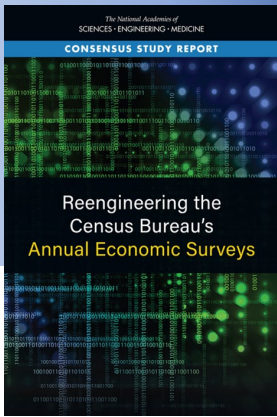


# Annual Integrated Economic Survey (AIES) Update


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# Quick Refresher





- National Academy of Sciences (NAS) recommended changes to our annual economic programs
- Main drivers of this effort include:

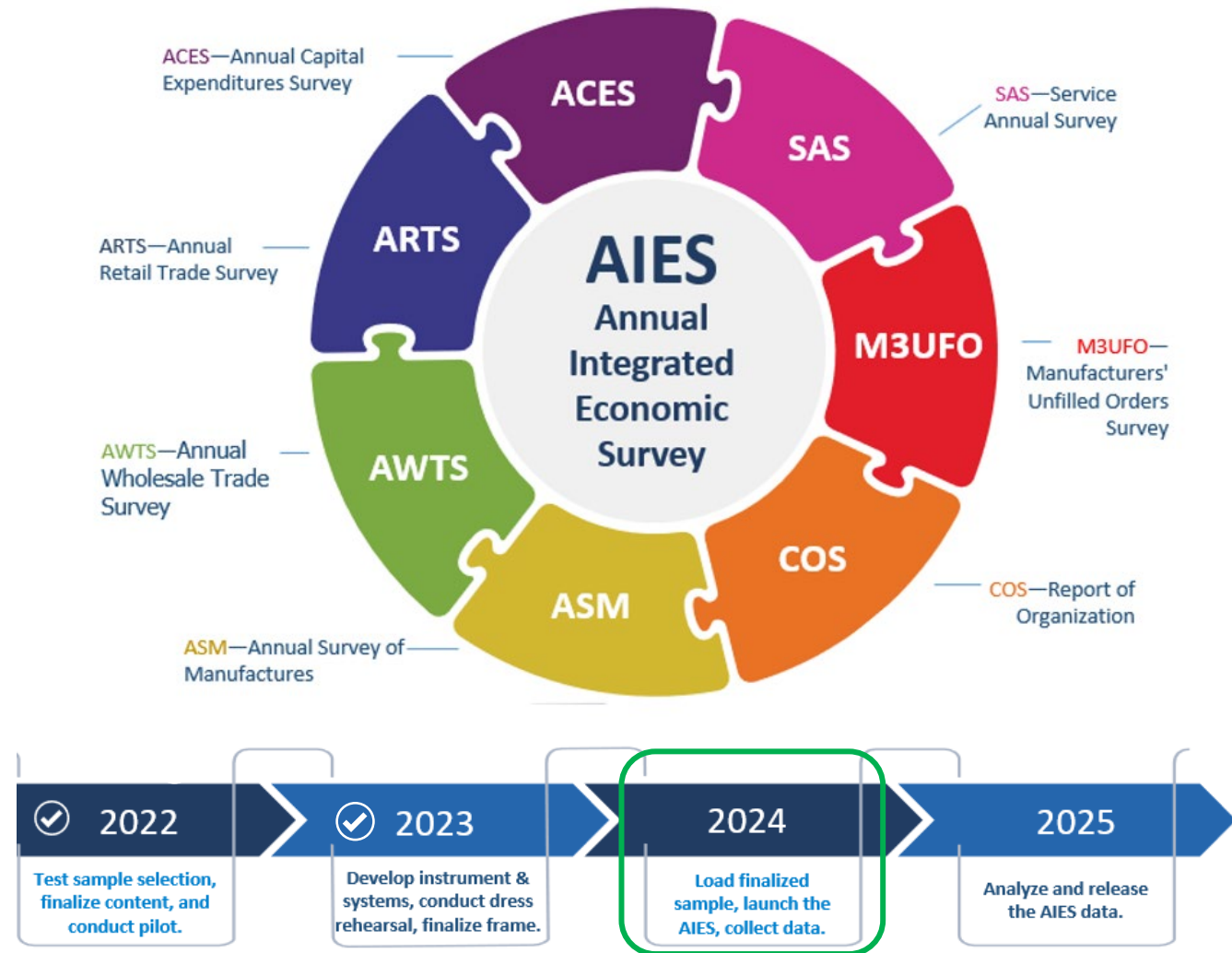
 Meet data needs—timely, granular, standardized

 Declining budgets

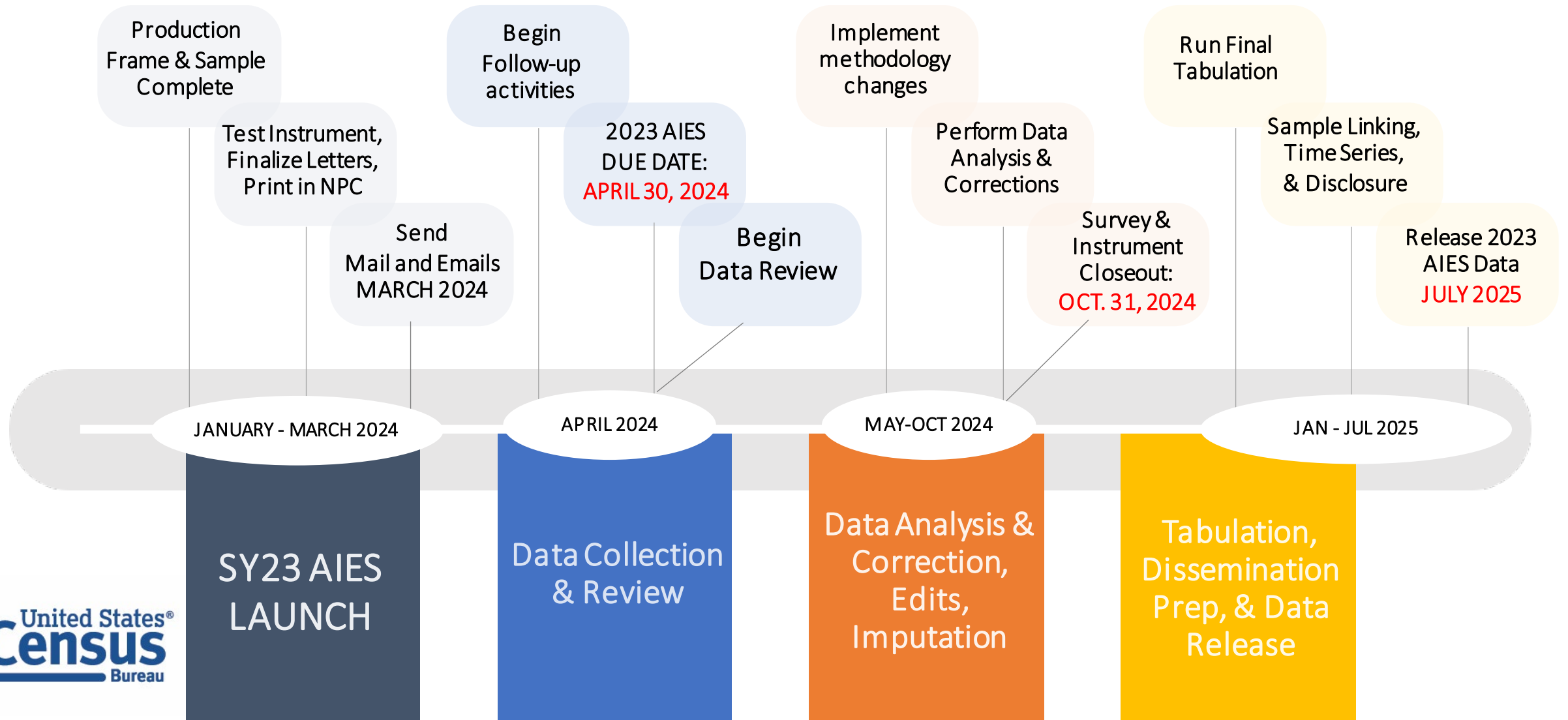
 Improve efficiency—consistency across programs (content, processes, systems)

 Declining response rates

 Stay relevant



# 2023 AIES Roadmap



# AIES NAICS Coverage

## AIES includes coverage of the following NAICS sectors of the U.S economy:

11: Agriculture, Forestry, Fishing and Hunting*	52: Finance and Insurance*
21: Mining, Quarrying, and Oil and Gas Extraction	53: Real Estate and Rental and Leasing
22: Utilities	54: Professional, Scientific, and Technical
23: Construction	55: Management of Companies and Enterprises
31-33: Manufacturing	56: Administrative and Support, and Waste Management and Remediation
42: Wholesale Trade	61: Educational Services
44-45: Retail Trade	62: Health Care and Social Assistance
48-49: Transportation and Warehousing*	71: Arts, Entertainment, and Recreation
51: Information	72: Accommodations and Food Services
81: Other Services (except Public Administration)*	

\* Denotes certain industries are out-of-scope

## Expanded NAICS coverage for:

113: Forestry and Logging	6111: Elementary and Secondary Schools
114: Fishing, Hunting and Trapping	6112: Junior Colleges
115: Support Activities for Agriculture and Forestry	6113: Colleges, Universities, and Professional Schools
21: Mining, Quarrying, and Oil and Gas Extraction	8131: Religious Organizations
23: Construction	81393 – Labor Unions and Similar Labor Organizations
482: Rail Transportation	81394: Political Organizations
55: Management of Companies and Enterprises	

## Additional data items available for expanded industries:

Revenue	First Quarter Payroll
Employment	Total Operating Expenses
Payroll	Capital Expenditures

# Program Modernization

## Where We've Been

Industry focused

Overlapping content

National estimates

Independent samples

Different reporting units by program

Inefficient processes and operations

Varying classification systems



## Where We're Going

Respondent centric

Alignment to enterprise programs

Consolidated processing systems

Coordinated collection and instruments

Standardized and rotating content

Integrated frame and sample

Leveraging alternative data

Holistic company analysis

Economy-wide data products



# Respondent Centric Research & Testing

	Phase I Pilot	Phase II Pilot	2022 AIES (Phase III)	Usability Testing
Timeline:	<b>Mailed:</b> March 21, 2022 <b>Due Date:</b> June 15, 2022 <b>Closeout:</b> Sept 2022	<b>Mailed:</b> Feb 22, 2023 <b>Due Date:</b> April 17, 2023 <b>Closeout:</b> Sept 2023	<b>Mailed:</b> Sept 7, 2023 <b>Due Date:</b> Oct 17, 2023 <b>Closeout:</b> Dec 2023	<b>Start:</b> Sept 27, 2023 <b>Finish:</b> Nov 30, 2023
Sample Size:	78 companies	868 companies	~8,200 companies	Up to 30 in-person interviews
Goals:	<ul style="list-style-type: none"> <li>Test that companies could report data for the questions we were asking</li> </ul>	<ul style="list-style-type: none"> <li>Test all collection units in one survey</li> <li>More accurate measures of burden</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate instrument performance</li> <li>More insight on burden</li> <li>Maximize enterprise partnerships</li> </ul>	<ul style="list-style-type: none"> <li>Test design of new survey instrument to gather first impressions</li> </ul>

# Alignment to Enterprise Programs

## Infrastructure Modernization

### Migration to cloud

Prioritizing cloud computing to improve system accessibility and scalability, aligning with organizational growth and digital transformation goals

### EDL (Enterprise Data Lake)

Cloud-based enterprise solution to replace current Census hardware platforms for survey operations, research analytics, processing, data product creation and innovation, data dissemination, and archiving

### DICE (Data Ingest and Collection for the Enterprise)

Manages and integrates enterprise systems and services

Shared platform for receiving external data and conducting census/surveys cost-effectively

### CEDSCI (Center for Enterprise Dissemination Services and Consumer Innovation)

Enterprise-wide data dissemination vehicle aimed at housing Census's vast library of data products into one source

Replaced American FactFinder (AFF) in 2020

### MDR (Metadata Repository)

Central repository of survey metadata

# Integrated Frame & Sample

## Initial Frame & Sample

**Production frame extracted at the end of 2023 including updates from the 2022 Economic Census**

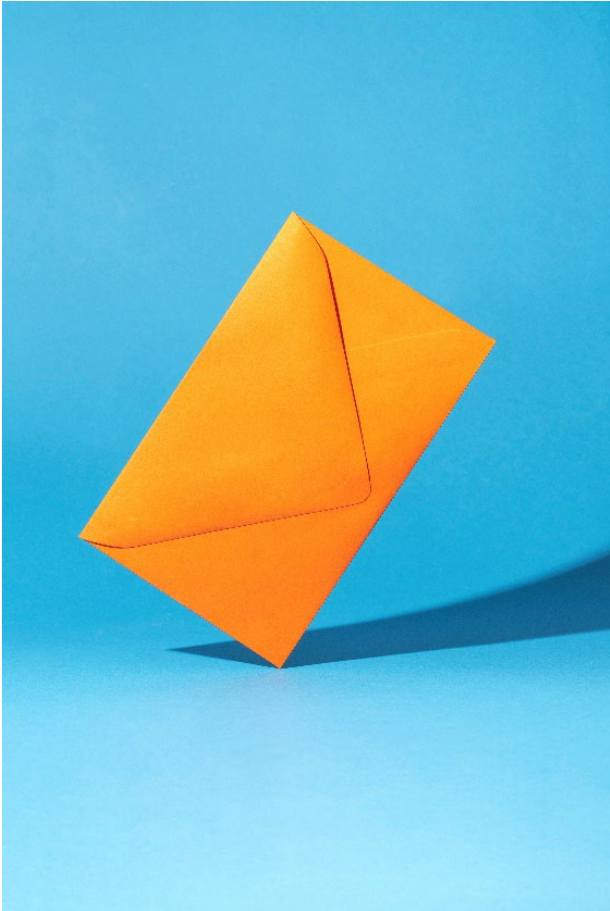
**Production sample finalized in January of 2024**

- Sample included over 370,000 companies, which accounts for over two million establishments.
- Sample reselected every 2-3 years
- Implemented sub-sample for the Manufacturing sector to reduce burden



# Integrated Frame & Sample

## AIES Launch



Mailed	# Companies	# Establishments
Multi-units	99,860	1,832,638
Single-units	272,929	272,929
<b>Total</b>	<b>372,789</b>	<b>2,105,567</b>

- Mailed initial letters to multi-unit and single-unit companies with information to respond starting March 15<sup>th</sup>
- Sent emails to over 260,000 companies.

# Consolidated Processing Systems

## New Econ Systems/Tools

### **CEDR**

*(Central Enterprise Data Repository)*

Repository for all reported data from economic programs

Hub for accessing existing datasets, fostering new data products and identifying data gaps

### **SPACE**

*(Standardized Processing and Analyst Correction Environment)*

SPACE encompasses all of the individual processing databases

AIES is first, others to follow over next several years

### **SPACE-UI**

*(SPACE – User Interface)*

Interactive user interface for making data corrections

### **QFLOW**

*(Q-based Expert System)*

Modular infrastructure that manages the data (edits, imputation, estimation, tabulation, etc.)

### **AIR**

*(Analyst Intelligence Resource)*

Tableau tool offering real-time analytical view of data at macro & company levels with drill-down capability to micro levels

### **MPS**

*(Macro Processing System)*

Function-based, parameter driven macro system

Written in Python

Minimizes duplication of coding

# Consolidated Processing Systems

## Editing & Imputation

### **Innovative Editing and Imputation Procedures**

- Developed editing and imputation methodologies built off of best prior practices for handling missing or inconsistent data

### **Standardized Common Practices**

- Where possible, adopted standardized editing and imputation practices across all trades, ensuring consistency

### **Modernizing Techniques**

- Integrate cutting-edge technology to modernize data editing processes and consolidated workflows
- Modular-design intended to ease the burden of integrating other programs moving forward

# Holistic Data Analysis

## New Approach to Data Review

### Macro-Down Perspective

- Shift focus from micro-level to macro-level
- Identify overarching trends and patterns instead of getting lost in individual records

### Introducing Company Analysts

- In addition to traditional industry analysts, appoint dedicated analysts to evaluate companies in their entirety, considering all relevant factors
- Aim is to improve the understanding and impact of larger companies on published data products

### Adopting New Tools and Processes

- Leverage advanced data analytical tools to enhance efficiency
- Streamline processes to facilitate quicker and more accurate data analysis

# Macro Processing

## Tabulations & Disclosure

### **Tabulations will be fully metadata-driven**

- Provides a new way to create custom tables more efficiently

### **Unified Disclosure Methodology**

- Implementing a single disclosure methodology (cell suppression) across all trades and all data tables

### **Streamlined Publication Levels**

- Optimized and simplified data publication levels where possible

# Economy-Wide Data Products

## New Features

### **Geographic data**

- Subnational data for all trades for the first time

### **Quality measures provided for all published cells**

- No automatic quality suppressions on data

### **Estimates displayed in thousands of dollars**



# Economy-Wide Data Products

## Data Products

### Publication Outline

- Two Application Programming Interfaces (API)
- Core data multi-sector and NAPCS tables on [data.census.gov](https://data.census.gov)
- CSV tables available on AIES website
- Ingest of AIES data in Federal Reserve Economic Data (FRED)
- Data visualizations
- Begin releasing data in July 2025



# Economy-Wide Data Products

## Data Visualizations

- Main interactive Tableau dashboard
- Rotating visualizations
- Dynamic one-time products
- Industry-specific data products

# AIES Time Series

## **AIES introduces need for substantial time series operations**

- Updating all time series to a 2017 NAICS basis
- Changing methodology to have all estimates measure employer only firms
- Benchmarking to 2017/2022 Economic Census
- Linking historic annual time series to the new sample

# AIES Time Series

## NAICS Timeline

Survey/Sector	Current State 2022 Survey Year Data	2023 AIES* (Summer 2025)	2025 AIES
ASM/M3UFO/Manufacturing	2017 NAICS**	2017 NAICS	2022 NAICS
ARTS/Retail	2012 NAICS	2017 NAICS	2022 NAICS
SAS/Services	2012 NAICS	2017 NAICS	2022 NAICS
AWTS/Wholesale	2012 NAICS	2017 NAICS	2022 NAICS

\* 2023 AIES release includes benchmarking to the 2022 Econ Census (2017 NAICS)

\*\* ASM is not released in the Economic Census year, 2021 ASM data on 2017 NAICS basis

# AIES Collection Update

As of June 4, 2024:

Total Mailed	Total CKIN	Total CKIN %	SU Mailed	SU CKIN	SU CKIN %	MU Mailed	MU CKIN	MU CKIN %
372,789	158,070	42.40%	272,929	113,354	41.60%	99,860	44,536	44.60%

	Days Past Mailout: 80							
Survey	AIES SY23	ARTS SY22	AWTS SY22	ACES SY22	SAS SY22	COS/ASM SY21	M3-UFO SY22	EC SY22
Due date	4/30/24	3/21/23	2/22/23	4/25/23	3/21/23	3/10/22	5/18/23	3/15/23
Check-In %	42%	43%	53%	43%	38%	43%	53%	37%
Access Survey %	62%	52%	61%	50%	49%	57%	58%	56%

# Future Initiatives/Objectives

## Finding optimal balance between collecting useful and relevant content and mitigating response burden

- Stakeholder discussions are underway
- Rotating modules AND rotating content
- Need to make way for more relevant economic questions/topics (AI, ocean economy, etc.)

## Developing adaptive collection strategies

- Subsampling small and medium respondents
- Incorporating modeling techniques
- Utilizing alternative data sources



# Future Initiatives/Objectives

**Incorporating research, paradata, and respondent feedback into improvements for the 2024 instrument**

## **Integration of AIES and the Economic Census?**

- How will these two programs complement each other moving forward?
- What is the long-term vision for these two programs?
- Working group has been commissioned

# Questions / Information

**External Website:**

[www.census.gov/aies](http://www.census.gov/aies)

**General Email:**

[econ.aies.help@census.gov](mailto:econ.aies.help@census.gov)

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