Executive Summary

a) Opportunity the proposed system seeks to address: The State of Nevada has operated an analog microwave system since the 1970's, where its primary function was to provide radio control circuits to the mountaintops primarily for state, federal, and local public safety dispatch operations. In 1999/2000, the State of Nevada began a multi-phase project upgrading the old analog microwave system to a new OC-3 digital backbone that now provides circuits to over 60 different agencies throughout the state. The final phase of the digital upgrade project was completed in June of 2009. As of January 2010, the state microwave system has nearly exhausted its available bandwidth. The Department of Information Technology (DoIT), Nevada System of Higher Education (NSHE), and Department of Transportation (NDOT) partnered to build the existing infrastructure. Therefore; in conjunction with Nevada Rural Hospital Partners, Nevada System of Higher Education, Department of Information Technology and Department of Transportation, the State of Nevada is proposing a new IP microwave backbone in parallel with the existing OC-3 system that will provide broadband service to as many as 34 rural communities, where service is either underserved, not served at all, or in need of upgraded infrastructure. The proposed system will utilize a combination of new microwave carriers with interconnection points on the I-80 Williams fiber in Elko, Las Vegas, and Reno, and the Highway 50 fiber between Ely and Carson City; jointly reaching nearly every community in the state. Utilizing the existing infrastructure already in place throughout the state, i.e. shelters, towers, and antennas, the proposed system could be deployed with a minimum amount of construction. However, some site upgrades, such as DC power plants and rectifiers, will be required to support the additional equipment loading. This system expansion will provide Nevada Rural Hospitals the ability to access an electronic medical records database, providing potentially lifesaving patient information to doctors throughout the state. In association with Nevada System of Higher Education, the proposed project includes IP microwave connectivity that will serve schools and educational facilities in rural areas that are currently served by either dial-up service through the Phone Company or expensive T1's. Another primary function of the proposed system is to provide IP backhaul to the mountaintops in order to serve public safety communications infrastructure that is migrating to IP based radio networks. The Nevada Department of Transportation operates the Nevada Shared Radio System (NSRS) that is a statewide EDACS trunked radio system that provides communications for public safety agencies throughout the state, including the Nevada Highway Patrol. The existing OC-3 microwave system currently carries traffic for the NSRS but is TDM technology and does not easily support IP; it is also out of capacity and cannot support additional users such as Nevada System of Higher Education or Nevada Rural Hospital Partners. Implementation of the proposed system will address all of the needs of continual expansion of public
safety communications and support interoperability throughout the State, especially in the rural areas. Implementation of Intelligent Transportation Systems (ITS) by NDOT will provide real time information on road conditions to NDOT operations and to the traveling public. The ITS devices supported include roadway weather systems, message signs, chain control signs, dust warning signs, highway advisory radios and cameras. The State of Nevada’s proposed project will also provide interconnecting points with Nye County, Clark County and at the State’s borders with Oregon, Idaho, Utah, and California where interoperable communications can occur. b) A general description of the proposed funded service areas (location, number of communities, etc.): Essentially, the proposed service area for this project is the entire State. It takes an extensive network to provide service to the proposed Community Anchors in this project. The proposed system will provide middle mile connectivity into 34 target communities throughout Nevada. c) Number of households and businesses passed: No households or businesses will be served by this project. d) Number of community anchor institutions, public safety entities, and critical community organizations passed and/or involved with project (e.g., health care, education, libraries, etc.): This project will provide broadband service to fourteen K-12 Schools, eight rural hospitals, 58 Public Safety communication sites, 24 highway maintenance stations, and an unnumbered amount of Intelligent Transportation Systems (ITS) throughout Nevada. e) Proposed services and applications for the proposed funded service areas and users: Proposed service for the rural hospitals will be between 10 Mb and 25 Mb for electronic medical record sharing. Depending upon location, service will be between 1.5 Mb and 180 Mb to rural schools and educational institutions. Remaining service will be backhaul capacity for public safety communications state wide. Users are: Nevada Highway Patrol, Nevada Department of Transportation, Nevada Department of Corrections, Department of Information Technology, Division of Forestry, State Parks, Department of Wildlife, Emergency Medical Services, Division of Emergency Management, County Sheriffs, Southern Nevada Area Communications Council (SNACC), National Weather Service, Department of Energy, US Department of the Navy, Federal Bureau of Investigation, Bureau of Land Management, US Forest Service, Public and Commercial Broadcasters, UNR Seismology, NV Energy and numerous others. f) Approach to addressing the non-discrimination and interconnection obligations: The joint infrastructure described, although largely based on dedicated commercial infrastructure, is considered a private network. As a result, the Nevada joint infrastructure is not subject to FCC commercial carrier regulation and is therefore exempt from commercial carrier equal access requirements. The intent of the infrastructure in this proposal is aimed at serving schools, hospitals, and public safety entities. The Nevada System of Higher Education (NSHE) portion of the proposed system will be on a dedicated IP backbone and distribution network providing broadband service to educational facilities for purposes of higher education; this network will provide open access. This dedicated IP network will also carry Nevada Rural Hospital Partner’s traffic for purposes of transferring electronic medical records and will be segregated from the open access school system utilizing MPLS or VPN technology to provide security between the two systems. Public Safety traffic will also be on separate dedicated IP and OC3 TDM carriers in order to ensure security of the public safety traffic. Interconnection obligations between participating members of the project will be detailed in an in-kind trade Service Level Agreement outlining responsibilities and the service that each will provide. g) Type of broadband system that will be deployed (network type and technology standard): A combination of IP and TDM technologies utilizing fiber optic, digital microwave backhaul and distribution networks using the latest technologies from
Aviat Networks (formerly Harris Stratex) and Cisco. h) Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband services provider: Under NRS 242, The Department of Information Technology (DoIT) is required to provide IT services for agencies and elected state officers. DoIT employs qualified network engineering and microwave staff to ensure IT objectives are met. It provides high speed network services to nearly every state agency. Over the last 10 years, DoIT has implemented a new digital microwave network in a four phase project, replacing a 30 year old analog system. The State of Nevada already manages a state wide microwave and computer network that is comprised of both fiber optic and microwave infrastructure. It has previously partnered with Nevada System of Higher Education and the Nevada Department of Transportation on the existing infrastructure. i) Overall infrastructure cost of the broadband system: Estimated $34 million. j) Overall expected subscriber projections for the project: 22 State Agencies, 6 Federal Agencies, 17 County Agencies, 14 K-12 Schools, 2 Community Colleges, and 8 Rural Hospitals. k) Number of jobs estimated to be created or saved as result of this project: Using the method outlined by the Council of Economic Advisors, it is estimated that this project will create a total of 370 job-years, 237 from direct and indirect effects and 133 from induced effects.