



National
Secure
Data
Service



FROM INSIGHT TO INNOVATION: PROJECTS SHAPING A FUTURE NATIONAL SECURE DATA SERVICE

This infographic highlights the development of a prototype service for the National Secure Data Service (NSDS).

America's DataHub Consortium (ADC) is a private-public partnership advancing innovative solutions for better data service. This project was supported by ADC on behalf of the National Center for Science and Education Statistics in the U.S. National Science Foundation.

AI DATA HARMONIZER*

Data processing consumes a disproportionate share of statistical workflows due to persistent issues with data consistency, integrity, and usability, challenges that are increasingly amplified by the growing use of nontraditional data sources that lack standardization.

Project Objectives



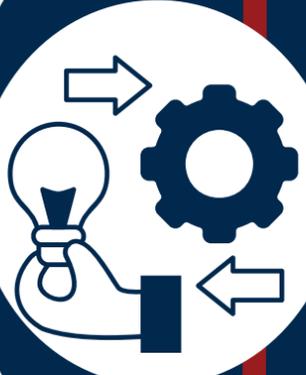
- Develop AI-driven tools and services to automate and improve the efficiency of data preparation, processing, and integration across traditional and non-traditional data sources, including survey, administrative, private sector, and geospatial data.
- Assess technical and infrastructure needs to support the use of AI within federal statistical workflows.
- Identify best practices for the use of AI in data processing and standardization, in alignment with federal statistical standards.

Lessons Learned



- AI improves efficiency by automating data cleaning and validation across diverse and emerging data sources.
- Effective AI use requires balancing data privacy with utility, maintaining human oversight, and transparent documentation of AI processes.
- Representative training data, bias correction, and fairness audits are essential for mitigating algorithmic bias.

From Pilot to Implementation



- Provides five AI tools to expedite and streamline the production of high-quality statistics and data products: metadata extractor, free-text encoder, data harmonizer, tabular data extractor, and missing data assistant.
- Efficiently improves the usability and linkage of diverse data through AI-driven standardization methods to enhance comparability across data formats.
- Strengthens interagency collaboration and interoperability through shared, scalable approaches to applying AI for standardizing nontraditional and emerging data types.



Visit <https://www.americasdatahub.org/> or scan the QR Code to learn more about this NSDS project and support our efforts for the future of evidence building.

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*Working title for tool created under Artificial Intelligence for Enhancing Data Quality, Standardization, and Integration (AI-DQSI-24)