The purpose of the Mobile Telemedicine System for Emergency Medical Services and First Responders project is to increase broadband adoption in rural and underserved communities by developing a low cost telemedicine solution that takes advantage of existing commercial broadband networks and mobile technologies to remotely connect emergency medical responders with medical specialists; and to improve coordination between 9-1-1 emergency dispatch, EMS, first responders, hospitals and trauma centers via the Internet. The solution will be based on the Apple iPad (or similar platform) where patient data will be collected from peripheral diagnostic devices and sent over a wireless network link to the emergency room of the target hospital -- providing access to medical images, ECG and ultrasound results, physiological data and real-time video. By developing and field testing the Mobile Telemedicine System for Emergency Medical Services and First Responders this project will: 1. Facilitate the immediate exchange of information with remote mobile sites and ambulances - enabling early diagnosis, intervention and treatment in certain events (trauma, stroke or cardiovascular) 2. Enable EMS to manage emergencies more effectively and expedite treatment for patients in need of specialty care especially in situations where a patient is being transported over long distances or there is a choice between multiple medical care facilities. 3. Enable call centers to more efficiently deploy limited health care resources (e.g. medical specialists) during a life-threatening event or large-scale disaster. 4. Reduce transportation time and expenses by avoiding unnecessary travel to tertiary care facilities Successful demonstration of the Mobile Telemedicine System for Emergency Medical Services and First Responders solution has the potential to: 1. Improve access to, and use of, broadband by public safety agencies by eliminating the technological and financial barriers to its adoption. 2. Increase the availability of specialized medical care in rural and underserved communities where there is limited access to broadband Internet. 3. Improve job retention among emergency medical personnel by providing broadband awareness, training, equipment and support to EMS, first responders and community anchor institutions. 4. Foster the development of state and regional telemedicine call networks and their use of broadband solutions by providing an affordable and customizable telemedicine system for ready access to specialty consultation services. 5. Lay the foundation for future emergency telemedicine applications, such as post-treatment, in-home patient monitoring, that can further extend the reach of broadband to those most in need. The project has commitment from 1 EMS company involving 18 responders and 8 call center participants, and will coordinate with 2 hospitals (involving 24 nurses and 12 physicians) who will all be trained and will actively participate in the field trials during the funded period. In the year following this project the number of EMS companies and hospitals is expected to double and triple respectively. Areas to be served Initially this service will be offered to rural populations in Santa Clara
County and neighboring communities, including King, Merced, Monterey, San Benito and Santa Cruz Counties in California. The remaining counties in California will be targeted in the years that follow. However, this technology is expected to be made available to all emergency medical personnel and rural hospitals nationwide and to be made adaptable to new applications such as post treatment, in-home patient monitoring. Organizational Qualifications NorCal Telehealth is a non-profit California Corporation founded July 2009 in order to improve access to stroke care in underserved urban areas and rural communities. NorCal Telehealth was founded by Raul Guisado MD, a Stroke Neurologist with over 30 years experience in general neurology and stroke. The overall performance of NorCal Telehealth is under the direct supervision of Dr Guisado who is also Medical Director of two Joint Commission Certified Primary Stroke Centers in San Jose California (O'Connor Hospital and Regional Medical Center). NorCal Telehealth is partnering with Ascentronics, Inc. and Verihealth, Inc. for the design, implementation and EMS pilot of the Mobile Telemedicine System for Emergency Medical Services and First Responders. These companies have a strong history in technology, telemedicine and emergency medical services and bring the following leadership credentials: Kishore Kumar, co-investigator, has more than 27 years of experience in software development and entrepreneurship. He is the founder and President/CEO of Ascentronics Inc., which specializes in developing state-of-the-art Internet solutions for Silicon Valley companies. Prior to Ascentronics, Kishore founded TeleVital in 2000 ' delivering the first remote anesthesia monitoring solution ever delivered over the Internet, for MEDITAC/NASA. He then partnered with Indian Space Research Organization (ISRO) to provide telemedicine services to more than 400 hospitals in India. Kishore has held management and engineering positions with NUKO Information Systems, Sun Microsystems Inc.in USA, and Pragati Computers in India. He holds a Bachelor's degree in Engineering in Electrical and Communications and a Postgraduate diploma degree in Microprocessor hardware and software from Bangalore, India. Bruce H. Lee, Co-Investigator, has over 25 years experience in Emergency Medical Services (EMS) in both public and private sectors. He is the CEO of a privately owned healthcare firm that provides basic, advanced and critical care ambulance services, nursing education and home healthcare/ telemedicine products. Mr Lee currently chairs California Commission on EMS as Governor Schwarzenegger appointee. Mr Lee recently retired as the Director of the EMS agency for Santa Clara County, California, Public Health Department. In this position he was responsible for the management and oversight of a complex public safety EMS and trauma system and many medical disaster preparedness programs. During his tenure as EMS Director, he was instrumental in the development and implementation of the first organized stroke care system in California. He was also responsible for the development of a highly successful EMS STEMI (cardiac) care system involving eight receiving hospitals. Mr Lee serves on the board of directors of NorCal TeleHealth. He also serves on the Western States Stroke and Cardiac Task Force for the American Heart Association. Jobs to be saved or created Jobs related to this project will be created across the three phases of the project’s timeline. Phases one will result in at least 8 new jobs focused on architecting, developing, testing, documenting, training, deploying and maintaining the proposed solution. In phase two additional resources will be recruited and trained. To that end, 2 nurse educators will be added to the team. Once the project has been launched (phase three), job creation and retention is expected to grow according to demand. During this period we not only anticipate additional engineering and organizational staff but also expect medical staff to be hired to perform the triaging and management of patients, and to train other emergency medical staff. At least 3 IT administrators will be added to troubleshoot and install the
first system in the third year. As the number of hospitals and EMS providers increase, additional nurse educators will be recruited (at least 8), along with additional IT (3 for each county). By training the EMS, first responder, and emergency staff, this project has the potential to not only increase job growth but to increase retention of healthcare personnel, especially in rural communities where access to advanced medical technology and education is limited. Overall Cost of the proposed project: We expect that the cost of this project to be approximately $784,440 and includes $189,420 in partner matching funds. These costs account for early stage development ($407,000) as well as the deployment and maintenance of the pilot program ($377,440). Beyond this period, we expect this project to be self-sustaining in accordance with demand for the technology in greater California and beyond.