



STATE OF NEVADA
Department of Administration
Division of Human Resource Management

CLASS SPECIFICATION

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
DIGITAL TELECOMMUNICATIONS SUPERVISOR	37	B	6.963
DIGITAL TELECOMMUNICATIONS SPECIALIST II	35	C	6.965
DIGITAL TELECOMMUNICATIONS SPECIALIST I	33	C	6.967

SERIES CONCEPT

Digital Telecommunications Specialists perform specialized electronic technician work involving the specification, fabrication, installation, maintenance, repair and modification of both hardware and network software for telecommunications systems, Local Area Networks (LANs) and Wide Area Networks (WANs) in a geographical area or on a statewide basis for one or more State agencies.

Ensure the continued operation of the agency's digital, Internet Protocol (IP) and analog telephone systems including telephone sets, digital data networks and facilities, customer service units/digital service units (CSU/DSU), modems, switches, routers, media converters, digital repeaters, transceivers, wireless bridges and access points, fiber and twisted pair cable plants, back up power systems network interface cards for computers and printers, wireless land mobile systems, compressed video devices, "T" carrier and Integrated Services Digital Network (ISDN) equipment, and the network and operating software required to ensure these devices operate in concert to make up a usable, dependable, telecommunications system.

Specify, install, document, diagnose, repair, and align equipment and systems down to component level; align and troubleshoot equipment making frequency, modulation, distortion, noise and power measurements using test equipment such as current power and voltmeters, spectrum analyzers, fiber and copper cabling testing and certification equipment, network protocol analyzers, T1, trunk and optical time domain reflectometer test sets, sweep generators, tuning and adjusting tools, microcomputers (PC) and microprocessor controlled test/status/alarm equipment.

Maintain network hardware and software operating at peak efficiency using advanced troubleshooting skills and understanding of electronics theory, communications protocols, and network software at a systems engineering level; ensure work is performed according to standards and regulations related to cable plant installation, fire stopping, asbestos operations and maintenance, and workplace safety; coordinate the repair or replacement of equipment covered by a vendor's warranty.

Coordinate activities with other divisions or agencies to perform system engineering, design and development review, including site layout, installation methods, interconnection methods, topologies, protocols, LAN and WAN digital and analog telecommunications network equipment, site power sizing and determination of power source types for each additional site or site to be modified as well as the repair and maintenance of a statewide communications system.

Install, configure, update, analyze and debug software in network devices to keep telecommunication, LAN and WAN systems operating in an assigned area of the state or statewide; work with users, vendors, and public service providers to resolve issues of policy, usage, and procedure.

Prepare management reports necessary for forecasting usage of existing systems and creating and maintaining the communications budget; perform cost analysis of current communications configuration and make recommendations for future improvements and enhancements.

Evaluate network location requirements, create project scope of work documents and obtain quotes; install or

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SERIES CONCEPT (cont'd)

supervise the installation of cabling and cable distribution systems in agency facilities allowing telephones, wireless digital networks, LANs and WANs to be inter-connected and distributed to offices and buildings as necessary using fiber, twisted pair, and wireless technology; test and certify that installed equipment meets performance specifications using appropriate test equipment; coordinate access and scheduling of projects to minimize disruption to users.

Maintain the shop's inventory of parts and equipment; maintain replacement and repair stock by researching part numbers, descriptions, and prices.

Prepare and maintain documentation of work completed, files for the system and vendor information for the assigned work area in order to provide a tracking system for completed maintenance and installation of components and units of the system.

Provide training to agency personnel in the maintenance, repair and use of digital network, LAN, WAN, and telecommunications equipment for both hardware and software.

Provide on-site direction and assistance to Digital Telecommunications Specialist I's and other technical staff as assigned.

Coordinate with other communications entities such as private, federal and State agencies in the repair, maintenance and modification of the agency's digital network and telecommunications systems.

Perform related duties as assigned.

CLASS CONCEPTS

Digital Telecommunications Supervisor: Under general direction, incumbents perform the full range of duties in the series concept and in addition, supervise a staff of Digital Telecommunications Specialists in a geographical area or statewide, and provide systems engineering design, research and development of an agency's statewide digital telecommunications system.

Conduct LAN, WAN, communications site, and user site engineering reviews including site layout, installation methods, interconnection methods, site power sizing and determination of power source types for each additional site or sites to be modified and determine the cable types, local topologies, protocols, and digital network equipment necessary to support wireless and wireline LANs and WANs.

Perform comparative analysis of existing system configuration with proposed improvements to ensure compatibility of old and new system parts, technology and techniques and adapt the new system to improve reliability, efficiency and cost effectiveness; develop and implement technical parameters and standard practices for the installation, maintenance and repair of digital network and telecommunications equipment and to ensure the integrity of the system is maintained.

Perform needs analysis concerning the agency's statewide communications system; write detailed plans and other documentation to meet identified needs including annual work plans and broad system improvements and strategy.

Assign, direct and evaluate the work of assigned staff; interview, select and hire personnel; delegate responsibility to appropriate levels; develop and communicate work performance standards consistent with principles of effective management; identify training needs and provide for appropriate training opportunities based on organizational requirements and within budget constraints.

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CLASS CONCEPTS (cont'd)

Digital Telecommunications Specialist II: Under direction, at the journey level, incumbents perform the full range of duties in the series concept and in addition, act as staff specialists with geographical responsibility for providing installation, repair and maintenance of an agency's telecommunications, LANs and WANs systems and/or act as a leadworker for lower level Digital Telecommunications Specialists and technical staff.

Digital Telecommunications Specialist II's typically work in large departments and may have responsibility for an entire division's digital network telecommunications system on a geographical or statewide basis.

Digital Telecommunications Specialist I: Under general supervision of a higher level Digital Telecommunications Specialist or Supervisor, incumbents either:

- 1) perform routine installation, repair and maintenance of the agency's telecommunications equipment below the journey level. Progression to the journey level is not automatic, and positions may be permanently allocated to this level; or
- 2) function in a training capacity and learn to perform the duties described in the series concept. Progression to the next level may occur upon meeting the minimum qualifications and with the approval of the appointing authority.

MINIMUM QUALIFICATIONS

SPECIAL REQUIREMENTS:

- * Some positions require extensive travel.
- * Some positions require on-call availability and emergency response during non-working hours including holidays.

DIGITAL TELECOMMUNICATIONS SUPERVISOR

EDUCATION AND EXPERIENCE: Bachelor's degree in electrical engineering, electronics technology or closely related field and three years of increasingly responsible experience in data communications networks involving the fabrication, installation, maintenance, repair and modification of hardware and software; **OR** an Associate's degree in electronics or closely related field and four years of experience as described above; **OR** one year of experience as a Digital Telecommunications Specialist II in Nevada State service; **OR** an equivalent combination of education and experience. (See *Special Requirements*)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

Detailed knowledge of: digital and analog theories, principles and practices; active electronic components such as switches and routers in the physical/electronic interface between networks; physical network infrastructure including categorized twisted pair, fiber optics, coaxial, wireless, connectors and interconnect systems; communications cable installation methods, construction and safety codes including cable support, conduit systems, penetration of surfaces, grounding, firestopping, plenum and riser spaces, asbestos and confined spaces regulations; configuration of network, telephone, electronic and end-user equipment. **Ability to:** perform system engineering design, review, assessment, research and development including site layout, installation standards, topologies, protocols, location of sources for equipment and parts, and cost estimates; write annual work plans, requests for proposal and scope of work documents; make accurate assessments and decisions needed to resolve emergencies and critical situations; prioritize and schedule multiple projects; maintain current knowledge of advances in LAN, WAN and telephony technologies; resolve conflicts with customers and staff *and all knowledge, skills and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
Working knowledge of: agency policy and procedure as applied to assigned projects; site-specific network and

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MINIMUM QUALIFICATIONS (cont'd)

DIGITAL TELECOMMUNICATIONS SUPERVISOR (cont'd)

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job): (cont'd) equipment standards; personnel principles and practices. **Ability to:** supervise the activities of assigned staff including delegation of responsibility, training, and evaluating performance.

DIGITAL TELECOMMUNICATIONS SPECIALIST II

EDUCATION AND EXPERIENCE: Bachelor's degree in electrical engineering, electronics technology or closely related field and two years of increasingly responsible experience in data communications networks involving the fabrication, installation, maintenance, repair and modification of hardware and software; **OR** an Associate's degree in electronics technology or closely related field and three years of experience as described above; **OR** completion of trade school, military or college training to the certificate level in electronics technology which included theory of communications technology and three years of experience as described above; **OR** one year of experience at the Digital Telecommunications Specialist I in Nevada State service; **OR** an equivalent combination of education and experience. (*See Special Requirements*)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

Detailed knowledge of: digital and analog theories, principles and practices; safety precautions associated with working with sensitive electronics, high voltage and hazardous chemicals. **General knowledge of:** network protocols such as Ethernet, TCP/IPX, and others. **Ability to:** supervise the work of outside contractors; prepare technical and analytical reports; perform effectively with frequent interruptions; *and all knowledge, skills and abilities required at the lower level.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):

Working knowledge of: network protocols such as Ethernet, TCP/IPX, and others. **Ability to:** coordinate and implement communications site development and improvement projects; provide training and direction to lower level technical staff; analyze communications protocols; perform network and system duties on network and telephone hardware and end-user equipment; analyze system problems and make necessary repairs; communicate effectively with, and make presentations to, non-technical people; explain proposals and recommendations to management in non-technical terms.

DIGITAL TELECOMMUNICATIONS SPECIALIST I

EDUCATION AND EXPERIENCE: An Associate's degree in electronics technology or closely related field and two years of experience in data communications networks involving the fabrication, installation, maintenance, repair and modification of hardware and software; **OR** completion of trade school or military training to the certificate level in electronics technology which included theory of communications technology and two years of experience as described above; **OR** a Bachelor's degree in electrical engineering or closely related field; **OR** an equivalent combination of education and experience. (*See special Requirements*)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

Working knowledge of: digital and analog electronics; safety precautions relating to electronic equipment or circuitry; math skills pertaining to electronics applications and basic practical usage; LANs and WANs utilizing interface equipment and technologies used to inter-connect and distribute to office and buildings. **General knowledge of:** telephone company technologies such as PBX systems, digital, Internet Protocol and analog phone sets and key systems, T1 and Fractional T1, ISDN, DDS, data path, compressed video and dial services; cable testing equipment; active electronic components such as switches and routers in the physical/electronic interface between networks; physical network infrastructure including categorized twisted pair, fiber optics, coaxial, wireless, connectors and interconnect systems; communications cable installation methods, construction and safety codes including cable support, conduit systems, penetration of surfaces, grounding, firestopping, plenum and riser spaces, asbestos and confined spaces regulations. **Ability to:** diagnose and repair system malfunctions; coordinate vendor support; operate a variety of electronic test equipment applicable

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MINIMUM QUALIFICATIONS (cont'd)

DIGITAL TELECOMMUNICATIONS SPECIALIST I (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application): (cont'd)
to the environment; establish, interpret and maintain network schematics and drawings; properly maintain inventory records including shipping and receiving logs; use a microcomputer and perform network configurations; use a variety of hand and power tools; make mechanical modifications; fabricate network interface cables; read and maintain technical manuals; write routine business correspondence; work independently and as a team member; build and maintain effective working relationships with co-workers, end-users, vendors and others.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge Skills and Abilities for Digital Telecommunications Specialist II's.)

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

	<u>6.963</u>	<u>6.965</u>	<u>6.967</u>
ESTABLISHED:	7/1/93P	7/1/93P	7/1/93P
REVISED:	8/31/92PC	8/31/92PC	8/31/92PC
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