

Feasibility of Bridge Health Monitoring System (BriHMS), Phases 1 & 2 (U.S. Army DAAE07-99-C-L069) – The US Army TACOM’s goal of developing a system that can measure the health of portable battlefield bridges was accomplished with the Bridge Health Monitoring System (BriHMS) that was developed and tested in this program. The mission of measuring the health of portable battlefield bridges required a system that was functional, reliable, easy to manufacture, easy to install and easy to maintain. It needed autonomous capabilities to allow the system to perform its duties while minimizing risk to crews. These requirements were accomplished in the design of BriHMS, which derives bridge health information from the response of the bridge to vehicle crossings without human input. Innovative signal processing and signature recognition algorithms, developed by TransTech Systems, provided the keys to transforming strain and deflection information first into vehicle and crossing geometry data and then into bridge health information that could be transmitted to a secure location via wireless and/or GPS methods. TransTech also developed a novel, rugged, reference-less inline deflection sensor to go with the other off-the-shelf hardware. TransTech is currently looking for civilian agencies and companies to work with in order to extend the successful BriHMS technology to civilian highway and railroad bridges.