## 1.5.8 Customer Specific Design and Engineering Services (CSDES) [C.2.11.9]

*Agencies will access skilled and experienced professionals, proven methodologies, and toolsets to assist in the design, evaluation, simulation, validation, and testing of network solutions for their unique business requirements and objectives.*

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

The AT&T Networx Team includes world-class system integrators, engineers and program managers with a wealth of experience in overall systems engineering and integration of complex custom information technology (IT) solutions. The Team is experienced in developing solutions that support the requirements and goals established within the Agency's Federal Enterprise Architecture (FEA). We will work with each Agency to provide the appropriate expertise to plan and design your engineering solution.

### 1.5.8.1.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]

The approach taken in delivering Agency specific design and engineering support draws on the Team's systems engineering and design experience. As part of the delivery process, the AT&T Team follows our standard process for delivery of engineering services that was developed using best practices, sophisticated tools, and rigorous methodologies that are applied from the initial receipt of a customer statement of work (SOW) to customer acceptance and final delivery. **Figure 1.5.8.1-1** illustrates our service delivery approach planning, requirements determination, concept development, and design phases of our delivery model.

**Figure 1.5.8.1-1 – Service Delivery CSDES Planning and Design.** *Agencies, on a customized basis, will be able to work with the AT&T Team to plan, design, and engineer any aspect of their IT solution.*

AT&T understands that a "one-size-fits-all" approach for CSDES does not provide an understanding of the uniqueness of each Federal Agency and its custom engineering needs. This is the reason that we offer our five-phased approach to our customers. **Table 1.5.8.1-1** summarizes our five-phase approach, which employs traditional systems engineering processes tailored to customer-specific requirements.

*Unlike our competitors AT&T views CSDES as a full service offering. Our five phase CSDES approach provides Agencies with "piece of mind" that their custom requirements are being considered and addressed rather than a "one size fits all" canned approach.*

| SERVICE DELIVERY APPROACH | DESCRIPTION |
|---|---|
| Phase 1: Requirements | |
| Phase 2: Concept Development | |
| Phase 3: Design | |
| Phase 4: Implementation and integration | |
| Phase 5: Life-cycle operations | |

**Table 1.5.8.1-1: Service Approach.** *Agencies will benefit from quality engineered products developed from proven systems engineering processes.*

The AT&T Networx Team successfully delivers CSDES through coordinated technical reviews. Reviews are a means by which solutions, documents, requirements, or other elements are verified, validated, and documented. In most cases, technical reviews will include key stakeholders, management personnel, and subject matter experts. They are typically held at identified system architecture design milestones.

### 1.5.8.1.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 CSDES, in particular, support the Government's vision of transformation through the use of the Federal Enterprise Architecture (FEA) by providing the technologies that contribute to the Agency's mission objectives. **Table 1.5.8.1-2** describes each service in relation to FEA, summarizes its contribution, and/or provides an example of how it facilitates FEA implementation.

| SERVICE DELIVERY APPROACH | BENEFIT | FEA FACILITATION |
|---|---|---|
| Phase 1: Requirements | • Identifies impacts of IT initiatives<br>• Focus on customer results<br>• Focus on functional and not just organizational<br>• Link internal business components to the achievement of business outputs | Will facilitate successful delivery of the elements within the Technical Reference Model for service access and delivery, platform and infrastructure, interface and integration, and component framework. |
| Phase 2: Concept Development | • Opportunity to unify and reuse standardized technology<br>• Leverage government wide knowledge base to promote reuse of solutions | |
| Phase 3: Design | • Focus on accessibility<br>• Unify design and technology standards for all governmental Agencies | |
| Phase 4: Implementation & Integration | • Begins to build on the value chain – providing real data on the input to output relationships – to be fed into knowledge bases and supporting the concepts of technology and solution reuse<br>• Builds on business and mission measurements by yielding results based on the requirements, specifications and design phases | |
| Phase 5: Life Cycle Operations | • Supports opportunities for supporting customer driven results and process improvement<br>• Reusable solution – which was designed with FEA objectives in mind | |

**Table 1.5.8.1-2: AT&T Networx Team Systems Engineering Approach.** *Quality engineered products are a result of proven systems engineering processes.*

AT&T's development of net-centric technologies supports solutions based on service-oriented architecture (SOA), which uses standardized, web-adapted components. Our approach incorporates the criteria listed below are followed:

• 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 line-of-sight linkage to mission performance and ultimate accomplishment per the Performance Reference Model (PRM)
- AT&T operates as an innovative partner through Networx to help achieve the vision of the FEA to enhance mission performance.

In addition to the benefits and FEA facilitations cited earlier, AT&T can assist specific departments and Agencies to meet mission and business objectives through a comprehensive CSDES offering.

### 1.5.8.1.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]

The AT&T Networx Team utilizes its breadth of experience to successfully deliver CSDES and deliverables. Our team is aware of the risks that could potentially impact service delivery. We manage risk, however, starting with incorporation of risk mitigation planning and strategies to effectively navigate project risks. **Table 1.5.8.1-3** provides examples of risk areas, and potential mitigation strategies.

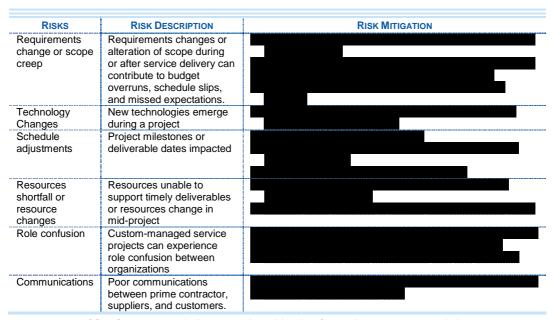| RISKS | RISK DESCRIPTION | RISK MITIGATION |
|---|---|---|
| Requirements change or scope creep | Requirements changes or alteration of scope during or after service delivery can contribute to budget overruns, schedule slips, and missed expectations. | |
| Technology Changes | New technologies emerge during a project | |
| Schedule adjustments | Project milestones or deliverable dates impacted | |
| Resources shortfall or resource changes | Resources unable to support timely deliverables or resources change in mid-project | |
| Role confusion | Custom-managed service projects can experience role confusion between organizations | |
| Communications | Poor communications between prime contractor, suppliers, and customers. | |

**Table 1.5.8.1-3: CSDES Examples of Risks and Risk Mitigation Strategies.** *Agencies benefit from the AT&T Team's risk mitigation strategy for delivering CSDES that will provide quality work products on time.*

As part of all projects, the AT&T Team project management office (PMO) will develop comprehensive risk management plans that will be submitted and approved as a deliverable for the project. These risk mitigation plans will contain practical approaches to identify, categorize, and manage risks. The PMO will hold periodic risk review boards, with a team consisting of AT&T, GSA, and the customer Agency, to review the mitigation plans for the identified risks. ███████████████████████████████████████████████ ████████████████████████████████ The AT&T Networx Team is committed to service excellence and will work with Agencies to identify and support solutions for any potential problem that may occur during delivery of CSDES activities.

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

### 1.5.8.2.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]
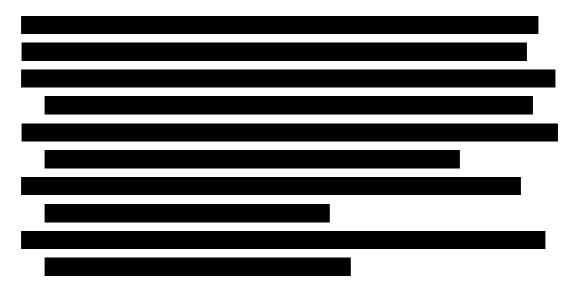
Although specific AQLs and KPIs are not required for CSDES, the AT&T Networx Team delivers quality CSDES through our internal processes and procedures, which continuously undergo quality management and process improvement. **Table 1.5.8.2-1** illustrates our service quality review methodology.

| PROCESS OR PROCEDURE | BENEFIT |
|---|---|
| ██████████████ | ████████████████████████████████████ |
| | ████████████████████████████████ |
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| | ████████████████████ |

**Table 1.5.8.2-1: CSDES Quality and Performance.** *Agencies receive proven quality standards, methods, and procedures that we use with our business and Government customers.*

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This approach provides a documented process of quality checks against initial project requirements and expectations.

## 1.5.8.2.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]
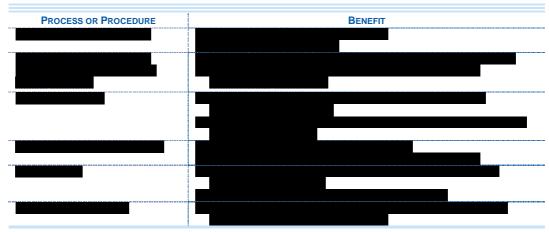
| PROCESS OR PROCEDURE | BENEFIT |
|---|---|
| ████████████████ | ███████████████ |
| ██████████████████████ | ████████████████████████████████ |
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**Table 1.5.8.2-2: Monitoring and Measuring Performance.** *Agencies will receive a methodology for measuring performance that involves active participation from the Government and that increases customer satisfaction.*

The AT&T Networx Team will work with the customer to define specific KPIs and AQLs for all CSDES activities. Once the indicators and levels have been

identified, our engineers and Contractor Program Organization (CPO) will utilize the necessary tools, processes, and procedures to monitor and track performance. Highlights are included in **Table 1.5.8.2-2**.

## 1.5.8.2.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]

In order to enter the Operations and Sustainable Pilot of the AT&T Engineering design approach strategy, the CSDES activity must successfully undergo service verification and validation testing with respect to KPI or AQL specifications.

To match service performance (as detailed by the Key Performance Indicators – KPIs) and quality levels (as detailed by the Acceptable Quality Levels - AQLs) the service will be tested and validated with respect to all performance requirements. Highlights are included in **Table 1.5.8.2-3**.
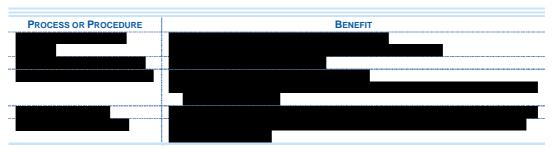
| PROCESS OR PROCEDURE | BENEFIT |
|---|---|
|  |  |

**Table 1.5.8.2-3: Service Delivery Verification.** *Agencies will receive a methodology for verifying performance that involves active participation from the Government and will increase customer satisfaction.*

## 1.5.8.2.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]

The AT&T Networx Team will define, measure, and validate KPIs and AQLs for CSDES Services that meet or exceed customer expectations to include performance and functional capability. Additionally, through process and

procedure utilized during a project/program, the team will endeavor to exceed both performance and quality.

### 1.5.8.2.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]

The AT&T Networx Team will utilize our established service delivery approach and its documented phases, reviews, and milestones for all CSDES activities. The AT&T Networx team will work directly with the customer identify and satisfy all necessary requirements. ███████████████ ████████████████████████████████████████████

████████████████████████████████████████████ ████████████████████████████████████████████ ████████████████████████████████████████████ ████████████████████████████████████████████ ████████████████████████████████████████████ ███████████████████████████ This approach will further enhance our ability to exceed customer expectations and enable us to better design services through added capabilities that can help improve efficiencies and performance.

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

The AT&T Networx Team will provide technical support services via CSDES to meet all requirements and specifications as outlined in the customer's SOW or SOO. Our team will work with the customer identify CSDES requirements and specifications and track the CSDES activity through to

successful service delivery and customer acceptance, which includes verification and validation testing of requirements and specifications.

## 1.5.8.3.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]

AT&T will satisfy all the CSDES requirements detailed through the technical capabilities of AT&T and our team partners. The first phase of the AT&T Networx Team's system engineering approach involves requirements identification. In response to a customer SOW or SOO, our team will provide a proposal that will discuss in detail the tasks, deliverables, staffing, and schedule for delivering that requested services. The **Table 1.5.8.3-1** provides some detail on the processes and steps undertaken to identify and satisfy customer requirements.

| SERVICE REQUIREMENTS | DESCRIPTION | BENEFITS TO AGENCY |
|---|---|---|
| Planning | The following are activities that may be offered: | |
| Requirement Definition | The following are activities that may be offered: | |
| Concept Development | The following are activities that may be offered: | |
| Modeling and Simulation | The following are activities that may be offered: | |
| Design and Specification | The following are activities that may be offered: | |

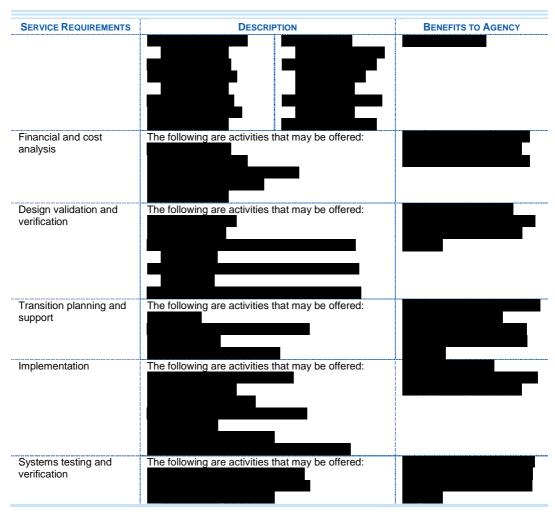| SERVICE REQUIREMENTS | DESCRIPTION | BENEFITS TO AGENCY |
|---|---|---|
| | ███████ ██████ | ████ |
| Financial and cost analysis | The following are activities that may be offered: ████████ | ██████ |
| Design validation and verification | The following are activities that may be offered: ████████ | ██████ |
| Transition planning and support | The following are activities that may be offered: ████████ | ████████ |
| Implementation | The following are activities that may be offered: ████████ | ████████ |
| Systems testing and verification | The following are activities that may be offered: ████████ | ██████ |

**Table 1.5.8.3-1: CSDES Service Description.** *Agencies will receive a suite of capabilities that will meet virtually all of their IT needs from a single provider.*

Additionally, we provide a detailed list of any necessary tools or applications that are required to support the CSDES activity. Depending on the customer SOW or SOO, requirements could include any of the following: functional requirements, system requirements, interface requirements, hardware requirements, or software requirements. Testing, validation, customer interaction, and ongoing management provide a means to assess whether requirements have been met and performance is maintained.
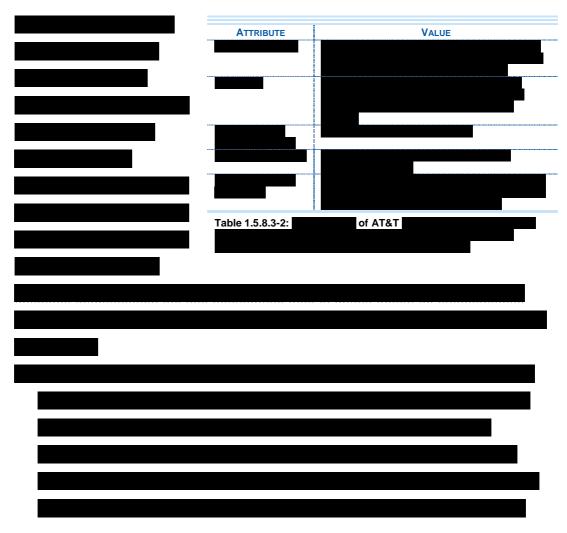
## 1.5.8.3.b    Attributes and Values of Service Enhancements [L.34.1.5.3.b]

(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 AT&T Networx Team provides customers with a team experienced in a wide range of technical areas and disciplines. Whenever needed, the full breadth and depth of the entire AT&T Networx Team can be tapped to support CSDES activities on a task order basis. **Table 1.5.8.3-2** summarizes some of the attributes AT&T's Networx team brings, and their value.

| ATTRIBUTE | VALUE |
|---|---|
| ██████ | ████████████████ |
| ██████ | ████████████ |
| ██████ | ███████████ |
| █████ | ██████████████ |

**Table 1.5.8.3-2:** ████████ of AT&T ████████████████████

*Use or disclosure of data contained on this sheet
is subject to the restriction on the title page of this proposal*    **AT&T Proprietary**    **Page 975 of 1474**
December 13, 2006

[REDACTED]

## 1.5.8.3.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 through AT&T's ability to offer CSDES upon contract award.

## 1.5.8.3.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]

AT&T Networx Team offers Agencies extensive experience providing CSDES that create value to our customers to both in Government and commercial

entities. This experience has given us the ability to engineer and deliver services. Two examples of AT&T Team's ability to deliver CSDES are listed in **Table 1.5.8.3-3**.
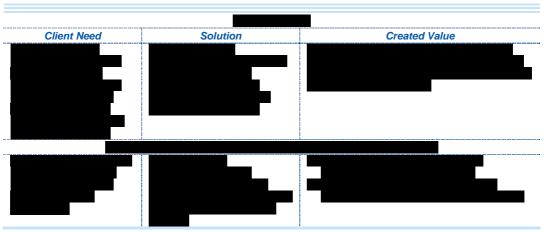
| Client Need | Solution | Created Value |
|---|---|---|
| ███████████ ███████████ ███████████ ███████████ ███████████ | █████████████ █████████████ ██████ | █████████████████████████ █████████████ ███████ |
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**Table 1.5.8.3-3: Experience Delivering CSDES.** *AT&T measures success by our ability to deliver solutions to our customers that create value to their business.*

These programs are just two examples of AT&T's Networx Team ability to deliver custom CSDES in support of the mandatory Management and Applications Services.

## 1.5.8.4     Narrative Text Requirements

### 1.5.8.4.1     Requirements Development [C.2.11.9.1.4 (1) (a)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
a. Requirements gathering, definition, and analysis

The AT&T Networx Team utilizes a traditional systems engineering approach (see **Figure 1.5.8.1-1** above) for its service delivery approach, which is marked by five well-defined phases, reviews, and milestones. The first phase of our system engineering approach involves requirements, and the AT&T Networx Team will work directly with the customer for identification, establishment, and documentation of customer requirements. During this initial phase of our engineering process, reviews of the customer's requirements (e.g. functional,

system, and interface, as applicable) will verify the completeness and accuracy of requirements. Requirements gathering is facilitated through interviews, Agency specific consulting, site visits and surveys, review of applicable documentation, including requirements documentation, and reviews.

The requirements development phase defines the end results in terms of the delivered result. The definition of requirements is not a simple pen to paper exercise, but rather an iterative process taking into account the functional requirements, technical requirements, and operational requirements. The process includes the following steps:

- Gather initial requirements as stated in a SOW or SOO
- Detailed categorization of requirements
- Flow charting and cause and effect diagramming to assess current state and/or determine networks or operational structures
- Benchmarking of current or 'like' initiatives to provide requirements, at a minimum, improvements and enhancements as necessary
- Analysis of requirements to include:
  - Risks to meeting requirements
  - Assessment of resources required to fulfill requirements
  - Tools required to develop to requirements
  - Current technology which may fulfill requirements or could be further developed
  - Timing and deliverables (to be ultimately incorporated into project plans).

The AT&T Networx team follows a rigorous process to gather written requirements, and further define them through process flow, cause and effect analysis, and benchmarking. The AT&T Networx team dedicates itself to fully

understanding, documenting and thoroughly analyzing requirements and assessing them as part of a CSDES project.

### 1.5.8.4.2 Specifications Development [C.2.11.9.1.4 (1) (b)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
b. Development of specifications

The specification phase is the second phase identified in our system engineering process (**Table 1.5.8.1-2**). The AT&T Networx Team develops a detailed system specification for the CSDES activity, which details the service's overall functionality, technical specifications, and fulfillment of the project requirements. Typically, hardware, software, network, and system interface specification reviews are performed during the specification phase to finalize the overall CSDES specification.

The development of the specifications will draw directly from the documented customer requirements defined during the requirements phases of our systems engineering process (hence the critical importance the AT&T Networx team places on the Requirements phase). The AT&T Networx Team will utilize database repositories, applications, and other tools for document interchange and retention of our all CSDES solutions to enable access to prior CSDES solutions and past performances.

### 1.5.8.4.3 Alternative Technical Approaches [C.2.11.9.1.4 (1) (c)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
c. Development and evaluation of alternative technical approaches

The AT&T Networx Team will review and analyze alternative technical approaches to incorporate a superior solution for the customer. ▮▮

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[REDACTED]

### 1.5.8.4.4    Modeling and Simulation [C.2.11.9.1.4 (1) (d)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
d. Computer aided design, modeling and/or simulation

The AT&T Networx Team will utilize all modeling tools and resources available in support of CSDES architectural system design. [REDACTED]

[REDACTED]

AT&T's Networx Team has experience with multiple modeling tools for testing the simulation, design, functionality, and operational efficiency of solutions prior to implementation. Examples include [REDACTED] **Figure 1.5.8.4-1** shows the direct output of [REDACTED]

**Figure 1.5.8.4-1:** [REDACTED] **Network Environment.** [REDACTED]

### 1.5.8.4.5      Network Design Recommendations [C.2.11.9.1.4 (1) (e)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
e. Network design recommendations

The AT&T Networx Team will develop network design recommendations based on:

- Final requirements

- Defined specifications

- Analysis of current state and developing technologies

- Results of our assessment of alternative approaches.

Our proven engineering processes and utilization of industry best practices will instill quality, efficiency, and accuracy in our CSDES solutions. All CSDES network design solutions will be reviewed with the customer, and related to the full set of requirements, KPIs and AQLs.

### 1.5.8.4.6      Cost and Performance Tradeoffs [C.2.11.9.1.4 (1) (f)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
f. Identification of cost and performance tradeoffs

The AT&T Networx Team will utilize modeling and simulation tools as a means to identify and verify total cost of ownership (TCO) for our CSDES solutions. The TCO analysis provides the customer with a solution that has the best overall value measured against performance.

[REDACTED]

### 1.5.8.4.7    Feasibility and Capacity Analysis [C.2.11.9.1.4 (1) (g)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
g. Feasibility and capacity analysis.

The AT&T Networx Team will work directly with the customer to analyze the feasibility of initiatives and establish capacity planning and analysis processes as required. [REDACTED]

[REDACTED]

[REDACTED]

The AT&T Networx Team has experience in the engineering and design of solutions to meet a specific set of requirements, including designing solutions to meet specific network capacities, number of users, or the overall size of the network environment and future expansions. [REDACTED]

[REDACTED]

## 1.5.8.4.8    Planning [C.2.11.9.1.4 (1) (h)]

1. The contractor shall provide network architecture design services. This shall include but is not limited to technical support to assist Agencies with network architecture planning and design, solutions development, and the identification and evaluation of network solutions and technologies to meet Agency business concepts and requirements. Tasks associated with this activity can include:
h. Preliminary planning

In response to customer SOW or SOO, the AT&T Networx Team will deliver customer design documentation (CDD) that provides the overall project management and transition plan, including a list of tools and applications required to support the CSDES activity. Preliminary planning starts with our initial contact with the customer to identify and establish requirements. Preliminary planning also involves:

[REDACTED]

[REDACTED]

### 1.5.8.4.9  Network Systems Design Validation [C.2.11.9.1.4 (2)]

2. The contractor shall provide network and related systems design validation. The contractor shall review and validate the design of existing or proposed networks, related services, and systems identified by the subscribing Agency.

The AT&T Networx Team validates CSDES designs through formal requirements and architectural design reviews. A formal architectural design review is held during the design phase (**Table 1.5.8.1-2**), [REDACTED]

[REDACTED]

**1.5.8.4.10    Reserved**

## 1.5.8.4.11    Network Assessment [C.2.11.9.1.4 (2) (a)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
a. Assessment of network strengths, weaknesses, and vulnerabilities

The AT&T Networx Team will perform comprehensive verification and validation

testing and audits prior to delivery of CSDES to the customer.

Our team's engineering expertise, combined with our ability to deliver end-to-end CSDES solutions, provides customer confidence of a successfully delivered service.

### 1.5.8.4.12    Capacity and Traffic Pattern Analysis [C.2.11.9.1.4 (2) (b)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
b. Capacity and traffic pattern analysis on current and projected traffic loads

The AT&T Networx Team will utilize network monitoring and analysis tools, along with modeling and simulation tools, to design customer CSDES solutions that meet current capacity and traffic loads and are scalable to allow for future growth requirements.

### 1.5.8.4.13    Network Performance Assessment [C.2.11.9.1.4 (2) (c)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
c. Measurement and assessment of network performance and availability

The AT&T Networx Team will utilize network management and monitoring tools for tracking network performance and availability.

[REDACTED] As needed, performance improvement plans will be developed and implemented.

## 1.5.8.4.14    Network Optimization [C.2.11.9.1.4 (2) (d)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
d. Recommendations for network optimization, simplification, or cost reduction.

In addition to the Network Performance Assessments described in Section 1.5.8.4.13, the AT&T Networx Team will perform architecture and design trade studies to develop the optimum solution. [REDACTED]

### 1.5.8.4.15    Critical Applications Network Impact [C.2.11.9.1.4 (2) (e)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
e. Identification of critical applications, protocols and vital data impacting the network

The AT&T Networx Team will work directly with the customer to define and identify specific critical applications, protocols, and vital data that can impact the network. ███████████████████████████████████████

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███████    It is paramount to the overall success of the project that a customer's critical components/data be integrated into our design decision process.

### 1.5.8.4.16    Network Topology Mapping [C.2.11.9.1.4 (2) (f)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
f. Network discovery including development of a topology map

The AT&T Team is experienced in the discovery of network elements and the associated task of illustrating those network topologies by utilizing a number of network applications and tools. ████████████████████████████

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[REDACTED]

### 1.5.8.4.17    Performance and Security Strategies [C.2.11.9.1.4 (2) (g)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
g. Development of strategies to improve reliability, availability, and security

The AT&T Networx Team will deliver customer solutions that meet reliability, availability, and security requirements. Our team's five-phase engineering approach (refer to **Table 1.5.8.1-2** includes formal reviews and milestones for performance and security requirements development and integration steps.

[REDACTED]

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████████████████████████████████ The result will be a superior

strategy for meeting reliability, availability and security requirements.

### 1.5.8.4.18   Design Validation and Documentation [C.2.11.9.1.4 (2) (h)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
h. Develop and validate current infrastructure drawings/schematics.

The AT&T Team will develop network architecture and detailed design drawings that

accurately reflect the customer's network. ███████████████████████████

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### 1.5.8.4.19   Service Interoperability Validation [C.2.11.9.1.4 (2) (i)]

2. The review shall include but is not limited to network performance, routing, IP addressing, numbering plans, physical/logical redundancy and diversity, network equipment, security, interoperability, and scalability. Tasks associated with this activity can include:
i. Validate service interoperability with other networks and systems

The AT&T Networx Team will perform comprehensive and thorough testing to

validate service interoperability with other networks and systems. █████████

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████████████████████████████████████████████ customers will have the added confidence of knowing that services will interoperate with other networks or systems within their operational environment.

### 1.5.8.4.20    Alternative Network Technologies [C.2.11.9.1.4 (3)]

3. The contractor shall evaluate network technologies alternatives and approaches to meet Agency requirements.

The AT&T Networx Team will evaluate technology alternatives, and approaches to incorporate a superior solution for the customer. Our team has a wide range of engineering expertise encompassing a number of customers, technologies, and methodologies that will be employed to provide customers with complete and unbiased evaluations and recommendations. The AT&T Networx Team will deliver solutions using industry knowledge and our team's combined corporate strengths for our evaluation. This will involve ████

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### 1.5.8.4.21    Network Modeling [C.2.11.9.1.4 (4)]

4. The contractor shall perform modeling and simulation of applications and network services prior to implementation in a production environment.

The AT&T Networx Team will utilize network modeling and traffic generators to verify and validate applications performance prior to final delivery to the customer. ███████████████

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## 1.5.8.4.22    Network Testing [C.2.11.9.1.4 (5)]

5. The contractor shall ensure rigorous and thorough testing is performed under a controlled test bed environment or the contractor's production network, according to subscribing Agency's needs, to verify and evaluate the suitability and compatibility of new services.

The AT&T Networx Team will develop test plans and procedures and perform any testing necessary to verify and evaluate new services for the customer and determine compatibility and suitability with respect to the requirements. Our team will work directly with the customer to develop test plans and detailed test procedures that fully test against customer requirements. Our team will perform testing within a laboratory environment, and upon request, at the customer's production network.

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## 1.5.8.4.23    Network Applications Testing [C.2.11.9.1.4 (5)]

5. The contractor shall validate and verify that the services and/or applications under test operate according to the Agency's requirements and objectives.

The AT&T Networx Team will develop test plans and procedures and perform testing necessary to verify and validate that services and applications operate according to customer requirements. ███████████████████████████

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## 1.5.8.4.24    New Service Impact Evaluation [C.2.11.9.1.4 (6) (a)]

6. The contractor shall provide technical support to facilitate the transition of services into a sustainable pilot or production service that operates on the Agencies networks. Tasks associated with this activity can include:
a. Evaluation of the impact of new services upon Agency networks

The AT&T Networx Team will provide engineering services to evaluate the impact of new services on an Agency's existing networks. ████████████████

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[redacted]

## 1.5.8.4.25    Production Transition Planning [C.2.11.9.1.4 (6) (b)]

6. The contractor shall provide technical support to facilitate the transition of services into a sustainable pilot or production service that operates on the Agencies networks. Tasks associated with this activity can include:
b. Development of transition plans

The AT&T Networx Team will develop transition plans as part of our standard documentation produced during a CSDES engagement. [redacted]

[redacted]

## 1.5.8.4.26    Implementation Support [C.2.11.9.1.4 (6) (c)]

6. The contractor shall provide technical support to facilitate the transition of services into a sustainable pilot or production service that operates on the Agencies networks. Tasks associated with this activity can include:
c. Implementation support

The AT&T Networx Team will provide implementation support services for transition of services. ████████████████████████████████████

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## 1.5.8.4.27    Test and Acceptance Planning [C.2.11.9.1.4 (6) (d)]

6. The contractor shall provide technical support to facilitate the transition of services into a sustainable pilot or production service that operates on the Agencies networks. Tasks associated with this activity can include:
d. Development of test and acceptance plans and criteria

The AT&T Networx Team will develop test and acceptance plans in support of customer transition support services. Each test plan will include the following elements:

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[REDACTED]

[REDACTED]

[REDACTED]

### 1.5.8.4.28    Network Performance Measurement [C.2.11.9.1.4 (6) (e)]

6. The contractor shall provide technical support to facilitate the transition of services into a sustainable pilot or production service that operates on the Agencies networks. Tasks associated with this activity can include:
e. Measurement and assessment of network performance.

AT&T will conduct an assessment of the existing applications and network services currently deployed on an Agency network. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### 1.5.8.4.29    Network Installation Services [C.2.11.9.1.4 (7) (a)]

7. The contractor shall provide design and engineering services for engineering prototypes relative to Networx services to include but are not limited to
a. Installation of network hardware and software

The AT&T Networx Team provides end-to-end CSDES solutions, which includes network hardware and software installation support for engineering prototypes. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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subject to the restriction on the title page of this proposal*          **AT&T Proprietary**          **Page 998 of 1474**
December 13, 2006

[REDACTED]

### 1.5.8.4.30 Network Device Configuration Services [C.2.11.9.1.4 (7) (b)]

7. The contractor shall provide design and engineering services for engineering prototypes relative to Networx services to include but are not limited to
b. Configuration of network devices such as routers, switches, and gateways

The AT&T Networx Team provides end-to-end CSDES solutions including configuration support of network devices for engineering prototypes as well as standard equipment configurations. [REDACTED]

[REDACTED]

### 1.5.8.4.31 On-Premise Cable Installation Services [C.2.11.9.1.4 (7) (c)]

7. The contractor shall provide design and engineering services for engineering prototypes relative to Networx services to include but are not limited to
c. Installation of on-premises cable and network drops

The AT&T Networx Team provides end-to-end CSDES solutions, including on-premises cable and network drop installation support for engineering prototypes. ███████████████████████████████████

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### 1.5.8.4.32    Testing and Acceptance Procedures [C.2.11.9.1.4 (7) (d)]

7. The contractor shall provide design and engineering services for engineering prototypes relative to Networx services to include but are not limited to
d. Performing testing and acceptance procedures.

The AT&T Networx Team provides end-to-end CSDES solutions including testing and acceptance procedures for engineering prototypes. ████

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## 1.5.8.5    Stipulated Deviations

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