TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS

SUBJECT: Strategic Management of Acquisition Data and Information

1. Introduction

The United States Government is the largest buyer of goods and services in the world. However, due to the decentralized nature of Federal acquisition processes and systems, the acquisition workforce is not able to fully utilize the volume of data collected across the Federal enterprise for more informed procurements, resulting in time and cost burdens on both the workforce and industry.

To address this issue, the Office of Management and Budget (OMB) seeks to promote Hi-Definition (Hi-Def) acquisitions where agencies are able to acquire supplies or services using relevant acquisition data that is easily accessed and available when it is needed. Government-wide acquisition initiatives such as Category Management have established that there is significant commonality in the goods and services procured across the enterprise. It follows that the strategy to collect, share, and use procurement data should also extend beyond agency-specific strategies and systems.

Agencies should no longer view acquisition data as a singular agency asset, but rather as an asset that is critical to support the mission of the Government. As such, agencies should be prepared to collect and share the data accordingly.[1]

Important work is already underway in this area through key data modernization efforts resulting from OMB Circular A-130,[2] The Foundations for Evidence-Based Policymaking Act of 2018,[3] and the Open, Public, Electronic and Necessary Government Data Act.[4] However, these efforts address agency-specific data requirements and do not speak to making data available centrally across the entire Government. This Circular aims to address that gap by establishing a centralized data management policy framework to promote acquisition data interoperability, data sharing between agencies, and enterprise-wide data analytics; and a Hi-Def Environment (HDE) for Federal users to enable access to critical data, tools, and resources for acquisition-related decision-making.

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[1] For purposes of this Circular, "agency" is defined as in 41 U.S.C. § 133.
[2] Office of Mgmt. & Budget, Executive Office of the President, Circular No. A-130, *Managing Information as a Strategic Resource* (July 28, 2016), https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/OMB/circulars/a130/a130revised.pdf.
[3] Pub. L. No. 115–435, https://www.congress.gov/bill/115th-congress/house-bill/4174/text.
[4] Pub. L. No. 115–435, title II, https://www.congress.gov/bill/115th-congress/house-bill/4174/text.

2. Purpose

Using relevant acquisition data as a strategic asset throughout the acquisition lifecycle facilitates successful contracting outcomes. The Federal Government has taken significant steps to improve the collection and use of data related to contracting transactions, including amounts obligated, information about how contracts are awarded, and the identity of the awardees.

However, other important acquisition-related data and information are not being shared Government-wide. For example, contract line item (CLIN) pricing information[5] may be kept in agency-specific contract writing systems, in one or more payment platforms, or in internal or external databases that are not easily accessible. All stakeholders from across the Federal Government may not have access to key information for contract planning, negotiations, and other critical contract management functions. Most commonly, the information resides in disparate agency systems or includes non-standardized data elements and definitions that impedes interoperability across agencies. In many cases, agencies have agreed to terms and conditions with their contractors or shared service providers that prohibit the sharing of their acquisition data with other Government agencies, even though the data or information is not classified or proprietary and sharing would not otherwise be prohibited by law.

To address these issues and the broader landscape of acquisition data management, OMB is creating a Hi-Def centralized data management policy framework to promote data interoperability, the sharing of acquisition data between agencies, and enterprise-wide data analysis. This framework will be supported and enabled by the HDE, the technical architecture used to consume and make acquisition data collected across the Federal enterprise accessible in a secure and scalable solution. The HDE will:

- serve as a centralized access point and aggregator of acquisition data;

- provide Federal users with a secure entry point to access acquisition data collected by disparate systems and processes across the enterprise; and

- leverage existing architectures, agency offerings, and established governance bodies and processes to the greatest extent possible to avoid duplicative efforts.

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[5] The term "line item pricing" as used in this Circular broadly covers the price the Government pays for a commodity or service. Under the current systems landscape, pricing at this level can be complex (e.g., pricing conditions that roll up to a line item price, line item discounts, and premiums).

Data ingested into the HDE will be phased based on agency data sharing readiness, Hi-Def targeted outcomes, and Government-wide data use cases prioritized through the data governance process.[6]

The data collected and used through the HDE will allow stakeholders[7] to understand acquisition community needs, opportunities for data and process improvement, and future program and policy requirements through interagency governance structures including existing committees, such as the Procurement Committee for E-Government and other working groups. The data collected through the HDE is intended for internal Federal use only and will be secured and used in accordance with law. Any requests for release of information to non-governmental sources will be managed in accordance with applicable laws and regulations.

3. **Policy**

Agencies should regard acquisition data as a Government asset, and should utilize acquisition data management practices that promote collection, interoperability, scalability, sharing, and usability across the Government.[8] These practices should make acquisition data easily accessible when it is needed to inform decision-making throughout the acquisition lifecycle. Agencies should begin to establish the infrastructure and relevant policies needed to collect and share data into the HDE, and identify appropriate security and privacy controls to ensure agency data is protected from misuse in a common environment.

   a. Data Collection – agencies shall identify opportunities to improve the collection and sharing of both structured and unstructured acquisition data, including but not limited to prices paid data, contract files, CLIN data, terms and conditions, sub-contracting plans, survey data, purchase card data, and other relevant data sources as identified by OMB.[9]

   b. Data Sharing – agencies shall:

      i. Continually facilitate adoption of new and emerging technologies to support the ability for cross-agency data sharing, including but not limited to the use of Application Programming Interfaces (APIs), data exchange platforms, and Extract-Transfer-Load tools;

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[6] The Comprehensive Hi-Def Data Governance Plan will be established within one year of this Circular and is further detailed in § 7.b.

[7] Hi-Def Stakeholders are further described in Appendix G.

[8] Acquisition Data Management best practices will be posted and updated on the Hi-Def website at *The Hi-Def Initiative*, https://acquisitiongateway.gov/Hi-Def.

[9] Further guidance on targeted datasets and the required context will be issued by OMB on a phased basis, based on responses to the Agency Baseline Assessment outlined in § 7.a and the Hi-Def annual planning process outlined in § 4a.i and § 4.b.i.

ii. Identify and take steps to update agency-specific policies or operational practices, as necessary, to remove any prohibitions or limitations on the collection and sharing of acquisition data within and among agencies in the Federal Government, consistent with applicable law;

iii. Include clauses, as appropriate and consistent with applicable law, in new contracts to inform contractors that acquisition data included or generated in connection with the contract by either the Government or the contractor may be shared within and among agencies of the Federal Government;

iv. Review and maintain protocols to protect against the unauthorized release of data; and

v. Identify and mitigate data sharing risks as outlined in § 3.c.

c. Data Risk Management – agencies shall:

i. Consistent with OMB Circular A-130,[10] identify and mitigate, either internally or in coordination with OMB, information security, privacy, records management, and supply chain security issues for data sharing activities throughout the acquisition data lifecycles so that risks are appropriately identified and mitigated;

ii. To the maximum extent possible, align acquisition data sets with data security standards, which shall be determined by the Hi-Def Managing Agency[11] and the Hi-Def Governance Plan;[12]

iii. Regularly review and address risk regarding acquisition processes, people, and technology; and

iv. Practice and share data management best practices relevant to acquisition data.

d. Leadership and Workforce – agencies shall:

i. Ensure that the acquisition workforce has appropriate knowledge and skills to facilitate the data lifecycle, including best practices for acquisition data entry and maintenance;

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[10] Office of Mgmt. & Budget, Executive Office of the President, Circular No. A-130, *Managing Information as a Strategic Resource*, Appendix I §§ 3, 4.
[11] As defined in § 4.c.
[12] As defined in § 7.b.

ii. As aligned with OMB Circular A-130,[13] implement innovative approaches and track workforce development training, including cross-functional training, rotational development and assignments, and other Federal and private sector training opportunities to maintain and enhance data literacy and data skills; and

iii. Promote the use of the HDE and associated tools to meet agency data requirements, as they become operational.

4. **Responsibilities:** This policy will be implemented in accordance with the following responsibilities.

a. **OMB**: With the support of the Government-wide governance structures identified in Appendix B, OMB will:

i. **Provide direction to agencies for an annual strategic plan to prioritize acquisition data management activities.** OMB will provide direction to agencies for the creation of an Annual Acquisition Data Strategic Hi-Def Plan (Hi-Def Plan) that addresses the agency's acquisition data resources and infrastructure and the status of the agency's activities to implement Government-wide and agency-specific priorities.

ii. **Facilitate the development of a comprehensive Hi-Def data governance plan.** OMB will work with agency stakeholders to develop a governance process to ensure appropriate representation and accountability for how datasets and data products are prioritized, managed, consumed, and secured in the HDE.

iii. **Facilitate the development of standards, in coordination with appropriate data governance structures, to support transactional pricing data or any other acquisition activity requiring standardization**. OMB will identify minimum transactional pricing data elements (e.g., CLIN standards) for collection and transmission that would minimize agency burden while providing insight at a Government-wide level. OMB will consider the commonalities identified from the initial data assessment, outlined in Section 7, performed by agencies as a basis for standardization.

iv. **Require appropriate information sharing and collaboration.** OMB will collaborate with the Federal Acquisition Regulatory Council on any appropriate regulatory amendments to support sharing of acquisition data within and among agencies with proper data security. OMB will also work with individual governance groups identified in Appendix B and agencies to prioritize information sharing needs

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[13] Office of Mgmt. & Budget, Executive Office of the President, OMB Circular A-130, *Managing Information as a Strategic Resource* § 5(c)(3).

and capabilities and to develop appropriate templates, and guidance to support scalability.

v. **Prioritize data collection efforts and targeted data sets based on targeted outcomes.** Given the wide range of data required to support the acquisition process, OMB will leverage the Hi-Def data governance process to collaborate with agency stakeholders, Hi-Def data domain stewards, the Hi-Def Managing Agency, and the government-wide Category Managers to establish prioritized outcomes and the agency datasets required to support outcome implementation.

vi. **Establish a Federal acquisition data training curriculum.** OMB, in coordination with the Federal Acquisition Institute (FAI), agency working groups and data experts, will establish a role-based Federal acquisition data training curriculum that addresses best practices and policies related to data sharing, data use, and the current landscape of Government-wide acquisition tools and resources.

vii. **Support the development of standard data-sharing agreements for Hi-Def purposes.** OMB will facilitate the development of memorandum-of-understanding (MOU) templates that agencies can use to expedite data sharing into the HDE in coordination with the Hi-Def Managing Agency, the Hi-Def Executive Steering Committee and, on an as needed basis, the Senior Agency Officials for Privacy,[14] and agency general counsels. MOUs can be customized on an as-needed basis; standard data elements can be found in Appendix F.

b. **Agencies**: Agencies are responsible for taking the following actions in furtherance of the acquisition data management policies established by this Circular:

i. **Develop an annual strategic Hi-Def plan to prioritize and resource their acquisition data management activities, consistent with direction from OMB**. Starting one year after the initial baseline assessment[15] agencies shall annually evaluate and document results of assessments along with any new agency policies, processes, and tools in an annual Hi-Def Plan, as outlined in Appendix E, using the template provided[16] to support agency budget planning and investment discussions.

ii. **Integrate best business practices into agency data strategy for the generation, collection, use, sharing, and improvement of data**. Agencies should utilize the Federal Integrated Business Framework[17] in developing their annual Hi-Def Plan

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[14] As defined in Office of Mgmt. & Budget, Executive Office of the President, Circular No. A-130, *Managing Information as a Strategic Resource* § 5(f).

[15] As defined in § 7.a.

[16] A template will be provided on a yearly basis and found on the Hi-Def website at *The Hi-Def Initiative*, https://acquisitiongateway.gov/Hi-Def.

[17] *Mission Support Business Standards*, https://ussm.gsa.gov/fibf/.

and share best business practices with the General Services Administration (GSA), which will make the information publicly available and easily accessible.

iii. **Collect data centrally and be prepared, upon OMB's request, to share their acquisition data into the HDE, including the relevant context and security protocols required, on an agreed upon cadence.**[18] Centralized data collection within the agency is critical to the agency's ability to readily share their acquisition data Government-wide, as well as the terms and conditions that provide critical context to making use of data. Agencies that are responsible for collecting agency data must use appropriate protocols to prevent the unauthorized disclosure of data. Agencies shall not agree to terms and conditions with their contractors or shared service providers that prohibit the sharing of their acquisition data with other Federal agencies, except where sharing is prohibited by law, where the contract identifies the data or information is classified, or where the agency makes a determination approved by the agency senior procurement executive (without delegation) after consultation with the Administrator for Federal Procurement Policy of a compelling business interest to restrict sharing.

iv. **Actively contribute to existing knowledge portals on innovative techniques and emerging technology.** Agencies shall actively collect and share information and data about their innovative activities through organized means, including but not limited to the Inventory of Emerging Technologies, the Periodic Table of Acquisition Innovations, and future knowledge management tools in the HDE, that contribute to the collective advancement of a more effective acquisition system.

v. **Appoint an accountable official responsible for Hi-Def activities.** This individual will be the primary point of contact for coordinating with OMB and the Hi-Def Managing Agency on functions that include (but are not limited to): use case identification, dataset prioritization, submission of the baseline assessment and annual Hi-Def plans, and sharing Hi-Def updates with agency stakeholders.

vi. **Support expansion, implementation, and promotion of acquisition data management training and certification efforts for the acquisition workforce**. Agencies shall work with OMB and FAI to build data analysis and related skills as a core acquisition workforce capability. Agencies shall promote and monitor workforce participation in the OMB Federal Acquisition Data Literacy training curriculum, once available. Agencies shall take steps to ensure members of the workforce with responsibilities for managing common spending are trained in using relevant Government-wide data and tools, as they become available through the Hi-Def initiative.

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[18] Office of Mgmt. & Budget, Executive Office of the President, Memorandum M-19-13, *Category Management: Making Smarter Use of Common Contract Solutions and Practices* (Mar. 20, 2019), https://www.whitehouse.gov/wp-content/uploads/2019/03/M-19-13.pdf.

vii. **Generate quality data consistent with procurement policy, standards for business processes, data, and interoperability.** This includes using independent verification and validation (V&V) processes and acquisition data dictionaries maintained through the Integrated Award Environment (IAE), as well as the other agency responsibilities outlined in Appendix D.

c. **Hi-Def Environment Managing Agenc**y: As aligned with GSA's mission to deliver comprehensive products and services to the Government at the best value possible, GSA will serve as the Managing Agency for the HDE. With oversight from the multi-agency HDE Executive Steering Committee and other governing bodies as identified in Appendix B, GSA is responsible for:

   i. Managing the technical architecture and planned capabilities for the HDE;

   ii. Maintaining a sustainable support function to address the program management elements described in this Circular;

   iii. Coordinating with agencies to define an acceptable set of data security standards for the transfer, storage, and use of Hi-Def data through data sharing agreements;

   iv. Properly securing all agency data, based on established data security standards, once transmitted into the HDE; and

   v. Monitoring use and adoption for the HDE.

d. **Electronic Invoicing Providers**: Electronic Invoicing Providers are responsible for providing electronic interfaces. Agencies shall ensure compliance with OMB Memorandum M-15-19[19] and successor policies, directing all Federal Shared Service Providers and other electronic invoice solution providers to integrate with the Integrated Award Environment and develop electronic interfaces.

5. **Authorities**: OMB issues this Circular pursuant to the Office of Federal Procurement Policy Act (as amended, codified at 41 U.S.C. §§ 101-4714); the Clinger-Cohen Act, also known as "Information Technology Management Reform Act of 1996" (as amended, codified at 40 U.S.C. §§ 11101-11704); and 31 U.S.C. ch. 5.

6. **Effective Date, Applicability, and Scope**: The Circular is effective upon publication. The policies in this Circular apply to all Federal agencies and shall only be used for unclassified data.

7. **Transition**: The following phase-in actions shall be taken to help agencies prepare for the responsibilities enumerated in Section 3.

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[19] Office of Mgmt. & Budget, Executive Office of the President, Memorandum M-15-19, *Improving Government Efficiency and Saving Taxpayer Dollars Through Electronic Invoicing* (July 17, 2015), https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2015/m-15-19.pdf.

a. **Within one year of the effective date of this Circular, agencies shall perform an initial one-time baseline assessment of their acquisition data management capabilities based on a template provided by OMB.** The assessment shall focus, at a minimum, on acquisition data principles, reduction of duplicative efforts, data sharing capabilities, and actions to exchange innovative practices and solutions. Agencies shall complete and submit an assessment of and a roadmap for acquisition data systems, structures, and elements involving invoicing, contract writing systems, and transactional pricing data. The results of this initial assessment may be used to inform future Hi-Def plans and will cover:

   i. Identification of the agency's accountable official responsible for Hi-Def activities;

   ii. Analysis of the current collection of transactional pricing data (i.e., contract line-item data) including existing systems, analytical capabilities, reporting requirements, and, if not currently being collected by a vendor, agency level of effort and required resources if changes are needed to collect that data;

   iii. Acquisition data domains that are defined and managed within the agency enterprise;

   iv. Adherence to the existing Federal G-Invoicing Standards;[20]

   v. The extent of unstructured acquisition data in contract writing systems that are not in a machine-readable format and would be unable to be transmitted via API (e.g. "flat" file PDFs, contract clauses, or additional scanned items that are not machine readable), with a focus on data that cannot easily be transformed to be machine readable. For example, line item pricing information may be kept in agency-specific contract writing systems, in one or more payment platforms, or in internal or external databases that are not easily accessible; and

   vi. Existing and planned capabilities to share data centrally within the agency and to share data with other agencies.

b. **Within one year of this Circular, OMB shall establish a comprehensive, outcome-driven Hi-Def Data Governance Plan to ensure that data stored and shared through the HDE is responsibly and securely managed and consumed.** The Hi-Def Data Governance Plan shall be updated at regular intervals and posted to the Hi-Def website.[21]

c. Within two years of the effective date of this Circular, the Department of Defense and FAI, in coordination with OMB and GSA, will create an outline for the Federal Acquisition Data Literacy training curriculum.

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[20] *Bureau of the Fiscal Service, G-Invoicing, Resources*, https://fiscal.treasury.gov/g-invoice/resources.html#standards.
[21] *The Hi-Def Initiative*, https://acquisitiongateway.gov/Hi-Def.

8. Attachments
   a. Appendix A – Definitions
   b. Appendix B – Governance
   c. Appendix C – Examples of Hi-Def Applications
   d. Appendix D – Assuring Uniform Implementation and Data Integrity
   e. Appendix E – Agency Planning
   f. Appendix F – Sample Elements for Data Sharing Agreements
   g. Appendix G – Hi-Def Stakeholders

Appendix A. Definitions

Acquisition – as defined in FAR 2.101,[22] acquisition is the acquiring by contract with appropriated funds of supplies or services (including construction) by and for the use of the Federal Government through purchase or lease, whether the supplies or services are already in existence or must be created, developed, demonstrated, and evaluated. Acquisition begins at the point when agency needs are established and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contract financing, contract performance, contract administration, and those technical and management functions directly related to the process of fulfilling agency needs by contract. For the purposes of this Circular, acquisition and procurement are used interchangeably.

Acquisition data – data or information that a contracting official, program official, or other member of the integrated product team would use during the acquisition lifecycle as part of their stewardship responsibility to obtain the best value for the Federal Government, such as, but not limited to, market research, contract documents such as statements of work, performance work statements, and statements of objective, terms, conditions, rates, and prices paid for commodities or services.

Acquisition data sharing agreement – a document that creates an understanding between two or more agencies on how acquisition data will be accessed, used, and shared, including an understanding of the overall requirements, permissions, procedures, and limitations on sharing to ensure compliance with applicable law.

Acquisition lifecycle – end-to-end management and execution of programs/contracts and projects. The lifecycle begins with the identification of a business need and ends with program or contract closeout.

Data integrity – the accuracy, completeness, and reliability of data both in its physical location and during transmission and throughout the stages of generation, collection, use, sharing, and improvement, which summarize the Federal Data Lifecycle.

Hi-Definition Environment (HDE) – a technical environment that uses a scalable architecture to store, access, utilize, share, and archive acquisition data without having to duplicate data, tools, or effort. The HDE is supported by a centralized data management policy framework (see definition of Hi-Definition framework). The HDE and the Hi-Def framework will provide a coordinated, Government-wide solution for accessing and utilizing acquisition data and for developing and deploying innovative tools that use this data to better support the acquisition lifecycle. As the functional arm of the Hi-Def framework, the HDE will improve the accessibility and usability of Government-wide data through the following four general capabilities:

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[22] 48 C.F.R. § 2.101.

1. **Data Management Layer:** Aggregating siloed Government-wide acquisition data from agencies and other sources so that it is accessible centrally through a single data management layer.
2. **Data Product Development and Publication:** Developing and publishing interoperable data products to power various analysis capabilities within the HDE and across customer agencies, including scalable and secure transmission across agency security boundaries.
3. **Customer Agency Access to Data Management Functionality:** Hosting a workspace through which agency data analysts can access the HDE data management layer, allowing them to leverage HDE data sources to perform advanced analyses and develop custom data products for their agency, as aligned with data governance processes and procedures.
   Dashboard and Report Management: Hosting a data visualization application, usable by both agency stakeholders and the Hi-Def Team, to develop custom Federal user-facing dashboards and reports that provide immediate value to Hi-Def stakeholders.

Hi-Definition Framework – policies, data standards, and governance addressing the acquisition of supplies or services using relevant acquisition data that is easily accessed and consumed at the time of need. The framework promotes data interoperability, secure sharing of acquisition data between agencies, and enterprise-wide data analysis to inform Government-wide and individual agency procurements.

Integrated Award Environment (IAE) – a Government-wide initiative administered by the General Services Administration that consists of a suite of systems and processes supporting parts of the Federal acquisition and financial assistance awards lifecycle. The IAE facilitates the awards processes in multiple online systems, including the System for Award Management (SAM), that each play a role in the awards lifecycle. Those systems are used for registering to do business with the Federal Government, listing contract opportunities, reporting performance, analyzing contract data, and more.

Appendix B. Governance

The acquisition ecosystem requires a strong governance structure covering Hi-Def data and the HDE, as well as Government-wide acquisition systems and processes.

Governing bodies and structures may periodically be updated and are subject to change; current charters and other updates will be posted to the Governance and Policies page on the Acquisition Gateway.[23]

1. **Hi-Def Governance:** The Hi-Def framework will be supported and operationalized by the HDE. The HDE uses a scalable technical architecture to store, access, utilize, share, and archive acquisition data without having to duplicate data, tools, or effort. Together, the Hi-Def framework and HDE will provide a coordinated, Government-wide solution for accessing and utilizing acquisition data and for developing and deploying innovative tools that use this data to better support the acquisition lifecycle.
   a. Hi-Def Data Governance Plan, as referenced in Section 7.b: This plan will be established within one year of this Circular and updated on a regular basis. The plan will, at a minimum, cover the following:
      i. Accountability and decision rights;
      ii. Transparency and ethics considerations;
      iii. Data risk management;
      iv. Data security;
      v. Business outcomes prioritization;
      vi. Product development and dissemination; and
      vii. Data domain definition and management.
   b. Hi-Def Environment Executive Steering Committee: Technical oversight of the HDE will reside initially with the HDE Executive Steering Committee. This interagency committee will be responsible for establishing the strategic, technical, and change management approaches for building and maintaining the HDE. Oversight of the HDE is subject to change once the comprehensive Hi-Def Data Governance Plan is established.
   c. Hi-Def Implementation Groups: On an as-needed basis, OMB may convene working groups composed of agency policy, workforce, or acquisition system experts who are knowledgeable on key topics to support Hi-Def outcomes, including but not limited to: improving machine-readable data; interoperability and system integration (i.e. exposing data through application programming interfaces); the agency contract writing system(s) and associated interfaces; agency electronic invoicing solutions; and information technology infrastructure. Agency participation in these working groups is highly encouraged as outcomes may inform future guidance.
2. **Acquisition Systems Governance:** Acquisition systems governance will be carried out using the established Integrated Award Environment governance structures including the Procurement Committee for E-Government (PCE) which serves as the primary interagency

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[23] *The Hi-Def Initiative*, https://acquisitiongateway.gov/Hi-Def.

body advising OMB on acquisition data with a particular focus on the procurement process. In its role, and in consultation with additional governing groups, as needed, the PCE will provide recommendations, priorities, and implementation decisions that consider the policy, operational, and technological improvements necessary to effect positive change in the efficiency and effectiveness of the use of technology and data in the Federal acquisition and procurement processes.

In addition, agencies will ensure that their current representatives selected for each governance structure or established in support of the goals of the Circular adhere to their respective charters, and possess the necessary skills and abilities to make recommendations and decisions that affect the generation, collection, use, sharing, and improvement of agency data.

Appendix C. Examples of Hi-Def Applications

This appendix provides illustrative examples of how a future HDE will benefit the acquisition lifecycle, agency planning, and budgeting. Based on agency feedback, the Office of Federal Procurement Policy has identified five initial targeted outcomes:

1. **Improved Market Research**
2. **Supply Chain & Demand Management Insights**
3. **Vendor Management & Engagement Support**
4. **Streamlined Requirement Definition & Solicitation Development**
5. **Enhanced Contract Evaluation**

The table below demonstrates how the impacts of the HDE will map to each stakeholder group, summarizing the impact and noting to which Hi-Def Targeted Outcomes the impact primarily relates.

Stakeholders		Anticipated Impacts*	Relevant Targeted Outcomes				
			1	2	3	4	5
U S E R S	Data Analysts	• Maximize access to Government-wide acquisition data • Gain a suite of tooling to generate Acquisition Workforce (AWF)-facing applications, dashboards, and reports	✔	✔	✔	✔	✔
	AWF	• Minimize the time and effort needed to conduct effective market research • Use previous solicitation packages as templates for future acquisitions	✔			✔	
	Acquisition Executives	• Better assess the supplier base and Government-wide purchasing trends to identify acquisition risks • Assess contract vehicle utilization to better make strategic decisions on which vehicles to invest in		✔	✔		✔
Customer Agencies		• Gain access to Government-wide data and a suite of tools that enable broad opportunities for improved acquisition processes and outcomes • Obtain opportunities for cost savings through more informed vendor negotiations and efficiencies	✔	✔	✔	✔	✔
Data Providers		• Increase their own (and all agencies') ability to gain value from the data available via the HDE, driving better overall outcomes for the Federal Government	✔	✔	✔	✔	✔
Industry		• Reduced burden of repeated negotiations as the Federal Government shares best practices • Simplified contracts as a result of Government standardization of buying practices (e.g., terms and conditions) • Better vendor recognition due to ease of data access	✔		✔		

Note, anticipated impacts have been simplified and extrapolated from the Hi-Def Targeted Outcomes. While the impacts above are representative of the key impacts stakeholder groups can expect, they are not comprehensive.

Appendix D. Ensuring Uniform Implementation and Data Integrity

Data integrity refers to the accuracy, completeness, and reliability of data in its physical location, during transmission, and throughout the stages of generation, collection, use, sharing, and improvement, which support the Federal Data Lifecycle (see Figure 1). Data integrity is maintained through compliance with laws, policies, and standards established by governance. The integrity of the Federal acquisition process, including budgeting for, planning, managing, and closing out contracts that support programs, depends on the quality and availability of data. Innovation leads to ongoing business process improvements, requiring regular assessments of processes and data against established standards. The standardized processes and data will drive strong foundations across the Federal acquisition enterprise, while encouraging and enabling agency innovation and agility in acquisition planning, management, and operations.

Figure 1: Federal Data Lifecycle
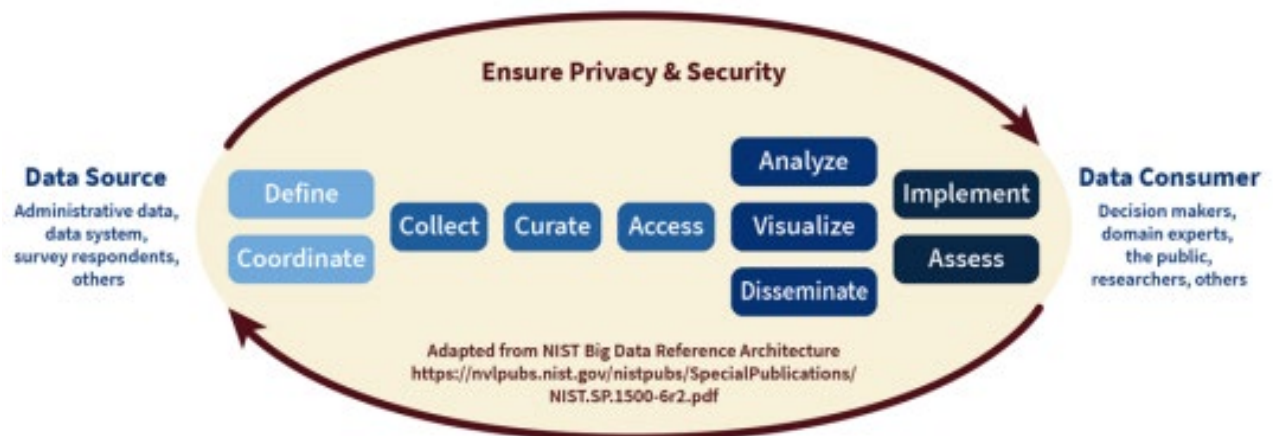
Data Roles

This policy builds on the Federal Data Lifecycle by organizing its data roles into the five phases of the acquisition data lifecycle: Generate, Collect, Share, Use, and Improve. In addition, privacy and security are roles that affect every aspect of acquisition data, and agencies should ensure that the most current data protection methodologies are used and that all applicable statutes and regulations are followed.

- **Generate -**
  - Define: Identify agency and stakeholder needs for acquisition data of sufficient quality for intended uses
  - Coordinate: Assess the ability of acquisition data resources and infrastructure to meet agency and stakeholder needs

- **Collect -**
  - Collect: Organize, plan, and execute acquisition data collections and acquisitions to meet agency and stakeholder needs

- o Curate: Organize, refine, and maintain agency acquisition data resources with sufficient quality to meet agency and stakeholder needs

- **Share -** Access: Identify and develop multiple acquisition data access methods for agency staff and stakeholders

- **Use -**
  - o Analyze: Optimize the ability of staff and stakeholders to use agency acquisition data to generate insights
  - o Visualize: Present acquisition data insights for consumption by all users, stakeholders, and leaders for their intended needs
  - o Disseminate: Provide multiple avenues for release of acquisition data and insights

- **Improve -** Implement & Assess: Maximize the use of acquisition data for decision-making, accountability, and the public good by continuously improving the acquisition data process

Vision for Data Integrity

The governance model identified in Appendix B will support efforts to identify, develop, and implement common business processes, data, and standards. This includes assessing existing standards instituted at an agency level for their potential application to the broader Federal acquisition community. The future HDE will make possible a seamless flow of data from authoritative sources to the point of need. Data will only need to be entered once and will be available for use at any point in the acquisition lifecycle consistent with applicable regulations and policies through implemented machine-readable data, in an open format, and available to computer applications to promote interoperability and system integration such as APIs.

As new regulations or policies are developed, new data may be required. Ongoing processes to review how best to collect this data from new or existing sources should be put into place, including for the review of the quality, security, and integrity of that data. Business process re-engineering may be required to avoid manual or redundant processes, improve quality, and make data available at the time of need. Reporting requirements may need to be adjusted or integrated as a result of increased data availability. Agencies must strategically plan how various Federal-wide and agency specific efforts can be harmonized and used to avoid duplication of effort, costs, and diminished data quality resulting from multiple instances of similar data across an agency.

Quality Technology and Data

In collaboration with the Integrated Award Environment governance structures and the Federal Acquisition Regulatory Council, and in consultation with Managing Partners for common technology tools, the PCE will ensure that applicable regulations and policy are reflected in any technologies, processes, systems, and data to reduce agency burden and ensure quality data are available for downstream use.

In addition, the PCE, in coordination with OMB and Integrated Award Environment governance structures, will review, and as needed, update the existing parameters and methods for annual V&V[24] reporting every 5 years to align with policy, regulatory and agency needs as aligned with policy.

Agency Responsibilities

In the distributed procurement information technology environment, agencies have responsibilities to generate data consistent with procurement policy, as well as standards for business processes, data, and interoperability. Federal agencies must manage data consistent with statutes, regulations, and OMB policies. Agency Chief Acquisition Officers, Senior Procurement Executives, Chief Data Officers, Chief Financial Officers, Chief Information Officers, and Budget Officers must collaborate to:

- Ensure independent V&V processes for data quality in accordance with relevant guidance;
- Assess the feasibility of building and maintaining appropriate and secure APIs to permit sharing and interoperability of procurement data and are developed through the appropriate working group(s) and after the initial data assessment period;
- Promote best business practices of appropriate data hygiene, principles, and standards as developed by the PCE;
- Further innovation and efficiency in the Federal acquisition system by leading or actively participating in the development and implementation of emerging technology tools that align with policy;
- Actively develop professionals with skills in Federal Acquisition Regulation (FAR)-based data analytics for decision-making;
- Assume responsibility for making data-driven decisions and for providing their acquisition workforce with critical information needed to negotiate contracts in the best interest of taxpayers;
- Build security and fraud protection into the management of procurement data to ensure data availability and usability; and
- Practice and share data management best practices through interagency working groups, such as the Chief Data Officers Council.

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[24] Office of Mgmt. & Budget, Executive Office of the President, OFPP Memorandum, *Improving Acquisition Data Quality for Fiscal Years 2009 and 2010* (Oct. 7, 2009), https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/procurement_memo/data_quality_guidance_100709.pdf; Office of Mgmt. & Budget, Executive Office of the President, OFPP Memorandum, *Improving Federal Procurement Data Quality – Guidance for Annual Verification and Validation* (May 31, 2011), https://obamawhitehouse.archives.gov/sites/default/files/omb/procurement/memo/improving-data-quality-guidance-for-annual-verification-and-validation-may-2011.pdf.

Appendix E. Annual Agency Planning Requirements

Strategic and operational planning by agencies, including budget planning, is essential to an interoperable environment where data are shared and available at the point of need. These activities provide opportunities for addressing gaps identified through assessments and innovation in business processes and technology, including lessons learned from pilots or shared activities. As such, agencies must include appropriate analyses of these considerations in agency annual strategic plans, as required by OMB Circular A-11 and any supplementary direction from OMB during the budget process. These plans will be reviewed by OMB to inform and shape actions necessary to support Hi-Def implementation and maintenance.

The Office of Federal Procurement Policy will provide a template with questions and structure for compiling agency Hi-Def strategic plans. The template will include sections for responding to questions related to acquisition data resources and infrastructure, Government-wide priorities established by OMB and governance groups, and agency-specific priorities. The yearly priority areas will be posted with an updated template on the Hi-Def website.[25] The acquisition data resources and infrastructure questions will generally address the following areas and may include other areas of interest as appropriate:

    a. Appropriate resource management activities necessary to support innovative practices and alignment of data with statutes, regulations, policies, and standards to support interoperability. The identification of activities should be accomplished in coordination with the appropriate agency leaders directing the acquisition, information, security, data, finance, and human capital functions.

    b. Solutions (active, in development, or planned for future development) identified by the agency workforce as the greatest opportunity for improving processes and leveraging technology to support innovation and reduce burden. Such ideas support agency operations and mission success by addressing issues, challenges, and best practices identified by those most impacted on a daily basis by access (or lack thereof) to data and information.

    c. Details on how agencies are assuring any new technologies at the agency level are aligned with policy and regulations, and how agency technology supports the interoperability of data in the federated model established through this Circular.

    d. Recommendations on any business processes that should be re-engineered to support innovation or just-in-time access to quality information or data. Re-imagining the process before applying emerging technologies or shared tools can lead to a more impactful change. This can be done by seeking workforce input, taking maximum advantage of FAR flexibilities, leveraging data and information technology as strategic assets, consulting with governance on how data is supposed to be used and displayed, and driving changes to agency-specific requirements.

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[25] *The Hi-Def Initiative*, https://acquisitiongateway.gov/Hi-Def.

Appendix F. Sample Elements for Data Sharing Agreements

Based on input collected through agency plans and stakeholder use cases, OMB will identify and prioritize datasets to be shared into the HDE.

Once identified, an MOU may be required to share data between the Hi-Def Managing Agency and the originating agency to ensure that data is properly stored, secured, and accessed. OMB is responsible for developing standard MOU templates to cover probable data scenarios, including but not limited to:
1. Exchange of discoverable, non-classified data;
2. Exchange of unstructured, document-based data such as contract terms and conditions; and
3. Exchange of classified or otherwise sensitive data that requires additional security considerations.

Sample elements for a data sharing MOU may include, but are not limited to:
1. Scope of data: Specify the types of data involved and any restrictions on use.
2. Data Ownership: Clarify who owns the data and any rights or responsibilities associated with it.
3. Confidentiality: Outline privacy considerations and measures to protect sensitive information.
4. Security: Detail security protocols required for transmitting, storing, and accessing data
5. Permitted Uses: Specify the authorized uses of the shared data and any limitations (for example, vendor names must be anonymized).
6. Duration of Agreement: Define the start and end dates or conditions for termination.
7. Responsibilities of the Parties: Clearly outline the obligations and responsibilities of each party involved.
8. Data Accuracy and Quality: Address the accuracy and quality standards expected for the shared data.
9. Data Access and Sharing Procedures: Specify how data will be accessed and shared.
10. Dispute Resolution: Establish procedures for resolving disputes or breaches of the agreement.
11. Governing Authorities: Specify the governing authorities that provide for the sharing of this data.
12. Amendments: Outline procedures for making changes to the agreement, as necessary.

Appendix G. HDE Stakeholders

HDE Stakeholders fall into four categories: Users, Customer Agencies, Data Providers, and Industry. This list is subject to further refinement, with updates posted to the Hi-Def website.[26]

1. **Data Providers** will enable and provide access to their acquisition data to improve the capabilities, scope, and value of the HDE.
    a. All Federal agencies are expected to ultimately be data providers. However, in the initial phase of the HDE, individual agencies will be consulted by OMB and the Hi-Def Executive Steering Committee about pilot opportunities on a case-by-case basis.
    b. Other data providers may include non-Federal Government data sources and commercial data providers, where such data sources significantly enhance Hi-Def capabilities (e.g., market, business, sales, supply chain, and/or product intelligence information).

2. **Customer Agencies** will be composed of HDE users (outlined below) and will have access to select HDE capabilities. They can leverage the HDE to help equip their agency users with Hi-Def insights and functionality.
    a. Customers will be Federal agencies who access select capabilities such as data products, applications, and support services.
    b. The customer base and services available are expected to grow and evolve as HDE functionality matures.

3. **Users** will engage directly with the HDE or leverage HDE data.
    a. The Acquisition Workforce (AWF) will primarily engage with various AWF-facing applications, dashboards, and reports that leverage HDE data products, initially those focused on commodity and service prices-paid analysis for market research, monitoring buying patterns, and solicitation development. The AWF can also use their understanding of the data in the HDE to identify more complex acquisition questions that they would like their data analysts to address. AWF users will primarily be agency Contracting Officers, Contract Specialists, and Agency Buyers and Program Managers.
    b. Data Analysts from customer agencies will have access to usable agency acquisition data through various HDE components and features. This includes: (1) direct access to the HDE data management layer to perform custom analyses and develop new data products; (2) use of the dashboard and report management application to provide streamlined insights to their AWF in the HDE; and (3) ability to use HDE data products to power functionality developed and hosted by their home agency (e.g., an advanced web-application).

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[26] *The Hi-Def Initiative*, https://acquisitiongateway.gov/Hi-Def.

c. Acquisition Executives will primarily engage with various end-user applications that use HDE data products to quickly identify key insights (e.g., demand trends, contractor performance, etc.) that support overall program direction and high-level decision making. Similar to the AWF, Acquisition Executives can also identify additional acquisition questions they would like data analysts to address. Acquisition Executives will include a range of program, category, and schedule managers.

4. **Industry** will benefit from enhanced acquisition efficiencies from the HDE, but will not be given access to the HDE, unless in a manner explicitly specified by the agencies and approved by OMB based on need, and in accordance with statutes, regulations, and protocols that address the release of contractor information to non-governmental sources.