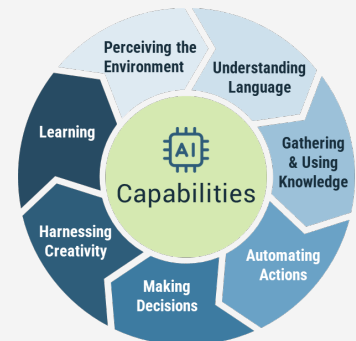# Artificial Intelligence at CMS & Beyond
Explainability, Responsibility, Scalability

Noblis provides thought leadership and technical implementations across all seven AI capability for a wide variety of federal customers. Within the Centers for Medicare and Medicaid (CMS), our experts are marrying human centered design (HCD) with advanced predictive and prescriptive analytics to create explainable, responsible, and scalable solutions.

CMS Pilots in the AI Explorers Program

OPIOID PILOT

Noblis is engaging in R&D to investigate applications of multivariate time-series classification (MTSC) alongside potential non-time-series models. Our experts are using their wide experience and familiarity with CMS' data with Noblis' extensive research program to deliver cutting-edge AI and Lean-Agile expertise.

OPERATIONALIZING TIME TO HIRE INSIGHTS WITH AI

Noblis is providing HCD, machine learning, cloud architecture, explainable AI, and data engineering expertise to the Office of Human Capital (OHC) and the Office of Information Technology (OIT) on an AI Pilot to operationalize data for better understand of the time required to hire across the Agency.

CMS Enterprise Data Encryption

CHALLENGE
To effectively sustain compliance for data encryption, CMS Leaders, System owners, and Data owners need up-to-date curated information to understand posture and prioritize efforts.

SOLUTION
The Noblis team combined the use of enterprise documentation, public information, and systems data alongside subject matter expertise and iterative user feedback to build a set of tools delivering a comprehensive look across the Agency's data encryption to autonomously curate improvement areas with the highest impact.

OUTCOME
Developed foundation for future AI initiatives across the CMS Enterprise. Provided CMS executives and senior managers new insights into the CMS organization, such as what types of PII are begin stored on which systems within the agency, including sensitive PII, which was not being tracked by CMS systems. This information was needed to address increasing encryption requirements for sensitive PII, and this project won the 2021 G2X FedHealthIT Innovation Award for its technical approach.

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Knowledge Augmentation through Graph & AI Research

CHALLENGE To create knowledge management services that bridge the gaps between fully structured and unstructured data sources – to naturally reflect how CMS works, discusses, and shares information.

SOLUTION Noblis uses natural language processing, cloud computing, and knowledge graphs to develop services focused on data integration and seamless information delivery - Knowledge Management Platform (**KMP**), Knowledge Graph Search Engine (**KGSE**), and Knowledge Spark (**KS**).

OUTCOMES **KMP** utilizes AI tools to collect, label, and associate structured and unstructured information sources to operationalize their data for use in customizable user interfaces. **KGSE** applied a proprietary framework for mapping heterogeneous data sources to ontologies describing CMS systems, business units, and repositories to create an integrated knowledge graph with millions of facts about the agency, browsable and filterable through an intuitive user interface. The team demonstrated customer-defined use cases showing how Knowledge Graphs can keep the CMS Chief Technology and Chief Information Officers more informed. **KS** scours graph stores of organizational data to understand the context of information that is available. KS then listens for users to interact via chat or voice requests, determines their intent, and delivers tailored results as interactive 'knowledge cards.' Noblis shared KS with the Office of Strategy, Performance, and Results with use cases to demonstrate closing gaps in one's understanding of the agency's systems during real-time conversations.

Across the Federal government

Joint Artificial Intelligence Center (JAIC) – Within the Department of Defense (DoD), Noblis is providing technical expertise strategic guidance paired with our vast Research & Development experience to accelerate the delivery of AI-enabled capabilities, drive applied impacts of AI within the DoD, and to orchestrate DoD AI initiatives to expand Joint Force advantages.

Noblis currently has 18 funded AI and ML Research Investigations for topics like AI Explainability, Intent Engines, Genetic Algorithms, and more… six of which include our Health Innovations Account team members.

NAICS Codes

541611	541990	541330	541711
541618	541690	541380	541712

Awards and Recognition

2021 G2Xchange FedHealthIT Innovation Award for Noblis' work on CMS Enterprise Data Encryption (CEDE)

Two-time Technology in Leadership Noblis Awardees