

**DoD SBIR / STTR****DETAILS - Awards Search Results****Program:** SBIR**Agency:** ARMY**TOPIC Number:** A1992-143**Contract Number:** DACA88-95-C-0009**Awarded In:** 1995**Award Start Date:** 3/23/1995**Field Office:** COECERL**Control Number:** 92CER-025**Phase:** 2**Award Amount:** \$498,705**Award Completion Date:** 3/23/1996**Proposal Title:** Automated In-Situ Inspection System for Underground Fuel Storage Tanks**Principal Investigator Name:** Bruce W. Mckee**Principal Investigator Phone:** (607) 257-0533**Principal Investigator Email:****Firm**

INNOVATIVE DYNAMICS, INC.
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URL:**Woman Owned:** N**Minority Owned:** N**Number of Employees:** 15**Keywords:** NEURAL NETS, ROBOTS, MONITORING, TANKS

Abstract: Future underground fuel storage tank inspection robots will require sensors that can detect frontwall/backwall pitting without extensive surface cleaning and preparation. Such sensors will drastically reduce tank inspection time and cost, while simultaneously improving inspectio accuracy. Innovative Dynamics, Inc. proposes to address this problem by developing intrinsically safe electromagnetic sensors that can be easily integrated with an Army tank inspection robot, as well as other commercial appliaitons. Each sensor will be designed into a thin, rugged case with its own power/sensor umbilical. By separating the sensor from the robot power system, robot/sensor integration is reduced to attaching the sensor to the robot. More importantly, the robot/sensor combination does not have to undergo recertification for hazardous/explosive environments. This drastically expands the commercial marketability of both the sensor and robot. The sensors will be tested and characterized on tank wall specimens gathered from the Aberdeen Proving Grounds

tank removal program, using a programmable XY translation table to simulate robotic motion. The test signal database will be used to train a real-time neural network for automated flaw detection, which will further improve the speed and accuracy of tank inspections, thereby reducing Army inspection costs.



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