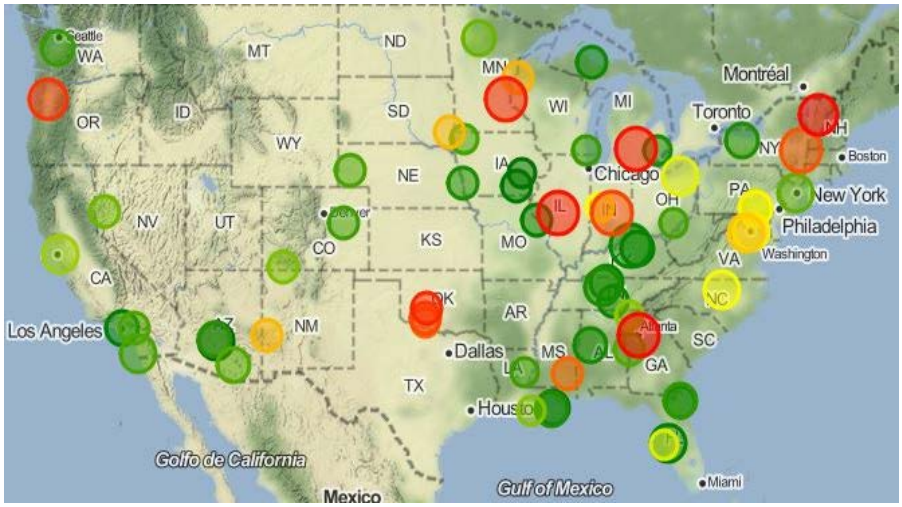
RADR

A Visual Risk Analytics Tool

Introduction

RADR is a powerful, server-based, data analytics product that fuses data from multiple sources, with sophisticated predictive and machine learning risk modeling, and an intuitive visual interface. RADR enables proactive identification of risk — namely risk, fraud, waste, and abuse behaviors — and simplifies the investigative process. RADR provides visualizations for risk propensity and their related data so that managers, auditors, investigators, and analysts can easily access data on high-risk items and focus on the highest ROI cases.

This customizable tool combines Elder Research's world-renowned data science expertise, data aggregation, and multi-layered visualization to enhance productivity in fraud, risk, and threat investigations. Predictive and machine learning models score attributes based on specific risk indicators. RADR isn't just a tool to build with — it's a turnkey solution to realize results immediately.



Getting Results

Focus on higher-risk items increases the return on investment (ROI) of labor hours by investigators, auditors, and analysts. For every labor hour invested, more issues that need to be addressed are likely to be discovered and will therefore accelerate efforts to reduce waste and abuse at a lower cost.

KEY BENEFITS:

- Improves analyst/investigator efficiency
- Table/list, bar, and pie chart views
- Geospatial mapping identifies emerging patterns
- Link analysis aids in identification of networks of related risk
- Data export and print capabilities simplify reporting
- Drill down and custom filtering simplifies investigations
- Profile based configuration supports archiving and automation

TARGET APPLICATIONS:

- Contract Fraud
- Financial Accounting Fraud
- Healthcare Insurance (Claimant/Provider)
- Dental Insurance
- Life Insurance
- Property & Casualty Insurance
- Automobile Insurance
- System Behavior Analysis
- Worker Compensation & Disability Insurance

Contact Us
www.elderresearch.com
contact@elderresearch.com
(434) 973-7673

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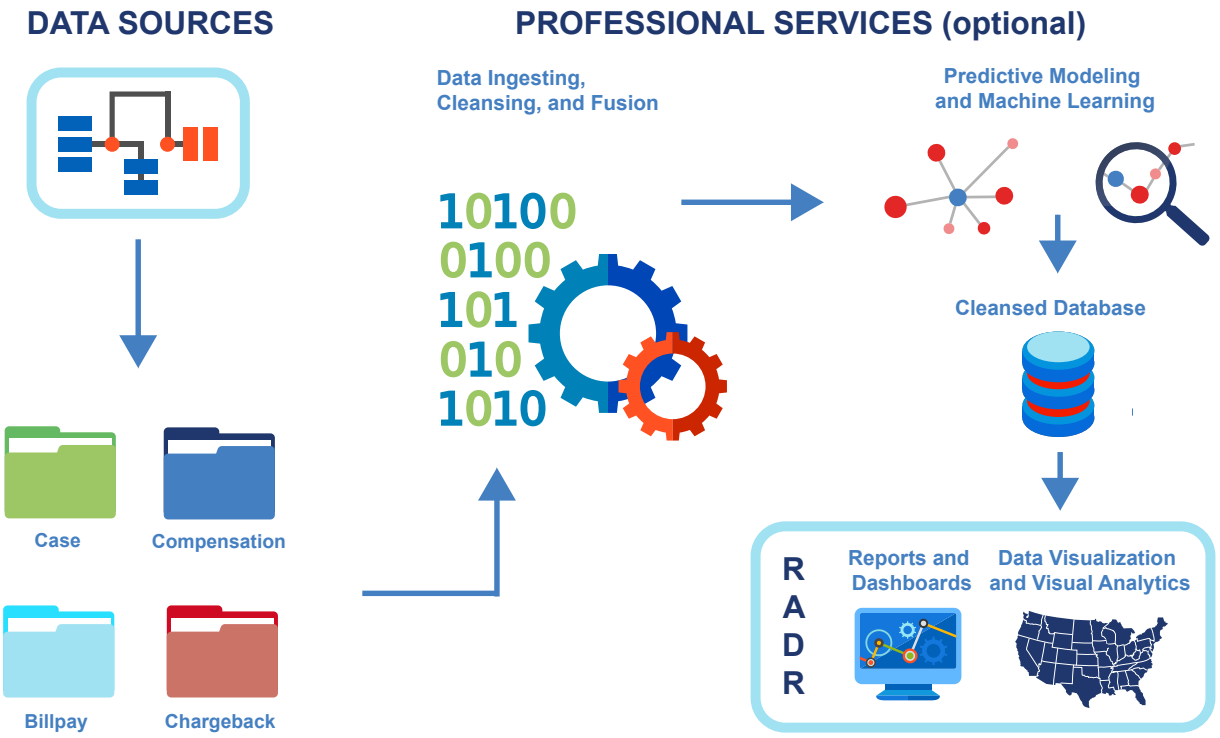
Charlottesville, VA
Washington, DC
Baltimore, MD
Raleigh, NC
London, UK

Deployment Scenarios

RADR supports several deployment scenarios as depicted in the table and diagram below:

Model	Scenario	Description
RADR-5XXX	RADR and Pre-developed Elder Research Models	Data that is publicly available is coupled with an Elder Research developed model to provide a risk view as a service (RaaS) to interested parties.
RADR-3000	RADR and Pre-developed Client Models	RADR is used in conjunction with a model developed by the client.
RADR-1000	RADR with Model Development Needs	RADR is used in conjunction with a model developed by Elder Research in a consultative manner with the client.

RADR and Analytics Flow



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RADR and Pre-developed ERI Models

RADR and Contracts/US Spending Data (RADR-5001)

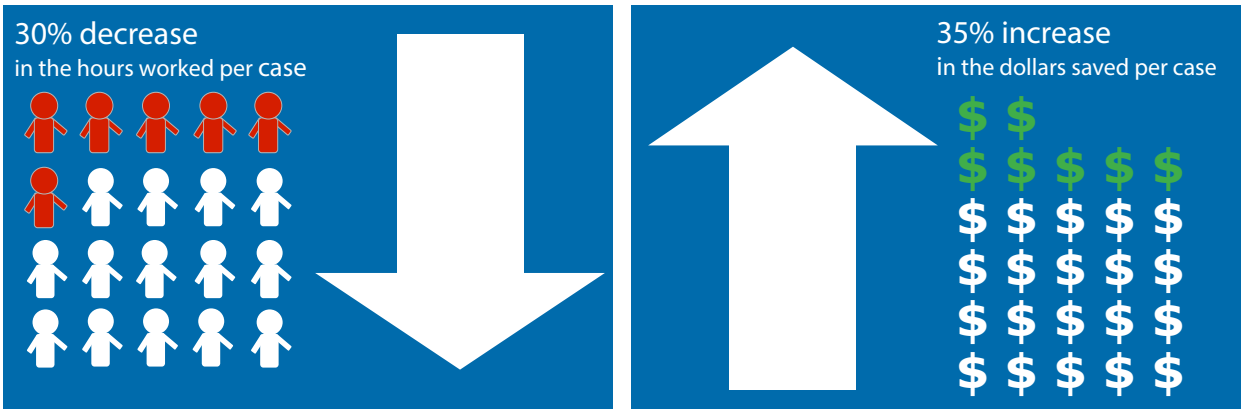
Elder Research has developed a Contract assessment model that we have applied to the publicly available US Spend data via https://usaspending.gov. Based on years of contract anomaly experience, Elder Research has applied this experience to the contract information for all federal agencies supported by USASpending.gov. For further background on USASpending.gov, please reference usaspending.gov/#/about.

Elder Research's model employs several techniques to rate contracts for potential anomalies. Elder Research's model incorporates them all into an easy to understand score. The higher the score, the more potentially anomalous the contract could be.

RADR with Model Development Needs (RADR-1000)

RADR-1000 is used in cases where a client does not have an existing model. In this case, we work with the client to develop a model and use RADR to provide the insight and visualization.

In one example, Elder Research worked with the U.S. Postal Service OIG to develop a healthcare fraud model. RADR was introduced to strategically visualize the model results, leading to the initiation of 113 investigations and aiding over $9.5 million in recoveries, restitutions, and cost avoidance. The RADR tool amplified the productivity of USPS investigators by reducing the number of hours spent on a case by 30% and increasing the dollars returned per case by 35%.



RADR with Pre-Developed Client Models (RADR-3000)

RADR-3000 is used in cases where a client has data and a model but needs a server-based visualization tool designed to provide investigative insights. In this scenario, RADR is deployed by the client following our onboarding procedures. As noted in the system requirement section, RADR supports several deployment modes – premise, cloud, Windows, Linux, and more. As a fully supported product, the client has access to administrator and user tutorials and documentation.

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RADR Features and System Requirements

Features

Data Sources

» Any SQL based data source, SQL adapter to an alternative data store, Neo4j, File based sources are also possible.

Deployment Support

» RADR is deployed as a web service and is supported for both premise and cloud (AWS, Google, and Azure)

» HTTPS Support

Visualizations

» Table/List Views

» Bar and Pie Charts

» Link Graphs

» Map Plots (ESRI and Google)

» Per user filtering

User Administration

» Internal user administration

» Active Directory link support

» Role view differentiation

Configuration

» Views driven by HOCON (a superset of JSON) based designations

Models

» Supervised, Semi-supervised, unsupervised, metrics-based, statistical entity resolution, graph DB, network analysis, text mining, and sentiment analysis.

System Requirements

Operating System Support

» Microsoft Windows Server 2016, 2012, 2012 R2, 2008 R2, Windows 7,8, and 10.

» Amazon Linux 2, CentOS 7.3+, Ubuntu 16.04 LTS, Red Hat Enterprise Linux (RHEL) 7.3+, Oracle Linux 7.3+

Nominal System Needs

» 4 cores, 2.0 GHz or higher CPU

» 32G RAM

» 50 GB disk available

» Performance may vary lower (building development or staging systems) or higher (building multi-1000 user-based systems). Consult ERI for more detailed guidance.

Cloud/Virtual Environments

» RADR has been designed to support virtual environments. Current support includes: Citrix, Hyper-V, VMWare, AWS, and Google Cloud.

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