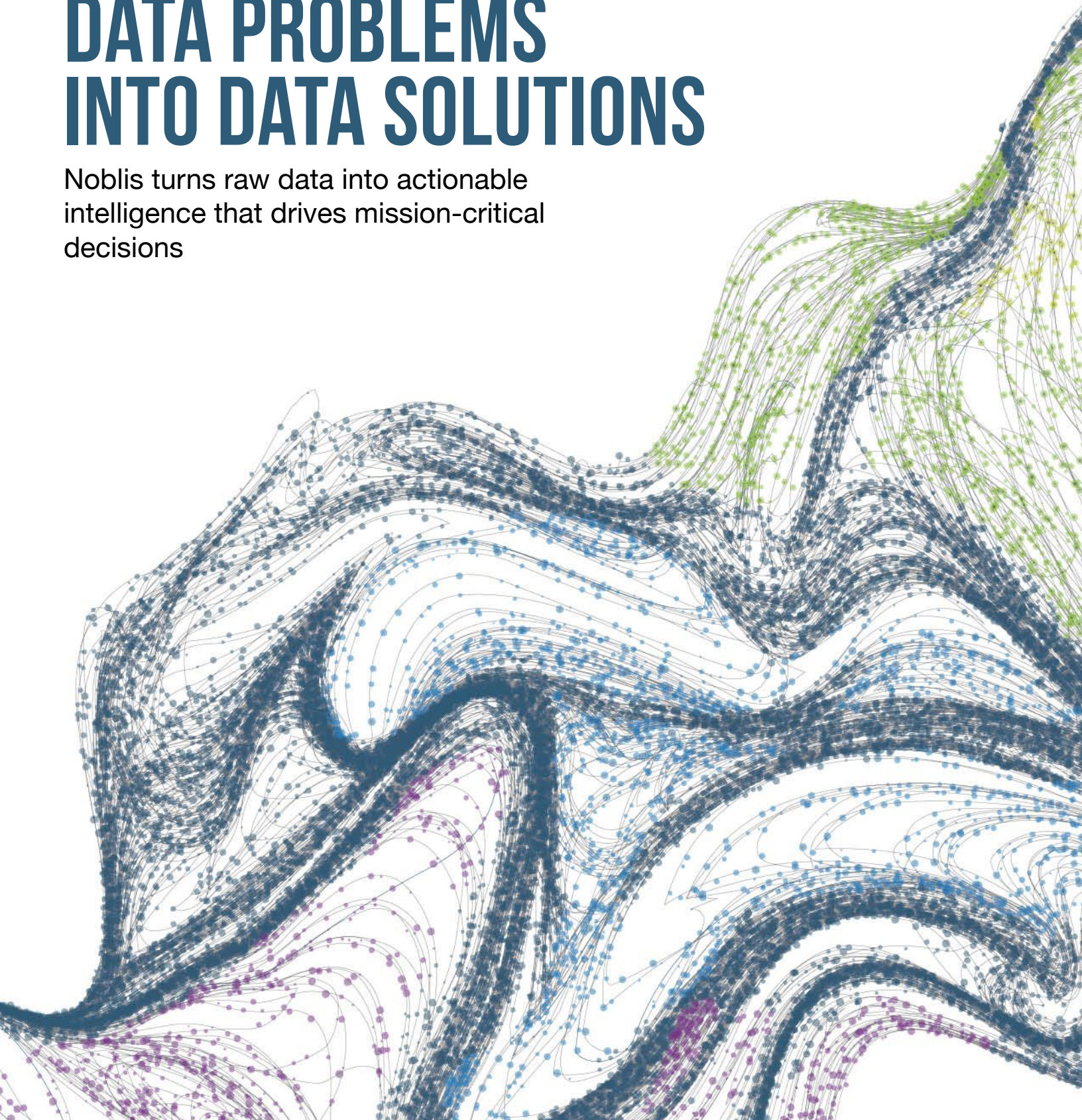# noblis

TRANSFORMING DATA PROBLEMS INTO DATA SOLUTIONS

Noblis turns raw data into actionable intelligence that drives mission-critical decisions

SOLVING BIG DATA CHALLENGES THAT MATTER

Big data challenges are rapidly becoming more difficult, more common, and by default, more daunting. Noblis leverages our internally sponsored research to develop essential insights into emerging technologies that support missions that matter. Our end-to-end approach to advanced analytics systematically moves stakeholder data through a repeatable process, and effectively addresses the technical components of complex problems to determine a useful strategic path. Because we have our own high performance computing platforms, we can ensure our strategic paths are implementable, and your data investments will result in intelligent decisions. Our interdisciplinary team helps clients harness the power big data can bring- regardless of the complexity of data.

OUR PROCESS

Our end-to-end approach to advanced analytics systematically moves the stakeholder data through a repeatable process.

1 REQUIREMENTS
Use Case Identification and Value Analysis

2 ANALYTICS
Data Capture, Data Transfer, and Data Preparation

3 DATA ACQUISITION
Tools, Techniques, and Platforms

4 POST PROCESSING
Business Value Extraction and Visualization

1 Requirements. Noblis works with stakeholders to identify use cases and business value with the understanding that these elements drive the architecture of the big data solution.

2 Analytics. Combining our understanding of the customers' mission needs with deep domain expertise enables Noblis to rapidly identify, acquire, and exploit the right data for the task.

3 Data Acquisition. Expertise in modern, predictive analytics, automation techniques, and high performance computing, including HPC clusters, supercomputers, and cloud-based supercomputing.

4 Post Processing. Noblis extracts business value from the raw output of the analytics. This step is iterative, resulting in multiple outputs that depend on use cases identified in the requirements phase.

BIG DATA
by the numbers

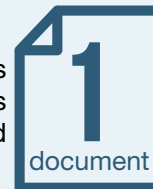A hybrid approach to high performance computing.
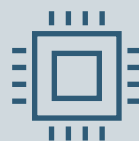
Ran a computation on **OVER 35,000 CPU CORES** in the cloud for 20 million core hours

Allows researchers to find **1** document out of half a million in 3 clicks

Built systems that can scan over **3 TB** of network data per hour for cyber-threats

Analyzed graphs with over **30 MILLION NODES** in real time

Can detect a pathogen in **UNDER 30 MINUTES**

Designed an algorithm that cracks passwords in **0.02** seconds

OUR CAPABILITIES

END-TO-END ANALYTICS SOLUTIONS

Noblis has deep experience in Cyber Threat Intelligence and helps clients, through a combination of expert analysts and state-of-the-art tool and capability development, not only know what's going on in their network, but can help predict upcoming attacks and provide global geo-political context that motivate many of the most critical cyber attacks.

CYBER ANALYTICS

Noblis helps its clients detect anomalies within their network by utilizing data science and machine intelligence. Our solutions provide a front line defense against threats from both insiders and external adversaries, and have been applied to networks scaling into the hundreds of thousands of users.

HYBRID HIGH PERFORMANCE COMPUTING

Because our solutions are customized to the data challenge at hand, we offer clients a "hybrid" approach to our HPC capabilities to ensure greatest value. Our HPC systems can handle parallel applications that cannot run well on conventional systems. They excel at tasks such as pattern matching, scenario development, behavioral prediction, anomaly identification, and graph analysis.

DATA MANAGEMENT

Noblis has deep experience in managing complex information lifecycles. We understand best practices and industry standards for securing and working with data- from data governance and security, to system architecture design, to handling data in motion and at rest. Noblis employs a variety of platforms, policies and provides guidance best suited the specific source, nature and use of invaluable data resources.

WHY NOBLIS?

Coding, Testing, and Running Your Big Data Solutions

Noblis equips data scientists and domain experts with the right tools and platforms to support big data projects. Our high performance computing (HPC) platforms offer a level and range of power that is rarely found outside of federal laboratories and academic systems. Not only do Noblis experts help design custom strategic plans, we offer our clients the ability to pilot and test data programs through our HPC platforms. Noblis can code, test, and run your custom program to ensure mission effectiveness. Noblis provides more than just advisory support for your data science program. Our data scientists and analytics platforms allow you to answer your complicated data questions from the beginning.

CLIENT SUCCESS STORIES

Behavior and Network Cyber Analytics

Noblis is supporting a federal agency's mission by developing and operating a behavioral analytics capability focused on detecting fraudulent user access of web self-service applications and information. Our experts leverage transaction log information integrated with other sources for anomaly detection and couple this with forensics research to classify suspicious activity and misuse. We are also supporting development of an insider threat analytics capability.

Establishing an Advanced Data Analytics Lab (ADAL) for the SSA

Noblis worked with the Social Security Administration (SSA) to develop a series of models to help identify the skill sets, lab processes, and tool sets needed to effectively govern and run the ADAL. Noblis then assisted lab management in developing initial big data analytics tests and visualization experiments.

INTEGRATING HPC PLATFORMS WITH ROBUST DOMAIN EXPERTISE

Behavioral Analytics	Knowledge Extraction	Hybrid HPC	Cyber Offense
Visualization	Machine Learning	Food Safety	Forensic Sciences
Cyber Defense	Infectious Diseases	Aviation Safety	Threat Finance
Rapid Prototyping	Biometrics	Cryptocurrencies	
Cryptography	Traditional HPC	Compression	

DOING WHAT'S RIGHT AND WHAT WORKS FOR OUR CLIENTS

Noblis fosters a culture of collaboration. Through our Centers of Excellence (COEs), we are connecting our staff so that they may better serve our clients. The COEs reach across domain areas and our three companies to ensure the right capabilities, people, tools, and expertise are applied to our work. This enables us to offer every client the best solutions to fit their needs and challenges.

ABOUT NOBLIS

Noblis is a nonprofit science, technology, and strategy organization that brings the best of scientific thought, management, and engineering expertise with a reputation for independence and objectivity. We work with a wide range of government and industry clients in the areas of national security, intelligence, transportation, healthcare, environmental sustainability, and enterprise engineering. Together with our wholly owned subsidiaries, Noblis ESI and Noblis NSP, we solve difficult problems of national significance and support our clients' most critical missions.

WORKING WITH US

Government agencies can access Noblis through a variety of contracting mechanisms. We have several IDIQ contracts in place and available to civilian and DoD agencies. We are also a GSA Schedule holder. For a full list of vehicles, visit **noblis.org.**

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For the best of reasons

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