State of New Mexico Statewide Architectural Configuration Requirement Title: Network Guideline N-GUIDE001.001 Effective Date: October 18, 2005

1. Authority

The Department of Information Technology (DoIT) shall develop, implement and maintain a coordinated statewide plan for information technology (IT) including the adoption of statewide technical, coordination, and security standards per the Department of Information Technology Act, NMSA 9-27-1 et. seq. (1978).

2. Purpose

The Network Architecture defines common, industry-wide, open-standards-based interoperable network infrastructures proving reliable and ubiquitous communication for the state's distributed information processing environment. It defines various technologies required to enable connections among its citizens, the federal government, cities, counties, and local governments, as well as the private business sector. The Network Domain Team describes a network infrastructure that supports convergent services, as well as accommodating traditional data, voice, and video services, providing the framework and foundation to enable Agency business processes, new business opportunities, and new methods for delivering service.

3. Scope

This applies to all Executive Agencies and to any other agency or entity utilizing Executive Agency infrastructure.

The Department Secretary or Agency Director, working in conjunction with the Department or Agency Chief Information Officer or IT Lead, shall be responsible for ensuring the effective implementation of Statewide Information Technology Policies, Standards, and Procedures within each agency.

4. Guideline

State agencies shall utilize Network Architecture target technologies, methodologies, standards, and best practices to develop, implement, and/or acquire networking system standards. Network Architecture specifies how information-processing resources are interconnected and documents the standards for topology, transport media, and protocols.

4.1 Network Architecture Topology

Network Architecture components of topology include the following:

- **Local Area Networks (LANs)** consist of communications systems of multiple interconnected workstations, peripherals, data terminals, or other

  devices confined to a limited geographic area consisting of a single building or a small cluster of buildings.
- **Campus Infrastructure** consists of communication systems between groups of buildings within a larger geographical area. Campus Infrastructure typically interconnects disparate communities of interest for information sharing and interoperability using private facilities or public carrier communication facilities.
- **Wide Area Networks (WANs) and Metropolitan Area Networks (MANs)** are communications systems that span a very large geographical area. WANs and MANs interconnect distributed branch facilities of agencies and also may function as aggregation mechanisms for disparate agencies with common communication requirements. WANs and MANs typically use or provide public carrier communication facilities.

Network Architecture components of transport media include: wire-based, which uses physical media (copper, fiber) to connect between two or more points, and wireless (mobile, voice/data, microwave, and satellite).

Network Architecture protocols address the set of rules for providing network access and communication.

4.2 Network Architecture General Principles

The planning, design, and development of Network Architecture are guided by the following general principles that support the State's strategic business goals and objectives:

- Networks provide the infrastructure to support Agency business and administrative processes;
- Networks shall be operational, reliable, and available for essential business processes and mission-critical business operations;
- Networks shall be designed for growth and adaptability;
- Networks shall use industry-proven, mainstream technologies based on open- and/or pervasive-industry standards and open architecture;
- Networks shall be designed with confidentiality and security of data as a high priority;
- Networks shall be designed with confidentiality and security of data as a high priority;
- Network access should be a function of authentication and authorization, not location; and
- Networks should be designed to support converged services while accommodating traditional data, voice, and video services and to be

"application aware" in the delivery of business-critical application systems.

4.3 Network Architecture Target Technologies

Components of the Target Network Architecture are reviewed and refreshed on a regular and scheduled basis to address major shifts in technology, as well as the emergence and adoption of new technology-related industry or open standards.

4.4 Network Architecture Standards

Network Architecture Standards define appropriate open- and pervasive-industry- standards for topology, transport media, and protocols, while still enabling old
and new systems to work together.

4.5 Implementation

The Network Domain Team has been designed to maximize current investments in technology, provide a workable transition path to targeted technologies, maintain flexibility, and to enhance interoperability and sharing. Network Architecture implementations shall adhere to implementation strategies.

4.6 Conformance of IT Investments and Projects to EA

To achieve the benefits of an enterprise-standards-based architecture, all information technology investments shall conform to the established procedures designed to ensure the integrity and interoperability of information technologies for State agencies.

5. Definitions

Refer to the N-DEF001.001 Glossary of Terms located on the DoIT website: http://www.doit.state.nm.us/standards.html

6. References

None

7. Attachments

None

8. Version Control

N-GUIDE-001.001

9. Revision History

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