Knight Sky Consulting & Associates, LLC
Easy Grant ID# 1001
SKYMAX Public Safety Broadband Satellite Network

Executive Summary of Overall Proposal:

State and local governments across the United States are primarily responsible for deploying public safety telecommunications networks to support voice, data and video communications for police, fire, and other emergency responders. During the Hurricane Katrina disaster in 2005, most terrestrial based commercial telecommunication networks (PSTN land line, PSTN cellular and land mobile radio for first responders), were damaged or destroyed. Satellite communication networks were largely unaffected by the hurricane. Satellite ground terminals were rapidly deployed in an effort to restore basic communication infrastructure. Domestic Ku-band geosynchronous satellites (GEOs) and low earth orbit satellites (LEOs) were first used for command and control communications and later as disaster recovery progressed, for health and welfare communications. The demand for connectivity on the LEO systems rapidly outstripped these satellites' capacity, resulting in a very poor grade of service that inhibited communications. GEO based satellite networks on the other hand, with broadband transponders and IP transport capability via shared channel access technologies, were far more robust and easily supported voice, video conferencing and web access.

Since the Hurricane Katrina disaster, both DHS and FEMA have made great strides in adopting the use of GEO satellite network systems to support their mandated activities. In 2005 Knight Sky Consulting and Associates, LLC was called on by the DHS Operations Directorate to set up a national satellite network whose main focus would be to facilitate communications from the Operations Directorate in Washington, DC to the DHS Primary Federal Official (PFO) at the incident site. The secondary use of the network would be to provide situational awareness back to the Operations Directorate so that the proper decisions could be made concerning the situation on the ground. Knight Sky began the project by selecting iDirect Technologies as the core system for which to build the DHS satellite gateway upon. Since that time a satellite teleport has been set up in DC and a second, geographic diverse back-up teleport in San Diego, CA. The DHS SATOPS network has been able to effectively utilize 10 MHz of emergency satellite coverage to be used at the Operations Directorates' discretion.

Since the events of 9/11 and Hurricane Katrina, the federal government has set up several types of FEMA-run grant programs and made them available for state, city and local governments to purchase interoperable radio equipment and in some cases satellite communications equipment. However, an overall national broadband satellite initiative aimed at public safety agencies has yet to be put into place. At present, public safety agencies using satellite communications have been limited to purchasing standard consumer level service packages through oversubscribed commercial satellite network providers [redacted]. These networks typically have no interoperable communication mandate nor do they have sufficient bandwidth committed that would be required in a disaster. Essentially their service would be the equivalent of trying to get a WiMax connection or use a cellphone in a 9/11 or Katrina emergency environment. A broadband satellite network when deployed and managed properly through the adherence of use policies and procedures, can offer affordable, on-demand broadband for public safety and

emergency response users, greatly improving the number of agencies and institutions that adopt this technology.

Knight Sky is requesting grant funds to develop a robust broadband network using satellite communications. Based on our 4 years of experience operating the DHS SATOPS network, [redacted]

[redacted]

Knight Sky plans to have the network completely operational within 90 days from the day the grant money is received. Knight Sky will immediately install and operate [redacted] terminals and plans to use them in a selected State as a demonstrative model for which other State's public safety agencies and other institutions can adopt. These terminals will be provided for and operated without charge to agencies for the first two years of the program. A nation-wide marketing drive will take place to engage other users. For those users the terminal and installation will be provided for free and a user's fee collected for the managed service. The target is to have by the end of year 2 when the grant money will have been completely consumed, [redacted] primary public safety agencies and [redacted] secondary health care and education institutions on-line, to generate recurring revenues. These users paying a nominal monthly service charge will enable the network to be self-sustaining and without job losses. We are confident that SKYMAX will be a success and will provide a key missing element for the public safety agencies, healthcare and educational it services with broadband internet connectivity.