

1.0 TECHNICAL VOLUME [L.34.1]

The FTS Networx Program will provide Agencies with a contract vehicle to receive comprehensive, best-value telecommunications and networking services. Networx will allow Agencies to continue services provided under FTS2001 and offer a migration path to more cost-effective and feature-rich services through converged and emerging technologies.

The offeror shall prepare its Technical Volume to address all mandatory technical requirements specified in this RFP and reflected in the cross reference tables in the Networx Hosting Center. Figure C.2-1 identifies services that are mandatory to offer and services that are optional to offer in the Universal solicitation. If optional services are offered, all of the mandatory technical requirements pertaining to the specific optional services shall apply. The RFP requirements that apply exclusively to optional services are appropriately indicated in the cross reference table in the Networx Hosting Center.

The Technical Volume of the proposal shall conform to the following outline:

- | | |
|--------------------------------------|--|
| (a) Executive Summary | (e) Management and Applications Services |
| (b) Compliance with RFP Requirements | (f) Security Services |
| (c) Network Architecture | (g) Wireless, Special, and Access Services |
| (d) Transport/IP/Optical Services | (h) Service-Enabling Devices |

No prices or other cost information shall be included in any of these sections.

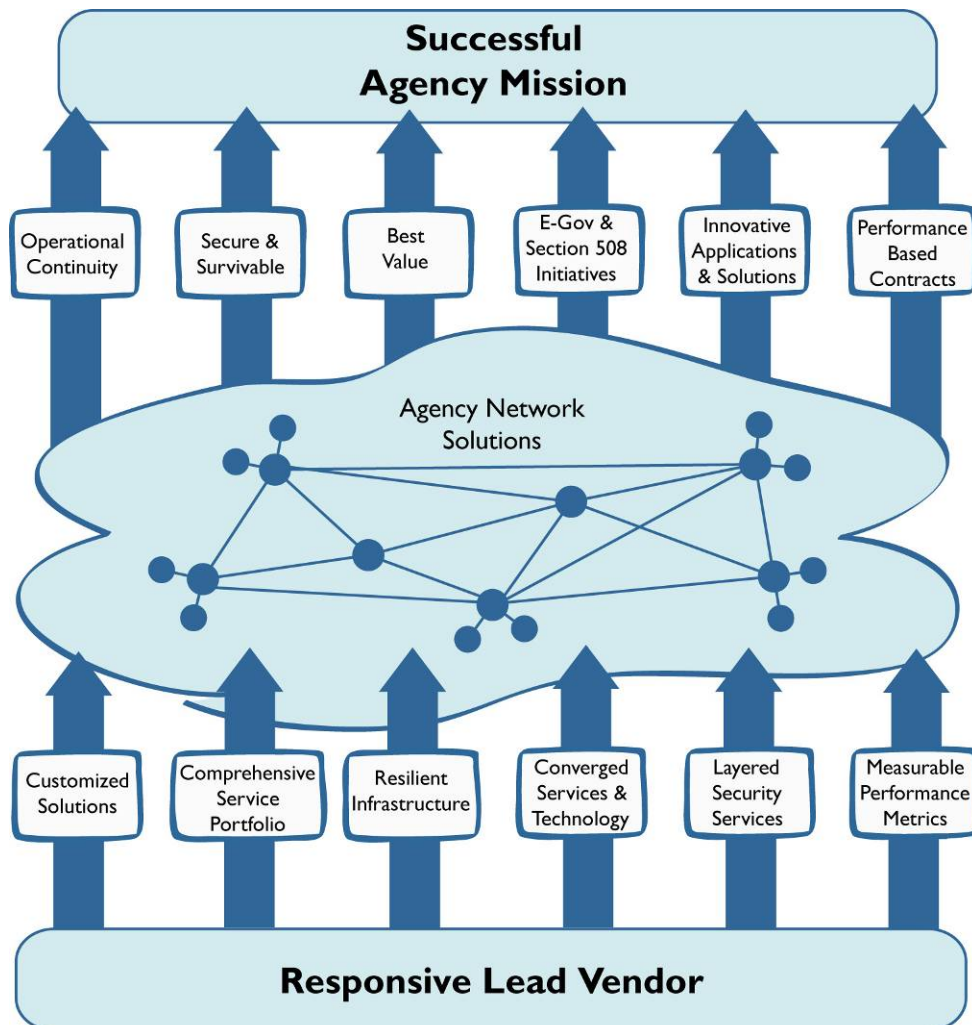
Proposal responses for (d) Transport/IP/Optical Services, (e) Management and Applications Services, (f) Security Services, and (g) Wireless and Special Services shall include all mandatory services identified in RFP Figure C.2-1. Optional services may also be offered. Optional services are identified in RFP Figure C.2-1. [L.34.1]

GSA and the Interagency Management Council (IMC) have challenged AT&T and all potential vendors to meet the following technical goals for the FTS Networx Program:

- Full Service Vendor
- High Quality Provider
- Service Continuity
- Performance Based Contracting.

Full Service Vendor

Each Agency has unique communications and networking needs that support its specific mission. The continuing investment in Information Technology (IT) makes the communications network an integral component of the Agency's infrastructure. An Agency must be able to select specific services from a robust service portfolio and integrate those services into an Agency-specific network solution. As a full service vendor, AT&T has the comprehensive portfolio services that meet the unique needs of each and every Agency, as shown in **Figure 1.0-1**.



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Figure 1.0-1: Responsive Lead Vendor. Agencies will continuously optimize their communications solution, while obtaining best value and operational continuity by leveraging the AT&T Team as a full-service, high-quality, lead vendor.

When Agencies are ready to migrate to converged services or deploy leading edge technologies, they will require a comprehensive portfolio of converged IP services and skilled personnel to assist them. A full-service vendor with a comprehensive portfolio and experienced personnel is a powerful asset for guiding Agencies to converged services and leading edge technology.

Through the Networx contract, Agencies will reduce their total cost of operation, migrate to a converged Internet protocol (IP) solution, and succeed

in implementing e-Gov initiatives and Section 508 compliance when they select the AT&T team as their full-service vendor.

High Quality Provider

An Agency must remain productive during both normal and emergency conditions, as shown in **Figure 1.0-2**. A reliable, scalable, and secure network solution that is free of interruption provides the high-quality service demanded by the Agency.



Figure 1.0-2: Quality Service Provider. The highest level of Agency productivity is obtained through a reliable telecommunications solution that is resilient to network failures, provides proactive security protections, addresses Agency's needs during national emergencies, verifies performance through measurable and enforceable key performance indicators (KPIs), and scales to support Agency growth without jeopardizing quality or security.

High-quality service is achieved through our reliable, scalable network. Our fiber facility and network equipment design incorporates redundancy to eliminate single points-of-failure and to verify continuity of operation (COOP) during all network conditions. By closely monitoring network capacity and

adjusting network resources accordingly, we support surges in service demand, without impacting service quality.

Agency services are secured through our comprehensive security strategy. Our multilayer security architecture eliminates or reduces potential damage due to a security breach. Network attacks are proactively prevented by integrating security—from design to implementation—into the architecture of every service. Real-time response to security threats is achieved through our comprehensive security management systems that monitor the network continuously. Finally, rigorous verification testing of network security tools allows our services to remain secure and reliable.

Agencies receive consistent high-quality service through our continuous monitoring of service-specific performance indicators. Immediate detection of and instantaneous response to degraded service quality is accomplished with AT&T's intelligent performance/fault monitoring systems (Concept of One/Concept of Zero). Network technicians are notified immediately of degraded service by an automated trouble ticket reporting system. The identification and resolution of recurring service quality issues are realized through automated and manual analysis of historical performance data. Through our automated and intelligent performance monitoring systems, Agencies will receive the high-quality service necessary to support their missions.

Agencies will attain high-productivity levels, eliminate or reduce service interruptions, mitigate security threats, and operate effectively during unanticipated emergency situations when using the high-quality service provided by the AT&T Team.

Service Continuity

Each Agency has a unique vision of its future communications system under the Networx contract. Some will choose to maintain FTS2001 services, while

others will choose to migrate to converged services. In support of both choices, AT&T offers the following benefits:

- Continuation of services provided under FTS2001
- Comprehensive portfolio of converged services with new capabilities
- Clear transition path that preserves service quality by minimizing transition risk.

By providing complete service continuity, Agencies can smoothly transition FTS2001 services to a Networx provider. Agencies that are ready to migrate to converged services will gain access to an advanced network that offers the largest as well as most complete geographic reach of any provider.

Service quality is improved, transition risk is minimized, and service coverage is expanded through our comprehensive offering of service continuity, as shown in **Figure 1.0-3**.

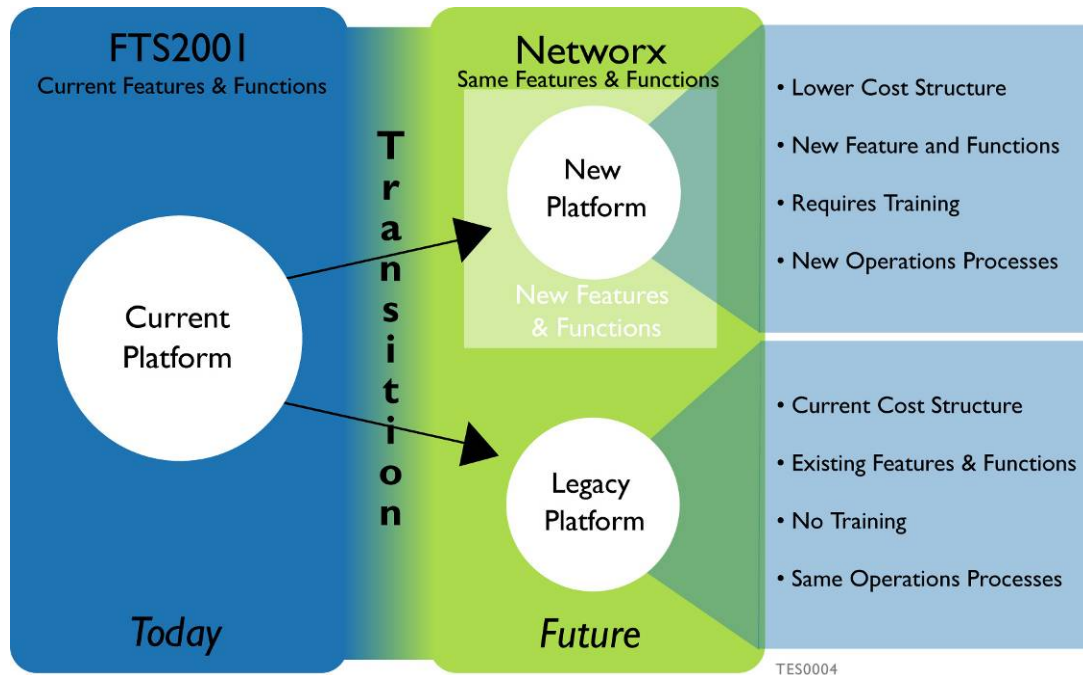


Figure 1.0-3: Flexibility to Transition. A clear transition path incorporating FTS2001 services, minimal risk, and expanded service coverage allows Agencies—without jeopardizing service quality—to transition to either an equivalent solution with identical services or to a converged solution with comparable services bundled with new capabilities.

Performance Based Contracting

Government Agencies are increasingly using performance based contracts (PBCs), as shown in **Figure 1.0-4**.

As Agencies continue to define the objectives and the

performance measurements to be used to evaluate the vendor's performance, AT&T will aid Agencies in this effort through our industry leadership in setting the highest standard for Service Level Agreements (SLAs) and key performance indicators (KPIs).

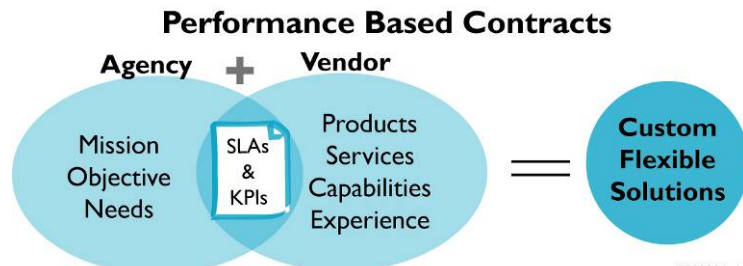


Figure 1.0-4: Moving to Performance-Based Contracts. Performance-based contracts offer Agencies greater flexibility to manage vendors, while reducing administrative costs. Performance-based contracts encourage vendors to be more responsive to Agency needs through innovative services and solutions.

This effort will allow Agencies greater flexibility in managing vendors, while reducing the administrative costs associated with contract management. Vendors will have greater opportunities to be responsive to Agencies and more quickly introduce innovative services and technical solutions.

The technology presented in this volume will meet or exceed the SLA and KPI levels requested by GSA and offer commercial best practices to achieve these results. Agencies can continuously optimize/customize their network infrastructure, obtain the highest level of productivity during both normal and emergency working conditions, lower total cost of ownership, address e-Gov initiatives, and encourage innovative solutions by embracing AT&T as a single responsive lead vendor who can fully address the Agencies' needs.

A clear transition path to Networkx's comprehensive portfolio of existing and new services enables an Agency to leverage our service convergence, emerging technologies, and integrated custom network solutions. Agencies can easily and confidently transition to Networkx because of our reliable and resilient telecommunications infrastructure that continuously lowers the total cost of operations.

Technical Volume Organization

The Technical Volume organization is presented in **Table 1.0-1** and presents the mandatory and optional services that AT&T has elected to offer as part of the FTS Networkx Program.

PROPOSED NETWORKX SERVICE	
1.0 Networkx Technical Volume	
1.1 Executive Summary	
1.2 Compliance with RFP Requirements	Table J.9.1 Proposal Conformance to Instructions Table J.9.1.1.1 Technical Volume Conformance to Instructions Table J.9.1.1.2 (a) Technical Stipulated Requirements for Mandatory Services Table J.9.1.1.2 (b) Technical Stipulated Requirements for Optional Services Table J.9.1.1.3 (a) Technical Narrative Requirements for Mandatory Services Table J.9.1.1.3 (b) Technical Narrative Requirements for Optional Services Table J.9.2.1 Content Corrections to J.9 Conformance Tables Table J.9.2.2 Content Corrections to J.9 Technical and Price Compliance Tables

PROPOSED NETWORX SERVICE	
	Table J.9.3.1 Omission Additions to J.9 Conformance Tables Table J.9.3.2 Omission Additions to J.9 Technical and Price Compliance Tables
1.3 Networx Architecture	1.3.1 Approach to Ensure Infrastructure Security 1.3.2 Approach to Ensure Service Quality and Reliability 1.3.3 Approach to Networx Architecture, Convergence, Interoperability, and Evolution 1.3.4 Non-Domestic Services 1.3.5 National Policy-Based Requirements 1.3.6 Common Architecture Components
1.4 Transport/IP/Optical Services	1.4.1 Voice Services (VS) [C.2.2.1] 1.4.2 Circuit Switched Data Services (CSDS) [C.2.2.2] 1.4.3 Toll Free Services (TFS) [C.2.2.3] 1.4.4 Frame Relay Service (FRS) [C.2.3.1] 1.4.5 Asynchronous Transfer Mode Service (ATMS) [C.2.3.2] 1.4.6 Internet Protocol Service (IPS) [C.2.4.1] 1.4.7 Content Delivery Network Services (CDNS) [C.2.4.6] 1.4.8 Private Line Service (PLS) [C.2.5.1] 1.4.9 Synchronous Optical Network Services (SONETS) [C.2.5.2] 1.4.10 Optical Wavelength Services (OWS) [C.2.5.4] 1.4.11 Combined Services (CS) [C.2.6.1] 1.4.12 Premise-based IP VPN Services (PBIP-VPNS) [C.2.7.2] 1.4.13 Network Based IP VPN Services (NBIP-VPNS) [C.2.7.3] 1.4.14 Voice Over Internet Protocol Transport Services (VOIPTS) [C.2.7.8] 1.4.15 Internet Protocol Telephony Service (IPTeS) [C.2.7.10] 1.4.16 Converged IP Services (CIPS) [C.2.7.11] 1.4.17 Layer 2 Virtual Private Network Services (L2VPNS) [C.2.7.12] 1.4.18 Dark Fiber Services (DFS) (Optional) [C.2.5.3] 1.4.19 Optical Wavelength Services (OWS) over Automatic Switched Transport Network (ASTN) (Optional) [C.2.5.4.2] 1.4.20 Ethernet (EthS) (Optional) [C.2.7.1] 1.4.21 Reserved
1.5 Management and Applications Services	1.5.1 Dedicated Hosting Service (DHS) [C.2.4.2] 1.5.2 Collocated Hosting Service (CHS) [C.2.4.3] 1.5.3 Video Teleconferencing Services (VTS) [C.2.8.1] 1.5.4 Audio Conferencing Service (ACS) [C.2.8.2] 1.5.5 Web Conferencing Service (WCS) [C.2.8.3] 1.5.6 Managed Network Services (MNS) [C.2.9.1] 1.5.7 Call Center/Customer Contact Center Services (CCS) [C.2.11.2] 1.5.8 Custom Specific Design and Engineering Services (CSDS) [C.2.11.9] 1.5.9 Storage Services (SS) [C.2.11.10] 1.5.10 Teleworking Services (TWS) [C.2.12.1] 1.5.11 Reserved 1.5.12 Unified Messaging Service (UMS) (Optional) [C.2.11.11] 1.5.13 Collaboration Support Service (CoSS) (Optional) [C.2.11.12]
1.6 Security Services	1.6.1 Managed Tiered Security Services (MTSS) [C.2.7.4] 1.6.2 Managed Firewall Service (MFS) [C.2.10.1] 1.6.3 Intrusion Detection and Prevention Service (IDPS) [C.2.10.2] 1.6.4 Vulnerability Scanning Service (VSS) [C.2.10.3] 1.6.5 Anti-Virus Management Service (AVMS) [C.2.10.4] 1.6.6 Incident Response Service (INRS) [C.2.10.5] 1.6.7 Managed E-Authentication Service (MEAS) [C.2.10.6] 1.6.8 Secure Managed Email Service (SMEMS) [C.2.10.8]
1.7 Wireless and Special Services	1.7.1 Cellular/Personal Communications Service (CPCS) [C.2.14.1] 1.7.2 Multimode/Wireless LAN Service (MWLANS) [C.2.14.3] 1.7.3 Reserved 1.7.4 Reserved 1.7.5 Land Mobile Radio Service (LMRS) [C.2.14.6] 1.7.6 Mobile Satellite Service (MSS) (Optional) [C.2.15.1] 1.7.7 Fixed Satellite Service (FSS) (Optional) [C.2.15.2]

PROPOSED NETWORX SERVICE

1.8 Service-Enabling Devices

Appendices

- A – NS/EP Functional Requirements Implementation Plan
- B – Service Specific Terms and Conditions
- C – VPATS
- D – Bilateral and Other Carrier Agreements
- E – Dark Fiber Collocation Facilities
- F – IEEE Communication Docs
- G – DHS Reports
- H – Verification Test Plan
- I – Aggregate-based Service Metrics
- J – AT&T View of Emulated Frame Relay and ATM Service

Table 1.0-1: Technical Volume Organization. *Technical Volume organization conforms to RFP requirements and contains no pricing or other cost information, nor any references to other Network Volume responses.*

Each service section addresses the mandatory and optional technical requirements in accordance with RFP, Section L instructions. In addition, AT&T's view of emulated Frame Relay and ATM Service is located in Technical Volume, Appendix J.