

Portable Bridge Assessment System (PBAS) – This cutting edge program would extend what was learned during TransTech System’s previous, highly successful US Army Phase II SBIR project, Feasibility of Bridge Health Monitoring System (BriHMS), to civilian highway and railroad bridges. Using the innovative inline deflection sensor and advanced signal processing and signature analysis techniques developed for the Army program, TransTech expects to be able to incrementally go from the simple single vehicle, single lane scenario to the complex multi-vehicle, multilane case that would ultimately prove most useful for bridge owners. With this software capability, TransTech could provide the civilian market with a portable, wireless and self-powered system that would supply: the effect of combined loading of multiple vehicles on the strain of bridge girders; determination of the weight of an axle or full vehicle load crossing the bridge; determination of the speed of a specific axle as it crosses the bridge; the ability to keep track of axle crossings over a significant value – giving a usage pattern of vehicle crossings so that the type and quantity of vehicles crossing the bridge could be determined; the ability to keep track of axle crossings over an overload value; the ability to track the fatigue life rating of a bridge; ability to define load ratings and track changes in load ratings; and, the ability to identify some forms of damage (bearings, footing settling, earthquake, collision, etc.). The vast majority of these capabilities would make a bridge manager’s job easier and allow them to carry out their duties faster and more cost effectively.