Broadband USA Applications Database

**Applicant Name:**  TELEPULSE TECHNOLOGIES CORPORATION

**Project Title:**  Solving the technological last mile problem for rural America

**Project Type:**  Sustainable Broadband Adoption

_______________________ Executive Summary _____________________

a) TelePulse's patented Dynamic Time Metered Delivery (DTMD) technology enables broadband service providers to significantly expand the number of US citizens they can reach and the data rates they provide using their existing copper wire infrastructure. TelePulse will leverage its expertise, available technology and stimulus funding to provide DTMD capabilities to broadband service providers in two primary ways. Where the provider has already deployed the much more limited Digital Subscriber Line (DSL) technology, we will provide upgrades via insertion of DTMD chips into existing DSL equipment. Where the provider has not deployed any digital broadband access equipment, we will provide DTMD Access Multiplexers and Customer Premises Equipment (CPE). We believe that our ability to optimize the broadband utilization of the significant amount of existing copper infrastructure nationwide will be a highly efficient use of stimulus funds. 

b) Our approach is innovative because it uses new technology specifically designed to work over the challenging, existing and virtually abandoned phone lines that removes the barrier keeping the greatest number of end users from getting broadband service. It is also innovative because its radical decrease in scale-up costs to rollout the service encourages the service provider to offer more data intensive applications to end users. With the elimination of the technology barrier and the radical decrease in cost to deploy, being un-served or underserved will be a matter of customer choice. Our approach is also innovative because it rejuvenates the US based telecommunications equipment market and energizes US high tech manufacturing markets for global sales and generates new implementation jobs. We bring a fresh, new, and powerful technology into a market that has become quite mature and foreign based. DTMD technology is suitable for all twisted pair access lines. Because many customers have abandoned the copper line service and use wireless phones exclusively for voice the phone lines in use have fallen below 200 M. However, the actual number of US lines useable for DTMD is over 280M. The critical infrastructure wireline will again be valuable. Globally, the market is over 1.5B lines and growing at 3.35% annually (FCC and ITU statistics). The presence of a major phone provider in our application gives a ready market for expansion after the grant expiration. 

c) Nationwide the number of un-served broadband homes is likely in the range of 6-8M and underserved in the range of 10-20M households. These numbers are estimates taken from data at The National Cable and Telecommunications Association, 'Down Payment On Our Digital Future' by Free Press Action Fund and FCC form 477 data. Data from Chilson Enterprises show that even in the smallest and remote of rural towns with central offices averaging 1,800 lines, over 90% of those loop lengths are less than 31kft. Better information on all of these numbers should be available after the finish of the National Broadband Mapping program. With DTMD, 6-8M current broadband un-served can be enabled with a broadband speed of minimum 1.5Mbps on their current lines using a DTMD access multiplexer in
the central office and a compatible modem at the customer premises. This removes any technological barrier to providing the un-served with broadband. We are initially targeting several audiences in Pennsylvania: 1. Rural Central Offices where end users are served by copper twisted pair but either their distance from the CO or their low concentration makes the deployment of broadband at 3Mbps or more unfeasible either technologically or economically 2. Urban or sub-urban central offices where end users are served by copper twisted pair but their personal economic demographic situation is such that they cannot afford the broadband services at 5Mbps or more that are available around them d) TelePulse Technologies has 16 scientists and engineers on its team, including 3 PhD’s, bringing together over 200 years of technology innovation and implementation experience, over 25 issued patents, and an enormous volume of scholarly publications. Current Team has significant experience in, business and large scale project management; telecom business development; invention and technology innovation in required signal generation and processing; technology and product development for telecommunications; rapid prototyping and conversion from FPGA to ASIC; designing and testing to rigorous standards; systems engineering and management; wireline installation and CO operations; manufacturing engineering and product design for large scale production. WE ARE READY TO MOVE INSTANTLY. The people are in place to begin right away. The manufacturer is ready to start working with us. A major rural broadband provider has agreed to test and demonstrate the equipment. Favorable talks are already in progress with other local phone companies for demonstration. TelePulse has experienced performers who have planned and implemented projects taking innovative technologies and getting them fielded in applications that have significant and serious constraints for over 25 years. The bulk of the experience comes from rigid military applications of custom-modified Commercial Off-The-Shelf components and subsystems. e) This project will initially generate 53 jobs utilizing BTOP funds directly to TelePulse Technologies and associated contractors. Phone service providers working with us will be giving DTMD service to 1,000 previously un-served or underserved customers by the end of the project. TelePulse will then use the results of the various mapping programs to target further customers. Post project downstream production of equipment to serve at least 10% of the known unserved market (800k lines) would generate ~ 4,000 man-years/year of high tech labor for manufacture and nearly 700k man-years in rollout installation and service with the phone companies. f) The overall cost of the project is $9,768,882.