

Success Story: Bandtrack Over Tires

Requirements:

- Develop a “bandtrack-over-tires” system to enhance soft soil mobility on medium duty trucks
- Develop a semi-active air spring tensioner system powered by truck pneumatic system
- Phase I & II SBIR concentrated on developing a continuous bandtrack & tensioning system
- Phase III SBIR focus was to develop segmented bandtrack & improve track alignment

Processes:

- Development of dynamic analytical model with validation using experimental data
- Utilization of dynamic model as a design tool to optimize the band track layout and vehicle configuration
- Produced prototype band track and tensioning system for vehicle installation
- Instrumented test vehicle with multiple transducers
- Performed a series of off-road tests over varied terrains such as deep mud, sand, and deep snow

Prototype:



Results:

- Field tests of segmented track showed **improved alignment**
- Extensive testing **passed**, including frame twist, step, side slope, 60% grade, cross country, off-road, secondary
- Demonstrated **improved mobility** in mud, soft soil & snow
- Demonstrated **rapid field installation** and **reduced maintenance** achieved with track segments

