This SBIR subtopic augments on-going activities in the Vehicle Systems Safety Technology (VSST) project within NASA’s Aviation Safety Program. Specifically, this subtopic addresses the "Maintain Vehicle Safety between Major Inspections" (MVS) technical challenge. The MVS technical challenge concentrates on capabilities to maintain vehicle safety between major inspection intervals with an emphasis on the subsystems of airframe, avionics, and propulsion. NASA is seeking proposals to combine information from, and within, the various subsystems to perform overall vehicle level diagnostics. The objective of this work is to provide an infrastructure to assess the health state of aircraft through the integration of full vehicle sensors and diagnostic information. Partnering with organizations that can provide relevant data is encouraged.