POLLERE, INC.
network performance, architecture, analysis

Capabilities Statement

Company Overview

Pollere specializes in solving tough network architecture and performance problems through design, research, proof-of-concept, laboratory work, simulation and analysis.

- Founded 2004
- Based in Montara, CA
- Subject Matter Experts and Functional Experts in Data Networking
- Consultants in CA, CO
- CAGE: 4K8Z5
- DUNS: 152973538
- NAICS: 541690, 541712
- Woman-owned small business
- Web site: www.pollere.net
- Contact: info@pollere.net

Our primary focus is medium to long term engagements, though focused short term projects and expert consulting can be accommodated.

Why Pollere?

We are great collaborators, team leaders, and mentors. Our goal for our clients is to make you stronger: we shine when you shine.

1. Pollere has proven expertise, focused on architecture and analysis.

- leadership positions in companies and standards bodies
- strategic data networking architectures
- published authors and inventors
- uniquely capable of extracting the best, relevant technologies from the research community and applying them to current problems.

2. Pollere can help you win.

- developed quality of service architecture cited as a strength in the TMOS award.
- DHS SBIR proposal selected for award
- DOE SBIR proposal awarded
- NIST SBIR proposal awarded
- excel in writing and presentation
- bring industry-tested skills and research quality analysis to our engagements.

3. **Pollere is an experienced government contract subcontractor and SBIR awardee.**

Core Competencies

Data Network Architectures:

- ICN: Named-Data Networking secure transport
- IP Quality-of-Service
- Network Traffic Performance & Analysis
- Security/Information Assurance
- Network Measurement & Monitoring
- Link, Network, Transport & Authentication Protocols
- Interlayer interactions and impact

Work Products:

- Analysis, Reports, Briefings
- Laboratory Experiments and Proof-of-Concept
- Modeling and Simulation
- Seminars & tutorials

Scope of Work

Available individually as consultants or as a team performing contract R&D, either integrating with your personnel or working to implement a project.

About Us

We have proven records of leadership, technical expertise, and practical experience. We have built and managed groups in product development, research and advanced development, professional services. We have worked on government contracts writing and reviewing requirements and in working groups. We excel at identifying, articulating and prioritizing architectural requirements based on diverse client needs, cost, performance and security impacts.

Technical Papers:
In conferences, journals, magazines, including award-winning papers. See https://pollere.net/resources.html

Books:
Implementing IPSec: Making Security Work on VPNs, Intranets, and Extranets, Wiley Networking Council Series

Inventors:
Method of Estimation of Network Path Segment Delays, US Patent 9961000
Method for Detecting Non-Adaptive Network Flows, U.S. Patent 6934256
Random Early Detection Policer using Randomization of Packet Drops, US7149187

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Multi-Channel Support for Virtual Private Networks in a Packet to ATM Cell Cable System, US 6917614
Method and Apparatus for Providing Differentiated Services, WO0030307A1 and US6608816
Prioritized Virtual Connection Transmissions in a Packet to ATM Cell Cable Network, US6028860

Open source:
https://github.com/pollere/

IETF leadership:
Differentiated Service Working Group Co-Chair
RFC and Internet Draft authorship

Congressional testimony:
H.R. 850, July 13, 1999

Past Performance

Secure Role-Based System for Distributed Network Measurement NIST 70NANB18H186:
Objective of development of a proof-of-concept Distributed Network Measurement Protocol (DNMP) that leverages the emerging Named-Data Networking architecture to ensure privacy of data and role-based authorization of entities.

Efficient, Distributed Collection and Analysis of Packet Delay Data for Secure Export Department of Energy DE-FOA-0001019:
Goal of this project was to create a methodology for robustly and non-intrusively measuring the important internet performance metric of queue delay ("bufferbloat"). An approach to secure the data and its collection point from unauthorized use was prototyped with netconf.

Enhanced Polar Systems Control and Planning Segment (EPS CAPS) Air Force FA8808-13-C-001:
Subcontractor to Northrop Grumman on winning proposal and subsequent contract. Provided SMEs in support of network architecture definition, requirements, service planning.

AEHF Capabilities Insertion Program Study Air Force F04701-02-C-002:
Subcontractor to both Northrop Grumman and Lockheed Martin. Provided SMEs and authored CDRLs, network architecture document section, comparisons.

TSAT Mission Operations System (TMOS) Air Force FA8808-06-C-003:
Subcontractor to Lockheed Martin IS&GS on program with all blue performance. Key positions filled include: Chief Routing and Traffic Engineering Architect, Chief QoS Architect, DAMA/DBRA SME, IA Lead. Pollere personnel singled out for their exceptional work with Outstanding Contributor awards. Responsible for recruiting and organizing world-class Technical Advisory Group widely regarded as a key innovation in risk burn down. Responsible for Routing architecture, Quality of Service architecture, L2/L3 Interaction framework.

- Specified, carried out key studies and trades.
- Authored white papers, tech reports, CDRLs
- Requirements definition
- Worked closely with customers (e.g. ADNS, WIN-T, AF) to fulfill requirements and objectives.
- Analysis and verification of IPv6 COTS routers
- Risk burn-down activities
- Key studies of cross-layer interactions
- Network Management work including FCAPS, SNMP, NetConf
- Contributed to leading-edge trade studies on Terminal Interface Simplification and Active Path Monitoring Diagnostics
- Active in integration activities

TMOS PRDA: Subcontractor to Lockheed Martin Responsible for both the winning QoS architecture and the winning Security Architecture

SRA International, Inc:
Security Strategic Architecture Consulting Services

Strategic Partnership

Starting in 2019, partnership with Operant Networks, a small business that started in the energy sector with a Named-Data Networking product with an innovative secure ledger. Operant's capability to take prototypes to products adds value for our funders and Pollere is providing technical expertise and key personnel on Operant contracts:

Cybersecurity Intrusion Detection System for Large-Scale Solar Field: DE-FOA-0001976: A functional distributed intrusion detection system prototype, as well as secure networking and data ledger to demonstrate next generation layered, defense-in-depth, cybersecurity.

FA875119PA046: combining distributed intrusion detection with network traffic monitoring via secure NDN based sentinels to create a common operating picture for multi-domain command and control.

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