GRE over IPSec, VRF aware IPSec, PPTP, L2TP, and SSL. • Authentication: RADIUS, SecureID, SafeWord, Defender, Lightweight Directory Access Protocol (LDAP), and Public Key Infrastructure (PKI).	• Selecting from a suite of security approaches that best meets Agency's networking needs. • SSL allows "client-less" secure access, reducing costs and allowing more flexible access. • VRF-aware IPSec allows multiple Agencies to share common private infrastructure.
Providing activity logs/audit trails, management utilities, Class of Service (CoS), multiple protocols, multiple domains and dynamic/static addressing	Telework portal allows teleworkers: [redacted] Logs of teleworker activity - [redacted]	• Ease of management • Support for quick and timely transition to large-scale telework deployment • Design and consultative services to Agencies through AT&T professional services • Multimedia traffic transport over converged infrastructure, reducing costs and enabling enhanced performance and functionality
Support for multiple end-user device types	AT&T telework services support traditional phone and fax devices in addition to VoIP devices. Personal computers and laptops will be supported as well. In addition, AT&T is testing [redacted] *devices* to be used by teleworkers as well.	• Maximum telework adoption by Agency workers • Efficient use of newer technologies
Instructions and training	Agency teleworkers can be provided with a number of training methods to include: classroom, written materials, and web-based training.	Quick telework adoption
Traversing firewalls and encryption transparency	AT&T telework services are designed to pass through end user data (data before being tunneled by VPN device).	Enabling Agency teleworkers access to Agency secure and critical applications
Support for logical isolation	[redacted]	• Higher service levels in the form of less outage due to device configuration errors. • More network management automation and intelligence allows for quicker problem discovery and resolution.
Compatibility with Agency applications	Teleworker applications such as Netscape Messenger, MS Outlook, and Netmeeting, and other provider groupware applications will pass through the AT&T telework services uninterrupted.	• Higher productivity levels • Increased communication and collaboration between Agency employees • Increased communication and collaboration between Agencies
Voice features (voice, voicemail, and follow me)	Teleworker voice features include local, long distance, international, 911, caller ID, and call waiting/call forwarding. Special features include follow me, call logs, click-to-dial, do not disturb, speed dialing, voicemail, and conferencing.	• Support for voice services for teleworkers • Increased functionality and productivity especially with follow me and conferencing features
Security features (anti-virus management,	Security features include: • Anti-virus [redacted]	• Enhanced security and protection of Agency and teleworker resources • Increased resiliency in the form of less

TWS SERVICE REQUIREMENTS	DESCRIPTION	BENEFIT TO AGENCY
intrusion detection and prevention, managed firewall, teleworker firewall, and vulnerability scanning)	• Intrusion detection and prevention ([redacted]) • Managed firewall [redacted] teleworker firewall [redacted] • Vulnerability scanning [redacted] • Network integrated security through the backbone IP/MPLS network.	outage due to Internet based threats • Firsthand visibility into the Internet to quickly react to Internet-based threats (Internet Protect)
Administrative features, such as managed moves, adds, and changes support.	Software-based adds and changes are performed centrally from the AT&T telework monitor and control center. Hardware-based moves and changes are either performed by the teleworker for simple tasks (if the teleworker initially performed the task) or by AT&T onsite support.	• Rapidly accommodating teleworker changing needs • Rapid response to software errors (bugs)
Interfaces	AT&T telework services support connectivity through voice, IP, private line, combined, and VPN services.	Increased telework adoption and ability to choose access effectively and cost efficiently
Full suite of AT&T complementary managed services	• Dedicated security services • VoIP/IP Telephony/ SoIP services • Hosting/Storage/Content Delivery services • VPN services	Integrated enterprise networking solution from one full service vendor
AQLs	• Performance SLAs: packet delay, data delivery (packet loss), service availability • On-time installation SLAs	• Service assurance • Convergence

Table 1.5.10.3-1: Service Requirements. *TWS requirements are satisfied with a comprehensive and technically superior AT&T TWS service.*

As Figure 1.5.10.1-1 depicted, the most important element of the AT&T telework service is the fact that AT&T will provide Agencies with a unified enterprise networking construct that is inclusive of Agency teleworkers and remote employees. This element is fundamental to the Agency's ability to successfully transform into a network-centric enterprise.

1.5.10.3.b Attributes and Values of Service Enhancements [L.34.1.5.3.b]

(b) If the offeror proposes to exceed the specified service requirements (e.g., capabilities, features, interfaces), describe the attributes and value of the proposed service enhancements. [L.34.1.5.3.b]

The Networx RFP service requirements are comprehensive. AT&T does not propose any additional improvements.

1.5.10.3.c Service Delivery Network Modifications [L.34.1.5.3.c]

(c) Describe any modifications required to the network for delivery of the services. Assess the risk implications of these modifications. [L.34.1.5.3.c]

Agencies receive a low-risk solution by being able to use AT&T's TWS on Day One of the contract because there are no modifications required to the AT&T network or systems to provide TWS to the Government.

1.5.10.3.d Management and Applications Services Experience [L.34.1.5.3.d]

(d) Describe the offeror's experience (including major subcontractors) with delivering the mandatory Management and Applications Services described in Section C.2 Technical Requirements. [L.34.1.5.3.d]

The AT&T Networx team has a long and proven history of providing telework and telework related services. AT&T itself operates one of the largest telework programs among large U.S. corporations. For example, as of the end of 2004, about 90 percent of AT&T management employees teleworked, including 30 percent who work full-time from locations other than an AT&T facility. AT&T has had a formally adopted telework policy in place since 1991.

AT&T has been named to the Telework Coalition's Hall of Fame for its enduring support and practice of enabling employees to work remotely from company locations.

--MarketWatch Online
Feb. 2005

This experience has given us the ability to engineer and deliver TWS. Three examples of AT&T's ability to deliver managed services are listed in **Table 1.5.10.3-2.**

[redacted]

Client Need	Solution	Created Value
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

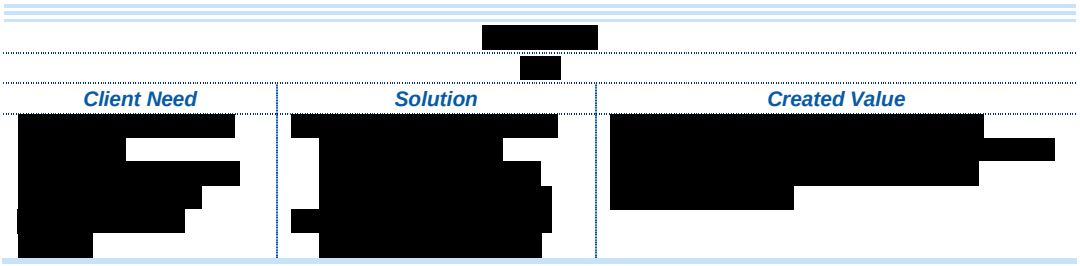

Table 1.5.10.3-2: Experience Delivering TWS. *Success is measured by the ability to deliver solutions to Agencies that create value to their business.*

As the three previous examples indicate, AT&T's major strength in providing telework services to Agencies is the ability to design and deploy a large-scale telework solution customized to meet each Agency's unique requirements for teleworkers, remote workers, and Agency external partners and constituents.

1.5.10.3.e Approach to Network Infrastructure Management [L.34.1.5.3.e]

(e) For Managed Network Services (MNS), describe the approach, process, and considerations for managing a network infrastructure (e.g., FRS, ATMS, IPS, IP-VPNs, CPE) supporting approximately 2000 users, at 25 locations across the Unites States. Based on the offeror's experience with similar projects, provide a discussion of how the offeror would investigate the requirements, design the solution, implement the plan, and deliver service that meets the Agency's performance requirements. [L.34.1.5.3.e]

Requirement verification, solution design, plan implementation, and service delivery for Managed Network Services is provided in Section 1.5.6, Managed Network Services.

1.5.10.4 Narrative Requirements

1.5.10.4.1 Seamless Communications [C.2.12.1.1.3]

For TWS, the contractor shall provide seamless communications from a teleworker location to an Agency.

AT&T telework services use various transport services to provide Agency teleworkers with seamless communication with Agency resources. AT&T supports transport in the form of switched voice services (analog dial and ISDN users), xDSL and cable over IP (broadband users), private line (including support for frame relay and ATM), wireless and Ethernet (for mobile and traveling users), and satellite (for very remote users). Secure VPN technologies can be set up using any of these transport mechanisms. AT&T

telework services support voice, data, and desktop video traffic types and will provide for packet priority mechanisms so that teleworkers receive high quality application performance for voice and other real-time applications.

Figure 1.5.10.1-1 depicts how AT&T provides telework and remote connectivity services to Agency teleworkers and remote offices. Telework services are, therefore, an integral part to a comprehensive enterprise networking solution that is based on an IP/MPLS infrastructure. By allowing teleworkers equal access to Agency critical resources and applications, the Agency becomes much more integrated and collaborative Agency. This capability becomes a key factor in today's security-heightened environment and rising real estate costs, enabling Agencies to deploy large telework populations to counter these two challenges.

1.5.10.4.2 Data and Voice [C.2.12.1.1.4 (1)]

1.TWS shall provide connectivity to enable data and optional voice services for a remote teleworker location (or center) to communicate with Agency specified host sites and applications.

AT&T telework services will support two types of voice applications: traditional voice and VoIP. For data applications, hardware or software VPN devices will be used to establish secure tunnels between teleworker locations and Agency applications.

1.5.10.4.3 Tier-1 [C.2.12.1.1.4 (2) (a)]

2. a. Tier 1 - Basic: The contractor shall provide the basic connectivity and related components necessary to establish telework capabilities for the subscriber.

AT&T will support a Tier 1 telework service in which AT&T will design and provide the Agency with basic connectivity and related components to enable telework services. AT&T will also install, configure, and provision telework services. Operational management beyond initial commissioning will be the Agency's responsibility. To ensure a smooth transition to the Agency's management domain, the dedicated AT&T project management team will work closely with Agency operational personnel to verify:

[redacted]

As a leading provider of large-scale enterprise networking solutions, AT&T provides the support needed to assume management responsibilities for a large telework deployment.

1.5.10.4.4 Tier-2 [C.2.12.1.1.4 (2) (b)]

2. Tier 2 - Enhanced :
b The contractor shall design and implement a custom service for the subscribing Agency.

AT&T will support a Tier 2 telework service, including the design, deployment, and management of a custom solution for the Agency. AT&T will work with the Agency to meet all Agency telework requirements, including telework services that minimize cost and maximize functionality.

1.5.10.4.5 Secure Connectivity [C.2.12.1.1.4 (3)]

3. The contractor's TWS shall be secure and provide authentication and encryption capabilities to identify and authenticate subscribers who are authorized access to TWS before providing such access.

AT&T will support secure connectivity and encryption by establishing secure tunnels between teleworker devices and Agency locations. [redacted] As a leading vendor for managed security services for Government and private enterprises, AT&T will work with the Agency to address all

Agency security needs within a comprehensive services architecture that includes:

[redacted]

1.5.10.4.6 Activity Logs And Audit Trails [C.2.12.1.1.4 (4) (a)]

4.a. The contractor shall provide activity log / audit trails.

A key component of the AT&T telework service is a portal that teleworkers access to control and view features and options, usage, as well as other administrative and management data. Agency teleworkers will be able to view call records (**Figure 1.5.10.4-1**), selected features, and administrative settings. Agencies will also have access to activity logs of teleworker activity and authentication information to monitor who requested access into the Agency network and when.

Figure 1.5.10.4-1: Teleworker Call Logs. [redacted]

1.5.10.4.7 Management Utilities [C.2.12.1.1.4 (4) (b)]

4.b.The contractor shall provide management utilities.

Through the AT&T **Business**Direct portal, Agency teleworkers gain access to specific management utilities that include the following online functions:

- Trouble reporting
- Viewing and paying bills
- Network performance monitoring.

Figure 1.5.10.4-2 displays a screenshot from the AT&T **Business**Direct portal website.

Figure 1.5.10.4-2: AT&T Business Direct **portal.** *Agencies can access AT&T **Business**Direct to administer key network parameters.*

1.5.10.4.8 Class Of Service [C.2.12.1.1.4 (4) (c)]

4.c.The contractor shall provide class of service capabilities

The backbone AT&T IP MPLS network provides support for CoS and QoS so that different traffic types can traverse the backbone network, while maintaining proper integrity and quality. In addition, the CPE devices deployed will also support CoS and QoS markings for the various traffic

classes. As such, AT&T will provide Agencies with an end-to-end solution that supports the transport of real-time and non-real-time traffic simultaneously.

1.5.10.4.9 Multiple Protocols Transmission [C.2.12.1.1.4 (4) (d)]

4.d.The contractor shall support transmission of multiple protocols.

For TCP/IP-based protocols, telework services will support transparent transmission. For non-TCP/IP protocols, AT&T will handle support through tunneling over IP.

1.5.10.4.10 Endpoint Devices [C.2.12.1.1.4 (5)]

5. The contractor shall provide the capability to deliver.

AT&T telework services support the following endpoint devices:

- Traditional analog phone
- Fax
- VoIP (IP phones)
- ISDN
- Personal computers and laptops.
- Agency PBX's or ACD's

[redacted]

1.5.10.4.11 Training [C.2.12.1.1.4 (6)]

6. The contractor shall provide instructions and TWS-specific training for the teleworker on how to establish and maintain TWS connections

Agency teleworkers can be provided with a number of training methods, including classroom, written materials, and web-based training. AT&T has significant experience in rolling out large-scale self-installation services, such as the AT&T broadband VoIP service, which can easily and quickly be installed by users.

1.5.10.4.12 Application Compatibility [C.2.12.1.1.4 (10)]

10. The contractor's TWS shall be compatible with Agency teleworker applications and client software including but not limited to Netscape Messenger, MS Outlook/Exchange, IBM Lotus Notes, Novell Group Wise, or MS NetMeeting.

Teleworker applications such as Netscape Messenger, MS Outlook, Netmeeting, and other provider groupware applications will pass through the AT&T telework services uninterrupted from the teleworker laptop or PC to the

Agency's application source (or to the demarcation point between AT&T and the Agency). AT&T teleworkers use scores of enterprise resource planning, supply chain management, and customer relationship management applications, in addition to the standard suite of Microsoft applications, for teleworking.

1.5.10.4.13 MACD Support [C.2.12.1.2.1 (6)(6)]

6. Managed Moves, Adds, and Changes Support
6. The contractor shall provide management support and act as a single point of contact for Agency Moves, Adds, and Changes with respect to TWS service.

Software-based adds and changes are performed centrally [redacted] Hardware-based moves and changes are performed by one of two methods: [redacted]

1.5.10.4.14 Video Conferencing [C.2.12.1.2.1 (8)(8)]

8. Video Conferencing [Optional]
8. The contractor shall enable TWS subscribers to use point to point and multipoint desktop video conference capability.

The AT&T telework service will support third-party desktop video conferencing. AT&T can also work with an Agency to design and deploy a custom video conferencing solution for specific sites and specific capabilities. AT&T has worked with leading videoconferencing vendors, such as Tandberg, PolyCom, and Marconi to supply secure and robust video conferencing for Government Agencies.

1.5.10.4.15 Voice Services [C.2.12.1.3 (1)]

Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable:
1. C.2.2.1.3 Voice Services

AT&T will support all of the mandatory Teleworking Service UNIs for voice service as described in Section C.2.12.1.3.1 (1) of the Networx Universal RFP. Examples include:

- Remote teleworkers with access to a dial PSTN line only
- Teleworkers with ISDN access capability
- Traveling employees with dial PSTN access capabilities.

1.5.10.4.16 Internet Services [C.2.12.1.3 (2)]

Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable:
2. C.2.4.1.3 Internet Protocol Services

AT&T will support all of the mandatory Teleworking Service UNIs for Internet Protocol Service as described in Section C.2.12.1.3.1 (2) of the Networx Universal RFP. Internet protocol services (IPS) will constitute the dominant network service transport type for an Agency's telework population. Teleworkers with access to the Internet by a number of access technologies come under this category. AT&T will establish secure connectivity between the teleworker and Agency resources through tunneling, encryption, and authentication. Fixed users will use xDSL, cable, and satellite access; traveling users can use Ethernet, WiFi, and [redacted]

1.5.10.4.17 Private Line Services [C.2.12.1.3 (3)]

Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable:
3. C.2.5.1.3 Private Line Services

AT&T will support all of the mandatory Teleworking Service UNIs for Private Line Service as described in Section C.2.12.1.3.1 (3) of the Networx Universal RFP. For Agency remote branch offices and select Agency users, AT&T can offer telework services through the implementation of dedicated private line services (PLS) such as T1, Fractional T1, or NxT1. [redacted] it offers the following [redacted]

[redacted]

1.5.10.4.18 Combined Services [C.2.12.1.3 (4)]

Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable:
4. C.2.6.1.3 Combined Services

AT&T will support all of the mandatory Teleworking Service UNIs for Combined Service as described in Section C.2.12.1.3.1 (3) of the Networx Universal RFP. Combined services can be used to enable telework services through traditional services such as [redacted]

1.5.10.4.19 VPN Services [C.2.12.1.3 (5)]

Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable:
2. C.2.4.1.3 Virtual Private Network Services

AT&T will support all of the mandatory Teleworking Service UNIs for Virtual Private Service as described in Section C.2.12.1.3.1 (5) of the Networx Universal RFP. These include premise-based, network-based, and layer 2 VPN services. AT&T also supports VPN services for mobile and remote employees. [redacted]

1.5.10.5 Stipulated Deviations

AT&T takes neither deviation nor exception to the stipulated requirements.

1.5.11 <Reserved>