Nanotok, Inc

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NAICS: 541715, 334511, 541330, 541511, 541512
PSC/FSC Codes: 6625
Socio-Economic Status: SDVOSB, Small Business

Precision R&D for Advanced Sensor & Real-time Systems

Nanotok INC is a prime DoD contractor specializing in contract R&D focused on instrumentation development, advanced sensors, embedded signal processing, and real-time software. Located in Merced, California, our business model centers on developing innovative hardware prototypes through Cooperative Agreement contracts, with a clear path to manufacturing and ongoing delivery via IDIQ contracts. We are dedicated to collaboratively producing cutting-edge solutions that support critical defense objectives.

Core Competencies

Nanotok INC provides specialized R&D and prototyping capabilities to meet the evolving demands of the Department of Defense, with a focus on advanced sensing and real-time data analysis for critical applications. Our expertise includes:

- Advanced Instrumentation Development: Design and development of high dynamic range, high-resolution (24-bit) wide-bandwidth instrumentation for diverse measurement needs. Such as: Portable 8-channel Mobile Power Meter. Portable 8 or 16 -channel Wide-Band Data Recorder.
- Sensor Technology & Integration: Expertise in electric and magnetic field sensors, low-power data acquisition, and diverse sensor connectivity (differential/single-ended).
- Embedded Signal Processing: Development of state-of-the-art load detection and identification algorithms, dynamic signal analysis, and real-time data processing on embedded platforms.
- Real-time Software Development: C++/Python-based Linux software solutions (e.g., ARES App) for measurement parameter computation, event triggering, and data management.
- Wireless Sensor Networks & Mesh Networking: Design and implementation of robust, wirelessly synchronized, and battery-operated sensor networks for unattended ground sensing and mobile monitoring.
- Power Quality & Mobile Power Monitoring: Specialization in mobile power metering (MPM) with non-intrusive multi-dimensional current/voltage sensors and stand-off load sensing.
- Data Acquisition & Connectivity: Solutions with built-in GNSS timing, LTE modules, and cloud integration (AWS via MQTT protocol) for real-time data broadcast and analysis.
- COTS IoT Integration: Leveraging Commercial Off-The-Shelf (COTS) IoT components for rapid prototyping and scalable deployment.

Past Performance

1. Project Title: Wireless Sensor Network Prototype Development
- Client: U.S. Army Research Laboratory (ARL), Adelphi, MD
- Role: Prime DoD Contractor (Cooperative Agreement)
- Description: Collaboratively developing a set of hardware prototypes for a new wireless sensor network, encompassing Nanotok's proprietary sensor technology. This R&D effort focuses on instrumentation, embedded signal processing, and real-time software for advanced sensing capabilities.
- Impact: Successful delivery of initial prototypes for Army internal testing and deployment, establishing a foundation for future large-scale manufacturing and deployment via an anticipated IDIQ contract. This effort directly supports the Army's next-generation sensor network requirements.

Differentiators

- Specialized R&D to Manufacturing Model: Unique business model transitioning from non-profit R&D Cooperative Agreements to profitable IDIQ manufacturing contracts, ensuring long-term partnership and product evolution.
- Proprietary Sensor Technology: Core expertise in advanced electric and magnetic field sensors, underpinning high-performance data acquisition and analysis.
- Proven Prototype Development & Delivery: Demonstrated capability in designing, building, and delivering functional hardware prototypes for critical DoD applications.
- Real-time & Embedded Systems Focus: Deep technical proficiency in embedded signal processing, real-time software (C++/Python on Linux), and wireless synchronization for immediate operational insights.
- Dual-Market Versatility: Ability to tailor and manufacture product versions for both U.S. Government and commercial markets, leveraging R&D investments across diverse sectors.
- Strategic Location: Located in Merced, California, offering proximity and access to key innovation hubs and defense initiatives.