Fiscal Year 2021 Implementation of the Digital Accountability and Transparency Act of 2014 Performance Audit

REPORT PREPARED BY KEARNEY & COMPANY, P.C.

NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL

November 4, 2021
OIG 22-2-001

NSF

AT A GLANCE

Fiscal Year 2021 Implementation of the Digital Accountability and Transparency Act of 2014 Performance Audit
Report No. OIG 22-2-001
November 4, 2021

AUDIT OBJECTIVE

The National Science Foundation Office of Inspector General engaged Kearney & Company, P.C. (Kearney) to conduct a performance audit of NSF's spending data submitted under the *Digital Accountability and Transparency Act of 2014* (DATA Act). The objectives of the audit were to review a statistically valid sample of NSF's fourth quarter FY 2020 spending data to assess the completeness, accuracy, timeliness, and quality of the data submitted for publication on USAspending.gov in accordance with DATA Act requirements and to assess NSF's implementation and use of the government-wide financial data standards.

AUDIT RESULTS

Kearney concluded NSF achieved an overall data quality rating of "Higher" in accordance with Council of Inspectors General on Integrity and Efficiency (CIGIE) guidelines. Further, Kearney concluded that although NSF took steps to implement and use the government-wide data standards, improvements are still needed to verify compliance across all data elements. Specifically, Kearney found that NSF's submission contained record-level data linkage errors between NSF's financial and award files. Kearney identified completeness, accuracy, and timeliness errors in 11.5 percent of data elements tested. NSF has identified enhancements to address record-level linkage differences. Kearney is responsible for the attached report and the conclusions expressed in this report. NSF OIG does not express any opinion on the conclusions presented in Kearney's audit report.

RECOMMENDATION

The auditors included one finding in the report with an associated recommendation for NSF to fully implement its planned enhancements to verify the current classification of record-level linkage differences between the financial and award files.

MANAGEMENT RESPONSE

NSF agreed with the finding in the report. NSF's response is attached in its entirety to the report as Appendix E.

FOR FURTHER INFORMATION, CONTACT US AT OIGPUBLICAFFAIRS@NSF.GOV.

National Science Foundation • Office of Inspector General
2415 Eisenhower Avenue, Alexandria, Virginia 22314

MEMORANDUM

DATE: November 4, 2021

TO: Dr. Sethuraman Panchanathan
               Director
               National Science Foundation

               Teresa Grancorvitz
               Chief Financial Officer and Office Head
               Office of Budget, Finance and Award Management

FROM: Mark Bell
               Assistant Inspector General
               Office of Audits

SUBJECT: Audit Report No. 22-2-001, Fiscal Year 2021 Implementation of the Digital
               Accountability and Transparency Act of 2014 Performance Audit

This memorandum transmits the Kearney & Company, P.C. (Kearney) report for the audit of NSF's Fiscal Year (FY) 2021 implementation of the *Digital Accountability and Transparency Act of 2014* (DATA Act). The objectives of the audit were to review a statistically valid sample of NSF's FY 2020 fourth quarter spending data and to assess the completeness, accuracy, timeliness, and quality of NSF's FY 2020 fourth quarter financial and award data submitted for publication on USAspending.gov in accordance with DATA Act requirements, and to assess NSF's implementation and use of the Government-wide financial data standards established by the Office of Management and Budget (OMB) and the U.S. Department of Treasury (Treasury).

Please coordinate with our office during the 6-month resolution period, as specified by Office of Management and Budget Circular A-50, to develop a mutually agreeable resolution of the audit finding. The finding will not be closed until OIG determines that the recommendation has been adequately addressed and the proposed corrective actions have been satisfactorily implemented.

OIG Oversight of Audit

Kearney is responsible for the attached auditors' report and the conclusions expressed in this report. We do not express any opinion on the conclusions presented in Kearney's audit report. To fulfill our responsibilities, we:

- reviewed Kearney's approach and planning of the audit;
- evaluated the qualifications and independence of the auditors;
- monitored the progress of the audit at key points;
- coordinated periodic meetings with Kearney, as necessary, to discuss audit progress, findings, and recommendations;
- reviewed the audit report prepared by Kearney; and
- coordinated issuance of the audit report.

We thank your staff for the assistance that was extended to the auditors during this audit. If you have any questions regarding this report, please contact Laura Rainey at 703.292.7100 or OIGpublicaffairs@nsf.gov.

Attachment

cc:

Anneila Sargent	Jesse Simons	Allison Lerner	Jennifer Kendrick
Ellen Ochoa	Avinash Tembulkar	Lisa Vonder Haar	Louise Nelson
John Veysey	Janis Coughlin-Piester	Ken Chason	Karen Scott
Ann Bushmiller	Michael Wetklow	Dan Buchtel	Heather Gallagher
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National Science Foundation
Office of Inspector General

National Science Foundation
Office of Inspector General

Fiscal Year (FY) 2021 Implementation of the
Digital Accountability and Transparency Act of 2014
(DATA Act) Performance Audit

Performance Audit Report

November 4, 2021

KEARNEY&COMPANY

Dr. Sethuraman Panchanathan
Director
National Science Foundation
Office of the Director
2415 Eisenhower Avenue, Room W 19100
Alexandria, VA 22314

Ms. Teresa Grancorvitz
Chief Financial Officer and Office Head, Office of Budget, Finance, and Award Management
National Science Foundation
2415 Eisenhower Avenue, Room C 7006
Alexandria, VA 22314

RE: Audit of the Agency's Implementation of the Digital Accountability and Transparency
        Act of 2014 (DATA Act) for Quarter 4 (Q4) Fiscal Year (FY) 2020 Spending Data

Dear Dr. Panchanathan and Ms. Grancorvitz:

Kearney & Company, P.C. (Kearney) has performed an audit of the National Science
Foundation's (NSF) implementation of the Digital Accountability and Transparency Act of 2014
(DATA Act). This performance audit, performed under Contract No. GS00Q14OADU210, was
designed to meet the objectives identified in the OBJECTIVES section of this report and further
defined in *APPENDIX A*: PURPOSE, SCOPE, AND METHODOLOGY.

Kearney conducted this performance audit in accordance with *Government Auditing Standards*,
2018 Revision, issued by the Comptroller General of the United States. Those standards require
that Kearney plan and perform the audit to obtain sufficient, appropriate evidence to provide a
reasonable basis for our findings and conclusions based on our audit objectives. We believe that
the evidence obtained provides a reasonable basis for our findings and conclusions based on our
audit objectives.

Kearney appreciates the cooperation provided by NSF's personnel during the audit.

Kearney & Company, P.C.
Alexandria, VA
November 4, 2021

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EXECUTIVE SUMMARY

The Office of Inspector General (OIG) engaged Kearney & Company, P.C. (referred to as "Kearney," "we," and "our" in this report) to conduct a performance audit over the National Science Foundation's (NSF) Quarter 4 (Q4) Fiscal Year (FY) 2020 spending data submitted under the Digital Accountability and Transparency Act of 2014 (DATA Act). The DATA Act requires Federal agencies to report financial and spending information to the public through USAspending.gov in accordance with Government-wide financial data standards developed and issued by the Office of Management and Budget (OMB) and the Department of the Treasury (Treasury). The objectives of our performance audit were to review a statistically valid sample of NSF's Q4 FY 2020 spending data to assess the accuracy, completeness, timeliness, and quality of the data sampled, as well as to assess NSF's implementation and use of the Government-wide data standards.

Kearney reviewed a statistically valid sample of spending data submitted by NSF in Q4 FY 2020 under the DATA Act and determined NSF to have an overall data quality rating of "Higher" in accordance with Council of Inspectors General on Integrity and Efficiency (CIGIE) guidelines. We found that NSF submitted its Q4 FY 2020 data timely and File C (Financial) was suitable for testing; however, there were 49 discrepancies related to one issue which extended across all data elements pertaining to File D2 (Award – Financial Assistance). Specifically, the issue in the submission was Incomplete Record-Level Linkage from File C to File D2, where File C transactions were not reported in File D2 (i.e., financial transactions were not reported as awards). These discrepancies resulted from NSF's interpretation of DATA Act reporting guidance.

NSF reported 14,302 detail award transactions (i.e., records or rows) in its File C submission. Our statistical sample included 385 detail award transactions. Of these 377 were Federal Award Identification Number [FAIN] (i.e., a financial assistance acquisition) and eight were Procurement Instrument Identifier [PIID] (i.e., a non-financial assistance acquisition) actions. Of the 385 samples, 49 transactions contained completeness, accuracy, and/or timeliness errors in one or more data elements and did not meet the quality requirements, as outlined by OMB. These 49 transactions contained errors due to Incomplete Record-Level Linkage from File C (Financial) to File D2 (Award – Financial Assistance). There was a total of 16,579 data elements associated with the 385 transactions tested. Of the 16,579 applicable data elements, 1,911 (11.5%) contained completeness, accuracy, and timeliness issues. No errors were attributable to non-NSF maintained data.

If the data remains uncorrected, there is a risk that misstated data will be uploaded to USAspending.gov, decreasing the reliability of the data. Although there is a discrepancy between File C and File D2, we determined that the variance does not have a material impact to NSF's Data Quality Score. NSF's business process does not capture award closeout and post-award adjustments in its award management system, thus creating differences in amounts reported in File C and File D2. To address this recurring finding, NSF has taken certain corrective action steps that led to the implementation of monthly reconciliations to identify the root causes of discrepancies across files, and a quarterly retrospective review of outstanding File C to D cross-

validation warnings. Although NSF took many steps to implement and use data standards required by Federal guidance, improvements are still needed to verify compliance across all data elements. As a result of this audit, we made one recommendation to improve NSF's process to review record-level linkage errors between File C and File D2. We provided this finding and recommendation, as well as a draft version of this report, to management for comment. We included NSF's response in its entirety in *APPENDIX E*: **MANAGEMENT'S RESPONSE**.

Additionally, to test outlays related to Coronavirus Disease 2019 (COVID-19), we selected a non-statistical random sample of 45 records out of 1,108 File C outlay records from the third month of the FY 2020 Q4 DATA Act submission. Based on our testing, we found that the File C outlays for our sample of 45 records were 100% complete, timely, and accurate.

OBJECTIVES

The objectives of this performance audit were to review a statistically valid sample of NSF's Q4 FY 2020 spending data and to assess the completeness, accuracy, timeliness, and quality of NSF's FY 2020 Q4 financial and award data submitted for publication on USAspending.gov in accordance with the DATA Act and to assess NSF's implementation and use of the Government-wide financial data standards established by OMB and Treasury.

BACKGROUND

To improve the availability of information on Federal spending, Congress passed the Federal Funding Accountability and Transparency Act (FFATA) in 2006. The act, as amended by the Government Funding Transparency Act of 2008, requires OMB to ensure the existence and operation of a free, publicly accessible website containing data on Federal awards (e.g., contracts, loans, and grants). In order to comply with FFATA requirements, OMB launched the website USAspending.gov.

The DATA Act was signed into law in May 2014 to expand the reporting requirements pursuant to FFATA. The purpose of the DATA Act is to disclose "direct Federal agency expenditures" and "track Federal spending." The DATA Act requires Federal agencies to report financial and award data to the public through USAspending.gov in accordance with the established Government-wide financial data standards that are developed and issued by OMB and Treasury.

The DATA Act also requires each Federal agency's OIG to assess a statistically valid sample of the spending data submitted by its Federal agency. During each mandated audit, the auditor is required to assess the completeness, accuracy, and timeliness, as well as the overall quality of the selected data; it must also assess the agency's implementation and use of Government-wide financial data standards. OIGs are required to submit a report of the results of the assessment to Congress and make it publicly available.

Guidance Related to Federal Agency Accountability and Transparency

OMB has published several sources of implementation guidance relating to FFATA and the

DATA Act to facilitate consistency and compliance across Federal agencies. In addition, Treasury published technical guidance to assist agencies in understanding the various files and data elements of the DATA Act submissions and the functionality of Treasury's DATA Act Broker (Broker). Some notable sources of guidance available to agencies are listed in *APPENDIX G:* **GUIDANCE RELATED TO FEDERAL AGENCY ACCOUNTABILITY AND TRANSPARENCY.**

To meet the needs of the Inspector General (IG) community, the CIGIE Federal Audit Executive Council (FAEC) established the DATA Act Working Group. In consultation with the Government Accountability Office (GAO), as required by the DATA Act, the Working Group developed the CIGIE FAEC *Inspectors General Guide to Compliance under the DATA Act* (Guide), which presents a common methodology and reporting approach for the IG community to use in performing its mandated work.

DATA Act Reporting Date Anomaly

CIGIE identified a timing anomaly with the oversight requirements contained in the DATA Act. The first IG reports were due to Congress in November 2016; however, Federal agencies were not required to report spending data until May 2017. To address this reporting date anomaly, the IGs provided Congress with their first required reports by November 8, 2017, one year after the statutory due date, with two subsequent reports to be submitted following on a two-year cycle. This report is the third and final report required under the DATA Act. On December 22, 2015, CIGIE's chair issued a letter detailing the strategy for handling the IG reporting date anomaly and communicated the strategy to the Senate Committee on Homeland Security and Governmental Affairs and the House Committee on Oversight and Government Reform.

DATA Act Submission

The DATA Act requires Federal agencies to submit data through USAspending.gov. Treasury developed an Information Technology (IT) system, the Broker, to facilitate the submission of data for the DATA Act. Agencies are required to use the Broker to upload three files containing data from the agencies' internal systems and records. In addition, agencies use the Broker to extract award and sub-award information from existing Government-wide reporting systems to generate four additional files (described in *Exhibit 2* below). The Senior Accountable Official (SAO) then certifies the agency's data in the Broker.

Files Generated Utilizing Agency Information Systems

Exhibit 1 details the three files Federal agencies generate from internal information systems and records.

Exhibit 1: Agency-Created Files

DATA Act Submission File	File Description
File A – Appropriations Account Detail	File A provides information about how budgetary resources are made available and the status of budgetary resources at the end of the reporting period.

DATA Act Submission File	File Description
	Six of the 59 required data elements are included in File A, including the amount appropriated and obligated during the FY. The information in File A is reported for each Treasury Account Symbol (TAS). File A data is reported at the summary-level, rather than the individual transaction-level.
File B – Object Class and Program Activity Detail	File B includes four of the same data elements as File A; however, the information in File B is presented by program activity, object class, and Disaster Emergency Fund Code (DEFC), which represent an additional three required data elements. Similar to File A, File B data is not reported at the transaction-level.
File C – Award Financial Data	File C includes transaction-level information for all awards, procurement, and financial assistance (e.g., grants and cooperative agreements) processed during the quarter. This includes modifications to existing awards. Payroll actions, classified transactions, and interagency awards are excluded from agency submissions. Nine of the 59 required data elements are included in File C, including the TAS used to fund the award, the amount of the award or modification, and a unique identifier. All records in File C should be included in either File D1 or D2, which are described below.

Source: Generated by Kearney based on OMB and Treasury guidance.

Files Generated in the Broker

Exhibit 2 details the four files that are part of the DATA Act submission files but are not populated directly by the Federal agencies' internal systems. Instead, the Broker generates these files from data submitted by Federal agencies. Although the agencies do not directly create the files, the agency SAOs must still provide assurance over the quality of the data.

Exhibit 2: Broker-Generated Files

DATA Act Submission File	File Description
File D1– Award and Awardee Attributes (Procurement)	File D1 includes transaction-level information for all procurement awards processed during FY 2020 Q4. File D1 includes 41 of the 59 required data elements, including a unique identifier, a description of the award, the place of performance, and the period of performance. Records can be traced from File D1 to File C using the unique identifier.
	When agencies generate File D1, the Broker pulls the information from the Federal Procurement Data System – Next Generation (FPDS-NG). The General Services Administration (GSA) operates FPDS-NG and the Federal Government uses it to collect and report on procurement spending across all Federal agencies. Agencies are required to report all contracts with an estimated value over $10,000 and modifications to those

DATA Act Submission File	File Description
	contracts into FPDS-NG.
File D2– Award and Awardee Attributes (Financial Assistance)	File D2 includes transaction-level information for all financial awards processed during FY 2020 Q4. File D2 includes 40 of the 59 required data elements, including a unique identifier, the legal name of the awardee, the place of performance, and the period of performance. Records can be traced from File D2 to File C using the Unique Record Identifier (URI). When agencies generate File D2, the Broker pulls the information from the Financial Assistance Broker Submission (FABS) for all awards reported. Treasury operates FABS, which is part of USAspending.gov. On a monthly basis, agencies are required to report all financial assistance awards of $25,000 or more to the FABS.
File E – Additional Awardee Attributes	File E includes information on organizations that received procurement or financial assistance awards. In total, File E includes six of the 59 required data elements. When agencies generate File E, the Broker pulls the information from the System for Award Management (SAM), operated by GSA. All organizations that do business with the Federal Government, or want to conduct business with the Federal Government, must have an active registration in SAM. *File E data is the legal responsibility of the recipient and agencies are not responsible for certifying the quality of data reported by the awardees; therefore, we did not perform any testing procedures over those data elements reported.*
File F – FFATA Sub-award Attributes	File F includes information on certain organizations that received procurement or financial assistance sub-awards during FY 2020 Q4 other than data elements used to identify the prime contractor or prime grantee, which enable the file to be linked to the other files. In total, File F includes 37 of the 59 required data elements. When agencies generate File F, the Broker pulls information from the FFATA Sub-award Reporting System (FSRS), operates by GSA. If a prime contractor issues a sub-award for more than $30,000, or if a prime grantee issues a sub-award for more than $25,000, the prime contractor/grantee must report the sub-award in FSRS. In addition to details about the sub-award, the prime contractor/grantee is also required to report information on the executive compensation of the organization to which the sub-award was issued. *File F data is the legal responsibility of the recipient and agencies are not responsible for certifying the quality of data reported by the awardees; therefore, we did not*

DATA Act Submission File	File Description
	perform any testing procedures over those data elements reported.

Source: Generated by Kearney based on OMB and Treasury Guidance.

SAO Certification

The responsibility for ensuring the accuracy of all files, agency-created and Broker-generated, lies with an agency's DATA Act SAO. The NSF Chief Financial Officer (CFO) serves as the DATA Act SAO. The SAO must provide reasonable assurance over the quality of the data submitted and document this assurance by certifying the DATA Act submission in the Broker. OMB guidance directs SAOs to verify that their data includes certain required linkages between files prior to certification. For Q4 of FY 2020, NSF certified that their internal controls support the reliability and validity of the agency account-level and award-level data. Quarterly, NSF certifies that the information contained in the Treasury Broker is complete, accurate, and timely.

NSF's Process for Generating the DATA Act Submission

NSF uploaded the required FY 2020 Q4 data to the Broker and certified it on November 13, 2020. The data needed to create Files A, B, and C resides in NSF's financial management system, iTRAK. Additionally, using the Broker, NSF extracted and generated the Files D1 (PIIDs), D2 (FAINs), E, and F for submission and certified the required files in the Broker. As noted in the *DATA Act Submission* section, the source for Files D1, D2, E, and F are Government-wide reporting systems. *Exhibit 1* and *Exhibit 2* outline how each file is populated into each of these systems.

File A – Appropriations Account Detail

File A includes the same information reported on the Standard Form (SF)-133, *Report on Budget Execution and Budgetary Resources*, which Treasury creates based on data received from the Government-wide Treasury Account Symbol (GTAS) Adjusted Trial Balance System. Treasury provides an SF-133 crosswalk table to show the relationship of the GTAS elements to specific lines on the SF-133. On a monthly basis, agencies must submit their financial information to Treasury using GTAS. NSF ensured, through the absence of related broker warnings, that the extracted File A data agreed to the applicable GTAS and SF-133 information for the Q4 FY 2020 DATA Act submission.

File B – Object Class and Program Activity Detail

As noted above in *Exhibit 1*, File B includes the same information as File A; however, the budgetary resource and status information in File B is presented by TAS, program activity, and object class. NSF's financial reporting process for generating its GTAS Adjusted Trial Balance file includes the necessary level of detail for its components.

File C – Award Financial Data

NSF uses its internal financial system (i.e., iTRAK) to submit File C (Award Financial), which includes reportable record-level data. The financial award and procurement data reported in File C should agree to the procurement and award information in FPDS-NG and Awards/MyNSF.

Files D1, D2, E, and F – Broker-Generated Files

On November 13, 2020, NSF used the Broker to generate Files D1, D2, E, and F for submission, as required by Treasury for this DATA Act submission. File D1 is created via FPDS-NG daily updates and includes additional information from other GSA databases (e.g., SAM). File D2 is created with data from the Broker, via the agency's FABS and other Treasury databases (e.g., SAM), which includes detailed financial assistance award information for record-level transactions. NSF must submit its financial assistance data (File D2) to FABS at least twice monthly and ensure the data is successfully validated. Federal awardees are responsible for updating SAM and FSRS, which are the source systems for Files E and F. NSF is responsible for ensuring controls are in place to verify that awardees register in SAM at the time of the financial assistance award and comply with NSF requirements.

As part of the agency's quarterly submission process, the Broker conducts cross-file validations and performs various edit checks over the data submission. For example, one of the edit checks provides a warning, C11, which states, "Each unique PIID [Procurement Instrument Identifier] (or combination of PIID/ParentAwardId) from File C should exist in File D1." Similarly, warning C8 states, "Unique [Financial Assistance Identifier Numbers] FAIN and/or [Unique Record Identified] URI from File C should exist in File D2…" Per DATA Act Information Model Schema (DAIMS), a warning does not mandate an error; however, it requires further investigation to ensure all information is reported correctly.

Recording Data in FPDS-NG

When NSF completes a procurement action in iTRAK, certain fields are automatically transmitted to FPDS-NG, creating a new record. However, this process does not automatically populate all required fields in FPDS-NG. The Contracting Officer (CO) is responsible for entering the remaining fields directly into FPDS-NG. Once all the required fields in FPDS-NG are completed, the CO clicks the "Verify" button. The action must pass automatic edit checks in FPDS-NG to be recorded, which is noted by a "Final" status.

Period of Performance Start Date for Procurement Awards

DAIMS defines the Period of Performance Start Date as the date on which the awardee effort begins or the award is otherwise effective. For modifications to procurement awards, it is not clear whether "the award referred to" is the initial award or the modification and neither OMB nor Treasury's DATA Act Program Management Office (PMO) has issued guidance with specific instructions on the matter. Thus, for procurement awards with modifications, if agencies recorded the initial award date or the date of the modification as the start date, in accordance with their internal policies and procedures/practices, it is not reported as an error for DATA Act reporting purposes.

Testing Limitations for Data Reported from Files E and F

As noted above in *Exhibit 2*, File E of the DAIMS contains additional awardee attribute information the Broker extracts from SAM. File F contains sub-award attribute information the Broker extracts from FSRS. The data in Files E and F remain the responsibility of the awardee in accordance with terms and conditions of Federal agreements and the quality of this data remains the legal responsibility of the recipient. Consequently, agency SAOs are not responsible for certifying the quality of File E and F data reported by awardees, but are responsible for assuring controls are in place to verify that financial assistance awardees register in SAM at the time of the award. As such, we did not assess the completeness, timeliness, quality, and accuracy of the data extracted from SAM and FSRS via the Treasury Broker system. See *Exhibit 10* for additional details.

Data Quality Plan (DQP)

On June 6, 2018, OMB issued M-18-16, which updated the OMB Circular A-123 *Management of Reporting and Data Integrity Risk* reporting requirements. The agency must develop a DQP to achieve the objectives of the DATA Act. Based on CIGIE requirements, the DQP must be reviewed and assessed annually for three years or until the agency determines that sufficient controls are in place to achieve the reporting objective. Kearney determined NSF's DATA Act DQP to be reasonable per the DATA Act requirements.

ASSESSMENT OF THE DATA ACT SUBMISSION

Kearney reviewed a statistically valid sample of spending data that NSF submitted in FY 2020 Q4 under the DATA Act and found certain transactions were incomplete, inaccurate, or untimely and did not meet all quality requirements, as outlined by OMB. Specifically, of the 14,302 transactions included in NSF's File C submission, we selected a sample of 385 transactions (3%) and reviewed supporting documentation to assess the completeness, accuracy, timeliness, and quality of the transaction-level data. *Exhibit 3* presents the summary results of testing.

Exhibit 3: Summary Results of Testing

Results	Completeness	Accuracy	Timeliness
Number of Transactions without Errors	336	336	336
Number of Transactions with One or More Data Elements Containing Errors	49	49	49
Total Transactions Tested	385	385	385

Source: Generated by Kearney based upon the results of testing.

Completeness of the Agency DATA Act Submission

We evaluated NSF's FY 2020 DATA Act submission to the Broker and determined that the submission was complete. To be considered a complete submission, we evaluated Files A, B, and C to determine that all transactions and events that should have been recorded were recorded in the proper period.

Timeliness of the Agency DATA Act Submission

We evaluated NSF's FY 2020 DATA Act submissions to the Broker and determined that the submissions were timely. We also noted that the SAO certified the data timely. To be considered timely, the DATA Act submission had to be submitted by the end of the following month and had to be certified by the SAO within 45 days of the end of the corresponding quarter.

Completeness of Summary-Level Data for Files A and B

We performed summary-level data reconciliations and linkages for Files A and B and did not identify any variances. The test results verified: 1) summary-level data from File A matched the Agency's GTAS SF-133; 2) the totals and TAS identified in File A matched File B; and 3) all object class codes from File B match codes defined in Section 83 of OMB Circular A-11.

Results of Linkages from File C to Files B/D1/D2

We tested the linkages between File C to File B by matching TAS, object class, and program activity and the linkages between File C to File D1/D2 by matching the Award ID. During our test work, we identified:

- All records in File C were reported in File B
- All records in File C were reported in File D1
- 1,648 of records in File C were not reported in File D2
- All records in File D1 were reported in File C
- All records in File D2 were reported in File C
  - **Note:** There were two instances in which the amounts differed; however, NSF was able to explain the variances.

Based on our test results, not all financial assistance actions reported in File C were contained in File D2. The variances were caused by NSF's business processes where File D2 does not report FAINs for all Federal Action Obligations. NSF's File C Data is managed by its accounting system (NSF iTRAK) and its File D2 Data is managed by its award system. Per NSF's DQP, "NSF does not capture transactions for award closeout and post-award close financial adjustments in FABS reporting, but these transactions are reported from iTRAK for File C." This causes a discrepancy between File C and File D2 reporting. Although there is a discrepancy between File C and File D2, we determined that the variance does not have a material impact to NSF's Data Quality Score.

Analysis of the Accuracy of Dollar Value-related Data Elements

Exhibit 4 below presents the results for the errors in dollar value-related data elements. These results are not projectable and thus the actual absolute value of the errors is reported.

Exhibit 4: Accuracy of Dollar Value-related Data Elements

PIID/FAIN	Data Element	Accurate	Not Accurate	Not Applicable	Total Tested	Total Attribute Error Rate %	Absolute Value of Errors
PIID	Federal Action Obligation	8	0	N/A	8	0	$0
PIID	Current Total Value of Award	8	0	N/A	8	0	0
PIID	Potential Total Value of Award	8	0	N/A	8	0	0
PIID	Obligation	8	0	N/A	8	0	0
FAIN	Federal Action Obligation	328	49	N/A	377	11.5%	10,721,387
FAIN	Amount of Award	328	49	N/A	377	11.5%	10,721,387
FAIN	Non-Federal Funding Amount	328	49	N/A	377	11.5%	10,721,387
FAIN	Obligation	377	0	N/A	377	0	0
	Total	**1,393**	**147**	**N/A**	**1,540**		

Source: Generated by Kearney based upon the results of testing.

File C Coronavirus Disease 2019 (COVID-19) Outlay Testing and Results

We selected a non-statistical random sample of 45 records out of 1,108 File C outlay records from the third month of the FY 2020 Q4 DATA Act submission using Financial Audit Manual (FAM) 450.01, *Sample Size and Acceptable Deviations*. Our testing included assessing the Parent Award Identification (ID) number, PIID/FAIN, object class, appropriations account, obligation, program activity, outlay, and DEFC File C outlays data elements for completeness, accuracy, and timeliness. Based on our testing, we found that the File C outlays for our sample of 45 records were 100% complete, 100% accurate, and 100% timely. This non-statistical sample design did not allow projection of the test results to the universe from which the samples were selected.

Data Element Analysis

We performed our testing using the Guide. The Error Rate derived from testing was the direct result of File D2 awards not being included in File C, as described above. From our sample of

385 File C transactions, 49 were not included in File D2. This gave us an error rate of 11.5% for all attributes related to File D2 testing.

Completeness of the Data Elements

The projected error rate for the completeness of the data elements is 11.5%. A data element was considered complete if the required data element that should have been reported was reported.

Based on a 95% confidence level, the projected error rate for the completeness of the data elements is between 9.4% and 16.1%.

Accuracy of the Data Elements

The projected error rate for the accuracy of the data elements is 11.5%. A data element was considered accurate when amounts and other data relating to recorded transactions were recorded in accordance with the DATA Act Information Model Schema Reporting Submission Specification (DAIMS RSS), Interface Definition Document (IDD), and the online data dictionary, as well as agree with the originating award documentation/contract file.

Based on a 95% confidence level, the projected error rate for the accuracy of the data elements is between 9.4% and 16.1%.

Timeliness of the Data Elements

The projected error rate for the timeliness of the data elements is 11.5%. The timeliness of data elements was based on the reporting schedules defined by the financial, procurement, and financial assistance requirements (e.g., FFATA, Federal Acquisition Regulation [FAR], FPDS-NG, FABS, and DAIMS).

Based on a 95% confidence level, the projected error rate for the timeliness of the data elements is between 9.4% and 16.1%.

Exhibit 5 presents the detailed completeness, accuracy, and timeliness errors by data element.

Exhibit 5: Completeness, Accuracy, and Timeliness Errors by Data Element

Data Element	Number of Transactions with Completeness Errors	Number of Transactions with Accuracy Errors	Number of Transactions with Timeliness Errors
Awardee/Recipient Legal Entity Name	49	49	49
Awardee/Recipient Unique Identifier	49	49	49
Ultimate Parent Unique Identifier	49	49	49
Ultimate Parent Legal Entity Name	49	49	49
Legal Entity Address	49	49	49
Legal Entity Congressional District	49	49	49

Data Element	Number of Transactions with Completeness Errors	Number of Transactions with Accuracy Errors	Number of Transactions with Timeliness Errors
Legal Entity Country Code	49	49	49
Legal Entity Country Name	49	49	49
Highly Compensated Officer Name	0	0	0
Highly Compensated Officer Total Compensation	0	0	0
Federal Action Obligation	49	49	49
Non-Federal Funding Amount	49	49	49
Amount of Award	49	49	49
Current Total Value of Award	0	0	0
Potential Total Value of Award	0	0	0
Award Type	49	49	49
North American Industrial Classification System (NAICS) Code	0	0	0
NAICS Description	0	0	0
Catalog of Federal Domestic Assistance (CFDA) Number	49	49	49
CFDA Title	49	49	49
TAS (excluding Sub-Account)	0	0	0
Award Description	49	49	49
Award Modification/Amendment Number	49	49	49
Parent Award ID Number	0	0	0
Action Date	49	49	49
Period of Performance Start Date	49	49	49
Period of Performance Current End Date	49	49	49
Period of Performance Potential End Date	0	0	0
Ordering Period End Date	0	0	0
Primary Place of Performance Address	49	49	49
Primary Place of Performance Congressional District	49	49	49
Primary Place of Performance Country Code	49	49	49
Primary Place of Performance Country Name	49	49	49
Award ID Number (PIID/FAIN)	49	49	49
Record Type	49	49	49
Action Type	49	49	49
Business Types	49	49	49
Funding Agency Name	49	49	49
Funding Agency Code	49	49	49
Funding Sub Tier Agency Name	49	49	49
Funding Sub Tier Agency Code	49	49	49
Funding Office Name	49	49	49

Data Element	Number of Transactions with Completeness Errors	Number of Transactions with Accuracy Errors	Number of Transactions with Timeliness Errors
Funding Office Code	49	49	49
Awarding Agency Name	49	49	49
Awarding Agency Code	49	49	49
Awarding Sub Tier Agency Name	49	49	49
Awarding Sub Tier Agency Code	49	49	49
Awarding Office Name	49	49	49
Awarding Office Code	49	49	49
Object Class	0	0	0
Appropriations Account	0	0	0
Budget Authority Appropriated	0	0	0
Obligation	0	0	0
Unobligated Balance	0	0	0
Other Budgetary Resources	0	0	0
Program Activity	0	0	0
Outlay	0	0	0
National Interest Action (No.58)	0	0	0
Disaster Emergency Fund Code (No. 59)	0	0	0
Total Inaccurate Data Elements	**1,911**	**1,911**	**1,911**

Source: Generated by Kearney based upon the results of testing.

Overall Determination of Quality

The CIGIE Guide defines quality as "data that is complete, accurate, and timely, and includes statistical and non-statistical testing results." The CIGIE Guide states that auditors should combine the results of the statistical sample with the results of the non-statistical sample using the methodology in *Exhibit 6*.

Exhibit 6: Quality Assessment Scorecard

	Criteria	Score	Maximum Possible Points With Outlays
Non-Statistical	Timeliness of Agency Submission	5.00	5.00
	Completeness of Summary-Level Data (Files A and B)	10.0	10.00
	Suitability of File C for Sample Selection	8.30	10.00
	Record-Level Linkages (Files C and D)	6.10	7.00
	COVID-19 Outlay Testing Judgmental Sample	8.00	8.00
Statistical	Completeness	13.30	15.00
	Accuracy	26.50	30.00
	Timeliness	13.30	15.00
Total		**90.50**	**100.00**

Source: Prepared by Kearney, based on the CIGIE FAEC Guide under the DATA Act, section 820.05 and the results of Kearney's procedures.

Based on the results of our statistical and non-statistical testing for NSF's DATA Act audit for FY 2020 Q4, NSF scored 90.50 points (out of 100 points), which is a quality rating of "Higher". **Exhibit 7** provides the range of error in determining the quality of the data elements.

Exhibit 7: Data Quality Error Range

Range	Quality Level
0% to 69.999%	Lower
70% to 84.999%	Moderate
85% to 94.999%	Higher
95% to 100%	Excellent

Source: The CIGIE Guide.

NSF reported 14,302 detail award transactions (i.e., records) in its File C submission. Kearney selected a statistically valid sample of 385 transactions (377 FAINs and eight PIIDs), containing 43 and 46 applicable data elements, respectively. We identified sampling error rates and determined out of the 43 and 46 applicable data elements for FAINs and PIIDs, respectively, 1,911 (11.5%) contained completeness, accuracy, and timeliness issues. Based on our test work and the projected error rate of 11.5%, we determined that the quality of NSF's data is considered higher.

Implementation and Use of the Data Standards

We have evaluated NSF's implementation and use of the Government-wide financial data standards for spending information, as developed by OMB and Treasury.

While NSF had implemented and used the data standards to enhance its ability to analyze and reconcile data from multiple sources (e.g., record-level linkage from File C to File D1 [PIIDs] and File D2 [FAINs]), we identified specific transaction types that were not present in File D2, reporting but were reported in File C. Although NSF considers these transactions as legitimate differences for DATA Act reporting, these transactions contributed to completeness, accuracy, and timeliness errors within our testing.

Assessment of Internal Control and Compliance with Laws and Regulations

We assessed internal controls and compliance with laws and regulations necessary to satisfy the audit objectives. Specifically, we assessed internal controls to determine the nature, timing, and extent of testing. Kearney emphasizes that management is responsible for the design, implementation, and operating effectiveness of the agency's internal controls. Kearney evaluated the design, implementation, and operating effectiveness of the processes, systems, and controls that the agency has in place to extract financial and award data reported under the DATA Act for publication on USAspending.gov. Kearney reviewed NSF's DQP, assessed NSF's process for identifying and assessing risks related to spending data, and assessed the completeness, accuracy, timeliness, and quality of FY 2020 Q4 financial and award data submitted by NSF for publication on USAspending.gov. Kearney also assessed NSF's implementation and use of the Government-wide financial data standards established by OMB and the Treasury, as required by

the DATA Act. Additionally, the Kearney leveraged the FY 2021 financial statement audit to assess risk, certain internal controls, and information systems noted during the audit. However, because our review was limited to these internal control components and underlying principles, it may not have disclosed all internal control deficiencies that may have existed at the time of this audit.

FINDINGS

Our performance audit resulted in one finding and one corresponding recommendation, as presented below. For criteria related to the finding, please see *APPENDIX H:* **DATA ACT-RELATED CRITERIA**. Additionally, the recommendations are included in the *Audit Results Summary and Recommendations* section.

Finding #1

The financial assistance award information in NSF's File C (i.e., reportable record-level data) did not always match the FAIN or URI data in File D2 (i.e., detailed information for the record-level transactions reported in File C) to comply with DAIMS Section 1.3.4. NSF did not include all financial assistance transactions reported within File C in its File D2 reporting.

Specifically, NSF's FY 2020 Q4 File contained data elements that did not match in Files C and D2, as follows:

- **Discrepancies identified in the reconciliation:** The NSF File C data included 1,648 instances of FAINs in File C that did not exist in File D2.
- **Discrepancies identified in testing:** Of the 385 transactions selected from File C for detailed FAIN testing, 49 transactions were not included within File D2.

Per NSF's DQP, NSF does not capture transactions for award close-out and post-award close financial adjustments in MyNSF for File D2 reporting in FABS, although these transactions are reported in iTRAK for File C. Per standard business practices, NSF considers these legitimate differences between Files C and D2 that are non-addressable. NSF quantitatively measures these differences as part of its materiality considerations, as well as monitors adjustments for significant increases to the risk of financial misstatement via its Award Reconciliation Report. The "amount" data element includes all Federal Action Obligations. A Federal Action Obligation is defined as the Federal Government's obligation, de-obligation, or liability, in dollars, for an award transaction. NSF's interpretation of this definition is that upward and downward adjustments are not required to be reported as Federal Action Obligations in its MyNSF system, which is the source for File D2.

Due to NSF's business processes and its interpretation of DATA Act guidance, NSF's File D2 DATA Act file submission does not include all financial assistance transactions reported in its File C. As a result, NSF increases the risk of uploading incomplete and inaccurate data to USAspending.gov, which decreases the reliability and quality of the data.

In response to discussions during the audit, NSF officials stated that they plan to implement enhancements to their pre-submission reconciliation process (i.e., NSF's Award Reconciliation Report) to identify accounting adjustment transactions above the (absolute value) threshold of $250,000. This reconciliation will be performed monthly as part of NSF's regular reporting process. Any accounting adjustment transactions that exceed this threshold will require additional NSF review and approval to verify that these are categorized appropriately as legitimate differences. The approved list of adjustment transactions will be included in management's monthly attestation and quarterly certification processes as additional supporting documentation to meet NSF's reporting assurance objectives.

Audit Results Summary and Recommendation

Kearney recommends that NSF fully implement the planned enhancements to verify the current classification of record-level linkage differences between files C and D2.

Management's Response

Kearney reviewed NSF Management's response to the findings and recommendations and noted the following:

- **Recommendation #1:** NSF Management did concur with the finding and recommendation.

Please see *APPENDIX E*: **MANAGEMENT'S RESPONSE** for NSF Management's formal response.

APPENDIX A: PURPOSE, SCOPE, AND METHODOLOGY

Purpose, Scope, and Methodology

The Digital Accountability and Transparency Act of 2014 (DATA Act) requires each Federal agency's Office of Inspector General (OIG) to review a statistically valid sample of the spending data submitted by its agency; assess the completeness, accuracy, timeliness, and overall quality of the data sampled; and evaluate the agency's implementation and use of Government-wide financial data standards. OIGs are required to make a report of the results of the assessment publicly available and submit the report to Congress.

Kearney & Company, P.C. (referred to as "Kearney," "we," and "our" in this document) conducted fieldwork for this performance audit from April 2021 through October 2021. We conducted this performance audit in accordance with the Government Accountability Office's (GAO) Generally Accepted Government Auditing Standards (GAGAS), 2018 revision, issued by the Comptroller General of the United States. Those standards require that Kearney plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on the audit objectives. The purpose of this report is to communicate the results of Kearney's performance audit, as well as our related findings and recommendations.

An audit involves performing procedures to obtain evidence about the performance, effectiveness, and efficiency of a program or agency. The audit procedures selected depend on the auditor's judgment, including an assessment of the risks of noncompliance with regulations and relevant best practices. An audit also includes evaluating the appropriateness of policies and procedures used and the reasonableness of decisions made by management, as well as evaluating the overall presentation of assertions made by management.

The scope of this DATA Act performance audit is Fiscal Year (FY) 2020 Quarter 4 (Q4) financial and award data that the National Science Foundation (NSF) submitted for publication on USAspending.gov, as well as any applicable procedures, certifications, documentation, and controls to achieve this process.

On December 4, 2020, the Council of the Inspectors General on Integrity and Efficiency's (CIGIE) Federal Audit Executive Council (FAEC), in consultation with GAO, published the *CIGIE FAEC Inspectors General Guide to Compliance Under the DATA Act* (Guide), which presents a common methodology and reporting approach for the Inspector General (IG) community to use in performing its mandated work.

The overall objective of our performance audit was to evaluate NSF's compliance with the DATA Act's reporting requirements. Kearney used the Guide as the template for detailed testing procedures and reporting. The Guide lists the testing objectives as the assessment of the:

- Completeness, accuracy, timeliness, and quality of a quarter within the range of FY 2020

Quarter 3 (Q3) through FY 2021 Quarter 2 (Q2) (we selected FY 2020 Q4) for the financial and award data submitted for publication on USAspending.gov.
- Federal agency's implementation and use of Government-wide financial data standards established by the Office of Management and Budget (OMB) and the Department of the Treasury (Treasury).

To accomplish these objectives, we obtained an understanding of the regulatory criteria related to NSF's responsibilities to report financial and award data under the DATA Act. Kearney assessed NSF's systems, processes, and internal controls in place over data management under the DATA Act. We also assessed the general and application controls pertaining to the financial management systems (i.e., iTRAK) from which the data elements were derived and linked. Kearney assessed NSF's internal controls in place over financial and award data reported to USAspending.gov per OMB Circular A-123, *Management's Responsibility for Internal Control*. We also reviewed a statistically valid sample from FY 2020 Q4 financial and award data submitted by NSF on USAspending.gov. Kearney assessed the completeness, accuracy, timeliness, and quality of the financial and award data sampled. Lastly, we assessed NSF's implementation and use of the 59 data definition standards established by OMB and Treasury.

According to the Guide, in order to accomplish the objectives of the DATA Act compliance review, OIGs should:

- Obtain an understanding of any regulatory criteria related to its agency's responsibilities to report financial and award data under the DATA Act
- Review its agency's Data Quality Plan (DQP)
- Assess the internal and information system controls in place as they relate to the extraction of data from the source systems and the reporting of data to the Treasury DATA Act Broker (Broker) in order to assess audit risk and design audit procedures
- Review and reconcile the FY 2020 Q4 summary-level data submitted by the agency for publication on USAspending.gov
- Review a statistically valid sample from FY 2020 Q4 financial and award data submitted by the agency for publication on USAspending.gov
- Assess the completeness, accuracy, timeliness, and quality of the financial and award data sampled
- Assess the agency's implementation and use of the 59 data definition standards established by OMB and Treasury.

In accordance with the Guide, the scope of this audit was NSF's submission of FY 2020 Q4 data. According to Section 100, *Introduction*, of the Guide:

"Audit teams should adhere to the overall methodology, objectives, and audit procedures outlined in this guide to the greatest extent possible… This Guide presents a common methodology and reporting approach for the IG community to use in performing its mandated DATA Act work. However, we realize that each Federal agency presents a unique set of implementation challenges and risks. If necessary, audit teams may modify this guide, but must use professional judgement when designing alternative audit

procedures. Audit teams must document the reasons for all deviations from the Guide."

Generally, we conducted our audit based upon this guidance. Professional judgment was used to customize certain recommended testing procedures based on NSF's environment, systems, and data.

To obtain background information, we researched and reviewed Federal laws and regulations, as well as prior GAO audit reports. Kearney also reviewed the United States Code (U.S.C.), OMB Circulars and Memorandums (M), guidance published by the Treasury, and information available on NSF's intranet.

Kearney met with NSF officials to gain an understanding of the processes used to implement and use the data standards. Specifically, we obtained an understanding of the processes used to create and perform Quality Controls (QC) on the DATA Act submission. This understanding included the systems used to process procurement and financial assistance awards. We also obtained an understanding of the processes to record procurement and financial assistance awards in NSF's systems and other Federal systems.

The Guide instructed audit teams to assess the agencies use and implementation of 59 standard data elements. Six of these data elements are reported at the summary-level in File A or File B, rather than the individual transaction-level. As reported in the ***ASSESSMENT OF THE DATA ACT SUBMISSION*** section of this report, to test these data elements, Kearney tested procedures implemented by NSF to confirm the validity and accuracy of these six summary-level data elements. Specifically, we determined that the data was appropriately linked between File A and File B and the Standard Form (SF)-133, *Report on Budget Execution and Budgetary Resources*. For the remaining 53 data elements, Kearney selected a statistical sample of individual transactions included in NSF's File C submission. See additional information in the ***Detailed Sampling Methodology*** section of this appendix.

Kearney developed its finding and concluded on the objectives outlined in the Guide under the DATA Act. Kearney executed planning, testing, and reporting over the FY 2020 Q4 financial and award data submitted for publication by NSF on USAspending.gov. The summarized results of the Planning and Testing Phases can be found throughout this report, including any identified findings and recommendations. The NSF's OIG will transmit the final report.

We tested 385 File C Transactions, which were sampled from an initial population of 14,302 File C items. The results of the testing yielded an overall Error Rate of 11.5% and a Correctness Rate of 88.5%. This yielded a Data Quality Score of 90.50, which is categorized as "Higher Quality" data. Further, we tested 45 Coronavirus Disease 2019 (COVID-19) outlays, which were sampled from a population of 1,108 File C items related to COVID-19 outlays. No exceptions were identified during COVID-19 outlay testing.

Kearney also performed reconciliations over FY 2020 Q4 data submissions over the following:

- File A to SF-133

- File A to File B
- File B to File C
- File C to File D1/D2.

Apart from the File C to File D2 reconciliation, we did not note any significant findings. The File C to File D2 reconciliation contained record-level linkage issues that derived from NSF's business practices related to adjustments for award closeout and post-award closeouts.

Prior Reports

In the FY 2017 DATA Act audit, Kearney reported four findings and four corresponding recommendations over instances of incomplete data elements, inaccurate data elements, untimely transactions, and issues with DATA quality for NSF's FY 2017 Q2 submission. Kearney noted that the data reported in Files A and B was complete, accurate, timely, and met quality requirements. However, after reviewing a statistically valid sample of spending data reported in Files C, D1, D2, and E, Kearney noted that data reported was incomplete, inaccurate, and untimely. Kearney reviewed a sample of 254 transactions and determined 98.8% of transactions were incomplete, 62.2% of transactions were inaccurate, and 0.8% of transactions were untimely. Additionally, Kearney identified three types of errors, two of which were Government-wide reporting errors (Broker errors and Award Submission Portal [ASP] errors) at the Treasury-level. As a result, Kearney calculated separate rates for NSF errors, the Broker errors, and ASP (now known as Financial Assistance Broker Submission [FABS])-derived errors to distinguish between the nature and extent of variances identified at the transaction-level.

In the FY 2019 DATA Act audit, Kearney reported three findings and four corresponding recommendations over instances of incomplete record-level linkages and inaccurate reporting of data elements within the System for Award Management (SAM). Kearney concluded that the FY 2019 NSF Q1 DATA Act submission did not provide high-quality information according to the Guide Data Quality Error Range guidelines.

In response to the prior-year findings and as part of their DQP process, NSF management implemented additional controls over the DATA Act reporting approach and conducted an assessment for each GAO *Standards for Internal Control in the Federal Government* (Green Book) principle, prepared a summary of internal controls deficiencies, and provided an overall assessment of internal controls. The implementation of a retrospective review was utilized to mitigate the File C to File D1/D2 linkage issues from 2019.

Work Related to Internal Controls

Based upon the information obtained from NSF during preliminary audit procedures, Kearney performed a risk assessment that identified audit risks related to the audit objectives. NSF files submitted for the DATA Act are often interrelated and repeat information provided during separate submissions to Treasury and OMB for other purposes. To ensure the completeness, accuracy, timeliness, and quality of the data submitted for the DATA Act, agencies were required to perform QC procedures of the data prior to submission, including ensuring that there

were appropriate linkages between the DATA Act files and the files from existing Government-wide reporting systems. Additionally, OMB guidance states that when certifying the DATA Act submission, Senior Accountable Officials (SAO) are "providing reasonable assurance that their internal controls support the reliability and validity of the agency account-level and award-level data."

According to DATA Act guidance, agencies are required to confirm that: 1) the information reported in File A matched the December 31, 2020 SF-133; 2) File A matched the totals included in File B; 3) the transactions included in Files C were included in Files D1 or D2, as applicable; and 4) the transactions included in Files D1 and D2, as applicable, were included in File C. Kearney noted that NSF effectively performed these QC checks between Files A and B. As a result, NSF's reconciliations between File A and the SF-133 and between Files A and B produced no differences. Kearney re-performed these two QC procedures and noted no differences. Additionally, through these reconciliations, we validated the required data elements, which are presented in the files.

Kearney performed a reconciliation between Files C and D1/D2, as well as a reconciliation of data linkages between Files C and D1/ D2 and noted various differences within the File C to D2 reconciliation. We did not note any issues with the File C to D1 reconciliation. We determined that the linkage discrepancies between File C to File D2 were the result of NSF's determination that differences resulting from necessary financial transactions required after the award expired, which are reported on File C but omitted from File D2, did not need to be corrected.

In addition to performing this DATA Act performance audit, Kearney also performs NSF's financial statement audit and Federal Information Security Management Act of 2002 (FISMA) performance audit. Accordingly, we relied on this work to test internal controls specifically related to the DATA Act. Kearney tested controls over grants processing/monitoring, grant closeouts, interface with other awards systems (e.g., Awards), and the procurement/contracts management process (e.g., obligations). Kearney also tested security management, access controls, configuration management, segregation of duties, and contingency planning over NSF's iTRAK (i.e., financial accounting system) and MyNSF systems (i.e., processing all award actions, including funding and non-funding). Kearney relied on this work to understand the internal controls as they related to the DATA Act performance audit.

On June 6, 2018, Appendix A of the A-123 Circular was amended by OMB, creating a requirement for agencies to develop a DQP to achieve the objectives of the DATA Act. The DQP considers incremental risks to data quality in Federal spending data and any controls that would manage such risks in accordance with OMB M-18-16, *New Requirement for Data Quality Plan*. The purpose of the DQP is to identify and develop a control structure tailored to address identified risks. Kearney reviewed NSF's DQP and identified the following elements required by the DATA Act: organizational structure, key processes, management's roles and responsibilities, and NSF's testing plan and identification of high risks.

In December 2020, GAO issued the report Agencies Made Progress in Establishing Governance, but Need to Address Key Milestones (GAO-21-152) for its audit of NSF and three other federal

agencies on data governance. GAO noted in the report that NSF fully addressed all required components of the data quality plans required by OMB guidance. NSF updated its DQP prior to the FY 2021 NSF DATA Act Performance Audit. Kearney reviewed the updated DQP and found that the updates made were appropriate and, ultimately, led to a more robust control environment.

Kearney identified additional internal controls, including general and application controls in source systems designed by NSF, to ensure that data was complete, accurate, and timely; however, we chose not to rely on or specifically test those controls to determine NSF's implementation and use of the data standard. Based on the professional judgment of the Kearney, an approach for testing additional internal controls would have been inefficient for purposes of this audit. In addition, Kearney identified data elements that rely solely on accurate human data entry (e.g., a vendor's place of performance) rather than source system internal controls. Accordingly, we designed substantive procedures that enabled us to obtain sufficient and appropriate evidence to conclude upon the audit objectives.

Use of Computer-Processed Data

As discussed in the **BACKGROUND** *s*ection of this report, the files included in NSF's DATA Act submission were generated from multiple systems, including NSF-owned systems and systems used across the Federal Government. As the objective of this engagement was to audit the amounts and information included in the submission by tracing information to source documentation, as described in the *ASSESSMENT OF THE DATA ACT SUBMISSION* section of this report, additional steps were not considered necessary to assess the sufficiency of computer-processed data.

Detailed Sampling Methodology

The Guide initially recommended a sample of 385 certified spending data transactions for transaction-level testing from NSF's FY 2020 Q4 DATA Act File C submission. Kearney selected a sample of 385 items for our testing over File C transactions. *Exhibit 8* provides details on File C and the sample selected.

Exhibit 8: File C Analysis and Sampling

	Number of Transactions	Amount Obligated
Total Transactions in File C	14,302	4,432,839,444
Sampled Transactions (amount)	385	203,100,504
Sampled Transactions (percent)	2.69%	4.58%

Source: Prepared by Kearney, based upon analysis of NSF's FY 2020 Q4 File C.
*Kearney analyzed the File C sample selection as absolute values to include upward and downward adjustments.

APPENDIX B: REQUIRED DATA ELEMENTS FOR FEDERAL AGENCY REPORTING

Exhibit 9: Required Data Elements for Federal Agency Reporting

Data Element No.	Data Element	Data Description	Submission File
1	Awardee/Recipient Legal Entity Name	The name of the awardee or recipient that relates to the unique identifier.	Files D1 and D2
2	Awardee/Recipient Unique Identifier	The unique identification number for an awardee or recipient; most commonly the nine-digit number assigned by Dun & Bradstreet, referred to as the Data Universal Numbering System (DUNS) number.	Files D1, D2, E and F
3	Ultimate Parent Unique Identifier	The unique identification number for the ultimate parent of an awardee or recipient.	Files D1, D2 and E
4	Ultimate Parent Legal Entity Name	The name of the ultimate parent of the awardee or recipient. Currently, the name is from the global parent DUNS number.	Files D1, D2 and E
5	Legal Entity Address	The awardee or recipient's legal business address where the office represented by the Unique Entity Identifier (as registered in the System for Award Management [SAM]) is located.	Files D1 and D2
6	Legal Entity Congressional District	The congressional district in which the awardee or recipient is located. This is not a required data element for non-United States addresses.	Files D1 and D2
7	Legal Entity Country Code	Code for the country in which the awardee or recipient is located, using the International Organization for Standardization (ISO) 3166-1 Alpha-3 GENC Profile, and not the codes listed for those territories and possessions of the United States already identified as "states."	Files D1 and D2
8	Legal Entity Country Name	The name corresponding to the Country Code.	Files D1 and D2
9	Highly Compensated Officer Name	The first name, middle initial, and last name of an individual identified as one of the five most highly compensated "Executives."	File E
10	Highly Compensated Officer Total Compensation	The cash and non-cash dollar value earned by one of the five most highly compensated "Executives" during the awardee's preceding Fiscal Year (FY).	File E
11	Federal Action Obligation	Amount of Federal Government's obligation, de-obligation, or liability, in dollars, for an award transaction.	Files D1 and D2
12	Non-Federal Funding Amount	For financial assistance, the amount of the award funded by non-Federal source(s), in dollars.	File D2
13	Amount of Award	The cumulative amount obligated by the Federal Government for an award, calculated by USAspending.gov or a successor site.	Files D1 and D2
14	Current Total Value of Award	For procurement, the total amount obligated to date on a contract, including the base and exercised options.	File D1
15	Potential Total Value of Award	For procurement, the total amount that could be obligated on a contract, if the base and all options are	File D1

Data Element No.	Data Element	Data Description	Submission File
		exercised.	
16	Award Type	Description (and corresponding code) that provides information to distinguish type of contract, grant, or loan and provides the user with more granularity into the method of delivery of the outcomes.	File D1
17	North American Industrial Classification System (NAICS) Code	The identifier that represents the NAICS Code assigned to the solicitation and resulting award identifying the industry in which the contract requirements are normally performed.	File D1
18	NAICS Description	The title associated with the NAICS Code.	File D1
19	Catalog of Federal Domestic Assistance (CFDA) Number	The number assigned to a Federal area of work in the CFDA.	File D2
20	CFDA Title	The title of the area of work under which the Federal award was funded in the CFDA.	File D2
21	Treasury Account Symbol (TAS) (excluding sub-account)	The account identification codes assigned by the Department of the Treasury (Treasury) to individual appropriation, receipt, or other fund accounts.	File C[c]
22	Award Description	A brief description of the purpose of the award.	Files D1 and D2
23	Award Modification/Amendment Number	The identifier of an action being reported that indicates the specific subsequent change to the initial award.	Files D1 and D2
24	Parent Award Identification (ID) Number	The identifier of the procurement award under which the specific award is issued (e.g., a Federal Supply Schedule [FSS]).	File D1
25	Action Date	The date the action being reported was issued/signed by the Government or a binding agreement was reached.	Files D1 and D2
26	Period of Performance Start Date	The date on which awardee effort begins or the award is otherwise effective.	Files D1 and D2
27	Period of Performance Current End Date	The current date on which awardee effort completes or the award is otherwise ended.	Files D1 and D2
28	Period of Performance Potential End Date	The date on which awardee effort is completed or the award is otherwise ended.	File D1
29	Ordering Period End Date	The date on which no additional orders referring to it (i.e., the award) may be placed.	File D1
30	Primary Place of Performance Address	The address where the predominant performance of the award will be accomplished. Components include: Address Lines 1 and 2, City, County, Agency Code, and ZIP+4 or Postal Code.	Files D1 and D2
31	Primary Place of Performance Congressional District	United States congressional district where the predominant performance of the award will be accomplished; derived from the Primary Place of Performance Address.	Files D1 and D2
32	Primary Place of Performance Country Code	Country code where the predominant performance of the award will be accomplished.	Files D1 and D2
33	Primary Place of Performance Country Name	Name of the country represented by the country code where the predominant performance of the award will be accomplished.	Files D1 and D2
34	Award ID Number	The unique identifier of the specific award being	Files C, D1

Data Element No.	Data Element	Data Description	Submission File
		reported (Federal Award Identification Number [FAIN] for financial assistance and Procurement Instrument Identifier [PIID] for procurement).	and D2
35	Record Type	Code indicating whether an action is an individual transaction or aggregated.	File D2
36	Action Type	A technical communication document intended to give assistance to users of a particular system.	Files D1 and D2
37	Business Types	A collection of indicators of different types of recipients based on socio-economic status and organization/business areas.	File D2
38	Funding Agency Name	Name of the department or establishment of the Government that provided the preponderance of the funds for an award and/or individual transactions related to an award.	Files D1 and D2
39	Funding Agency Code	The three-digit Common Government-wide Accounting Classification (CGAC) agency code of the department or establishment of the Government that provided the preponderance of the funds for an award and/or individual transactions related to an award.	Files D1 and D2
40	Funding Sub Tier Agency Name	Name of the level 2 organization that provided the preponderance of the funds obligated by this transaction.	Files D1 and D2
41	Funding Sub Tier Agency Code	Identifier of the level 2 organization that provided the preponderance of the funds obligated by this transaction.	Files D1 and D2
42	Funding Office Name	Name of the level n organization that provided the preponderance of the funds obligated by this transaction.	Files D1 and D2
43	Funding Office Code	Identifier of the level n organization that provided the preponderance of the funds obligated by this transaction.	Files D1 and D2
44	Awarding Agency Name	The name associated with a department or establishment of the Government, as used in the Treasury Account Fund Symbol (TAFS).	Files D1 and D2
45	Awarding Agency Code	A department or establishment of the Government, as used in the TAFS.	Files D1 and D2
46	Awarding Sub Tier Agency Name	Name of the level 2 organization that awarded, executed, or is otherwise responsible for the transaction.	Files D1 and D2
47	Awarding Sub Tier Agency Code	Identifier of the level 2 organization that awarded, executed, or is otherwise responsible for the transaction.	Files D1 and D2
48	Awarding Office Name	Name of the level n organization that awarded, executed, or is otherwise responsible for the transaction.	Files D1 and D2
49	Awarding Office Code	Identifier of the level n organization that awarded, executed, or is otherwise responsible for the transaction.	Files D1 and D2
50	Object Class	Categories in a classification system that presents obligations by the items or services purchased by the	Files B and C

Data Element No.	Data Element	Data Description	Submission File
		Federal Government.	
51	Appropriations Account	The basic unit of an appropriation generally reflecting each unnumbered paragraph in an appropriation act.	Files A and B[c]
52	Budget Authority Appropriated	A provision of law (not necessarily in an appropriations act) authorizing an account to incur obligations and to make outlays for a given purpose.	File A and B
53	Obligation	A legally binding agreement that will result in outlays, immediately or in the future.	Files A, B, and C
54	Unobligated Balance	The cumulative amount of budget authority that remains available for obligation under law in unexpired accounts at a point in time.	Files A and B
55	Other Budgetary Resources	New borrowing authority, contract authority, and spending authority from offsetting collections provided by Congress in an appropriations act or other legislation, or unobligated balances of budgetary resources made available in previous legislation, to incur obligations and to make outlays.	File A and B
56	Program Activity	A Federal mandate that all electronic and Information Technology (IT) developed, procured, maintained, or used by the Federal Government be accessible to people with disabilities.	Files B[b]
57	Outlay	A specific activity or project, as listed in the program and financing schedules of the annual budget of the United States Government.	Files A and B[a]
163	National Interest Action (NIA) (No. 58)	On March 13, 2020, a NIA code (P20C) was added to the Federal Procurement Data System (FPDS) to help identify procurement actions related to the Coronavirus Disease 2019 (COVID-19) response. To promote full, clear, and consistent transparency in the tracking of COVID-19-related procurement actions, agencies are directed to assign this NIA code to all procurement actions reported into FPDS that are issued in response to the pandemic. This includes new awards for supplies and services, as well as modifications that are issued to address COVID-19, irrespective of whether the contract being modified was originally awarded to address COVID-19. The code should also be used in connection with any procurement authority, including but not limited to special emergency procurement authorities identified under Federal Acquisition Regulation (FAR) Subpart 18.2.	File D1
430	Disaster Emergency Fund Code (DEFC) (No.59)	The Office of Management and Budget (OMB), working with the Department of the Treasury's (Treasury) Bureau of Fiscal Service (Fiscal Service), has identified a Governmentwide Treasury Account Symbol Adjusted Trial Balance System (GTAS) attribute DEFC to track appropriations classified as disaster or emergency.	Files B and C

Source: **https://max.gov/maxportal/assets/public/offm/DataStandardsFinal.htm** and OMB M-20-21,

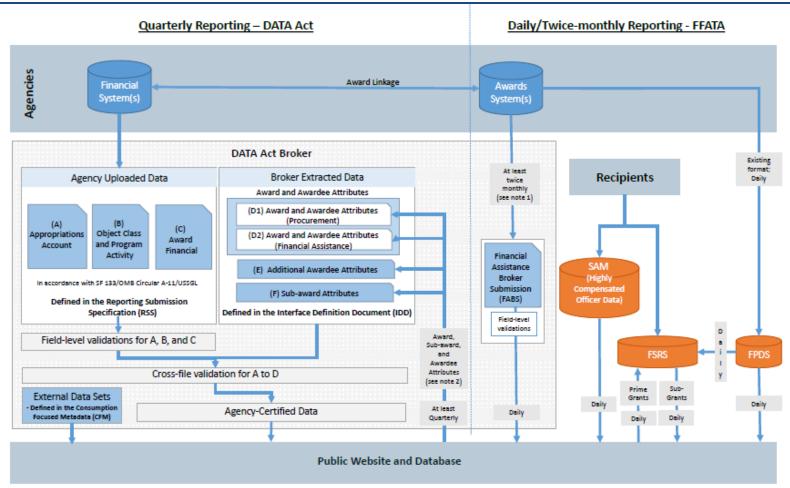*Implementation Guidance for Supplemental Funding Provided in Response to the Coronavirus Disease (COVID-19)*

[a] Per the DATA Act and OMB reporting guidelines, this data element is required to be submitted via Files A and B and may also be optionally submitted via File C. National Science Foundation (NSF) elected to not report this optional data element in File C. Accordingly, we tested this data element within the File A and B submissions.

[b] Per DATA Act and OMB reporting guidelines, this data element is required to be submitted via File B and may also be optionally submitted via File C. NSF elected to not report this optional data element in File C. Accordingly, we tested this data element in the File B submission.

[c] The data element's TAS and Appropriations Account are the same. To avoid double counting, Kearney aligned the appropriation account field to Files A and B and the TAS to File C.

APPENDIX C: DATA ACT INFORMATION FLOW DIAGRAM

Source: Department of the Treasury (Treasury). Amendments made to the DATA Act Information Model Schema (DAIMS) can be found at
https://www.fiscal.treasury.gov/data-transparency/resources.html/

APPENDIX D: AGENCY RESULTS FOR THE DATA ELEMENTS

Exhibit 10: Summary Results of Testing

Data Element No.	Data Element Name	Error Rate		
		2021	**2019**	**% Change**
1	Awardee/Recipient Legal Entity Name	0	57.57%	-57.57%
2	Awardee/Recipient Unique Identifier	0	57.57%	-57.57%
3	Ultimate Parent Unique Identifier	11.54%	57.57%	-46.03%
4	Ultimate Parent Legal Entity Name	11.54%	57.57%	-46.03%
5	Legal Entity Address	11.54%	57.57%	-46.03%
6	Legal Entity Congressional District	11.54%	57.57%	-46.03%
7	Legal Entity Country Code	11.54%	57.57%	-46.03%
8	Legal Entity Country Name	11.54%	57.57%	-46.03%
9*	Highly Compensated Officer Name	N/A	N/A	N/A
10*	Highly Compensated Officer Total Compensation	N/A	N/A	N/A
11	Federal Action Obligation	0	57.57%	-57.57%
12*	Non-Federal Funding Amount	0	0	0.00%
13*	Amount of Award	11.54%	57.57%	-46.03%
14	Current Total Value of Award	0	0	0.00%
15	Potential Total Value of Award	0	0	0.00%
16	Award Type	0	57.57%	57.57%
17	North American Industrial Classification System (NAICS) Code	0	0	0.00%
18	NAICS Description	0	0	0.00%
19	Catalog of Federal Domestic Assistance (CFDA) Number	11.54%	57.57%	-46.03%
20	CFDA Title	11.54%	57.57%	-46.03%
21*	Treasury Account Symbol (excluding Sub-Account)	N/A	N/A	N/A
22	Award Description	11.54%	57.57%	-46.03%
23	Award Modification/Amendment Number	11.54%	57.57%	-46.03%
24	Parent Award Identification (ID) Number	11.54%	0	0.00%
25	Action Date	11.54%	57.57%	-46.03%
26	Period of Performance Start Date	11.54%	57.57%	-46.03%
27	Period of Performance Current End Date	11.54%	57.57%	-46.03%
28	Period of Performance Potential End Date	0	0	0.00%
29	Ordering Period End Date	0	0	0.00%
30	Primary Place of Performance Address	11.54%	57.57%	-46.03%
31	Primary Place of Performance Congressional District	11.54%	57.57%	-46.03%
32	Primary Place of Performance Country Code	11.54%	57.57%	-46.03%
33	Primary Place of Performance Country Name	11.54%	57.57%	-46.03%
34	Award ID Number (Procurement Instrument Identifier [PIID]/Federal Award Identification Number [FAIN])	0	57.57%	-57.57%
35	Record Type	11.54%	57.57%	-46.03%
36	Action Type	11.54%	57.57%	-46.03%
37	Business Types	11.54%	57.57%	-46.03%
38	Funding Agency Name	11.54%	57.57%	-46.03%
39	Funding Agency Code	11.54%	57.57%	-46.03%
40	Funding Sub Tier Agency Name	11.54%	57.57%	-46.03%
41	Funding Sub Tier Agency Code	11.54%	57.57%	-46.03%
42	Funding Office Name	11.54%	57.57%	-46.03%
43	Funding Office Code	11.54%	57.57%	-46.03%
44	Awarding Agency Name	11.54%	57.57%	-46.03%
45	Awarding Agency Code	11.54%	57.57%	-46.03%

Data Element No.	Data Element Name	Error Rate		
		2021	**2019**	**% Change**
46	Awarding Sub Tier Agency Name	11.54%	57.57%	-46.03%
47	Awarding Sub Tier Agency Code	11.54%	57.57%	-46.03%
48	Awarding Office Name	11.54%	57.57%	-46.03%
49	Awarding Office Code	11.54%	57.57%	-46.03%
50	Object Class	0	0	0.00%
51	Appropriations Account	0	0	0.00%
52*	Budget Authority Appropriated	N/A	N/A	N/A
53	Obligation	0	0	0.00%
54*	Unobligated Balance	N/A	N/A	N/A
55*	Other Budgetary Resources	N/A	N/A	N/A
56*	Program Activity	0	N/A	N/A
57*	Outlay	0	N/A	N/A
163	National Interest Action (NIA) (No.58)	0	N/A	N/A
430	Disaster Emergency Fund Code (DEFC) (No. 59)	0	N/A	N/A

Source: Prepared by Kearney & Company, P.C. (Kearney) based upon analysis of the National Science Foundation's (NSF) Fiscal Year (FY) 2020 Quarter 4 (Q4) File C.
* NSF did not report on this optional Data Element, or the Data Element is not part of the File C schema; therefore, Kearney did not count this Data Element in the final error rate

Analysis of Errors in Data Elements Not Attributable to the Agency

There were no errors in data elements that are not attributable to NSF. Data elements that are not attributable to the agency would include data elements that were caused by a third-party system, such as Treasury's DATA Act Broker (Broker). The Analysis of Errors Not Attributable to the Agency would not be factored into the scorecard results for determining quality.

APPENDIX E: MANAGEMENT'S RESPONSE

MEMORANDUM

DATE: October 29, 2021

TO: Allison Lerner, Inspector General

FROM: Teresa Grancorvitz, DATA Act Senior Accountable Official,
Chief Financial Officer and Office Head, Budget, Finance and Award
Management (BFA)

SUBJECT: Management's Response to Official Draft, FY 2021 Performance Audit
Report on NSF's Implementation of the DATA Act

Thank you for the opportunity to respond to the official draft report provided on October 25, 2021, "Fiscal Year (FY) 2021 Implementation of the Digital Accountability and Transparency Act of 2014 (DATA Act) Performance Audit".

The National Science Foundation (NSF) agrees with the statement in the Executive Summary of the report that the discrepancies identified by the independent auditor, Kearney & Company (Kearney) solely resulted from legitimate differences between files due to accounting adjustments, an area in which NSF and Kearney have differing interpretations of DATA Act reporting guidance. We also appreciate the report's recognition that Kearney's 11.5% projected error rate for data completeness, accuracy, and timeliness was the direct result of these legitimate differences, specifically, NSF's award close-out and post-award close financial adjustment transactions.

Since the FY 2019 DATA Act Performance Audit, NSF has achieved several milestones to help clarify its normal business practice surrounding these specific transactions in government-wide DATA Act guidance and enhanced its existing monitoring and oversight controls. Specifically, NSF worked with the Department of Treasury (Treasury) to add clarifying language in two consecutive DATA Act Information Model Schema (DAIMS) policy updates and completed an audit with the Government Accountability Office (GAO) which concluded that NSF fully addressed all required components of the data quality plans required by Office of Management and Budget (OMB) guidance. NSF also expanded its reconciliation process to measure the quantitative materiality of these legitimate differences within the reporting window. Since the inception of these control enhancements, the transactions subject to these interpretation differences have accounted for approximately 1% of NSF's total annual transaction volume reported to USASpending.gov. NSF is appreciative that Kearney recognized all of NSF's efforts by closing all recommendations from the FY 2019 performance audit.

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The Council of the Inspectors General on Integrity and Efficiency's (CIGIE's) *Inspectors General Guide to Compliance under the DATA Act* provides the audit team with the flexibility to use expert judgement in assessing the reasonableness of agency explanations on variances. Although Treasury's government-wide policy updates did not impact the final evaluation of NSF's variances in the FY 2021 audit report, we are pleased with the report's conclusion that the quality of NSF data is considered "higher" based on the CIGIE Guide benchmarks, and that these policy interpretation differences did not have a material impact to NSF's Data Quality Score.

As the Senior Accountable Official (SAO), I certify the quarterly data submissions and our noted explainable differences, in line with our Data Quality Plan. The rigor with which staff review and validate the monthly data submissions is reflected through the closure of all FY 2019 audit recommendations, and the final determination of NSF's higher data quality in the FY 2021 audit. I am grateful for the NSF DATA Act Working Group's diligence in working with Treasury to address policy clarifications from the FY 2019 audit, and for their efforts in implementing a robust monthly reconciliation and reporting process for NSF to comply with the DATA Act requirements of OMB Memorandum M-20-21, *Implementation Guidance for Supplemental Funding Provided in Response to the Coronavirus Disease 2019 (COVID-19)*.

I am further pleased that despite our inability to reach a consensus on how to interpret DATA Act reporting requirements for these legitimate differences, Kearney issued a recommendation that is actionable and feasible under NSF's normal business practice. Our collective ability to achieve a path forward to permanently resolve this issue is a testament to the hard work of our staff and their commitment to collaborating around DATA Act stewardship. I am confident that you share my gratitude and appreciation for their work. I also want to thank Kearney for their professionalism and willingness to engage with my staff throughout this audit.

NSF concurs with the finding and recommendation and plans to implement the related enhancements to its reconciliation process in FY 2022. These enhancements will provide additional monitoring and reconciliation controls over accounting adjustments that could be considered material to the reporting process. NSF remains committed to the DATA Act's goals of improving financial data transparency and reducing administrative burden. NSF continues to demonstrate leadership in our business processes relating to federal financial assistance and is a dedicated community partner with an outstanding commitment to collaboration on continuously improving and clarifying government-wide standards to achieve transparency and accountability.

We look forward to the next steps and remain committed to close collaboration with your staff on these issues. If you have any questions, please do not hesitate to contact me at (703) 292-8200 or Jesse Simons at (703) 292-4888.

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APPENDIX F: ABBREVIATIONS AND ACRONYMS

Acronym	Definition
AFR	Agency Financial Report
ASP	Award Submission Portal
Broker	Treasury's DATA Act Broker
CFDA	Catalog of Federal Domestic Assistance
CFO	Chief Financial Officer
CGAC	Common Government-wide Accounting Classification
CIGIE	Council of the Inspectors General on Integrity and Efficiency
CO	Contracting Officer
COVID-19	Coronavirus Disease 2019
DAIMS	DATA Act Information Model Schema
DATA Act	Digital Accountability and Transparency Act of 2014
DEFC	Disaster Emergency Fund Code
DQP	Data Quality Plan
DUNS	Data Universal Numbering System
ERM	Enterprise Risk Management
FABS	Financial Assistance Broker Submission
FAEC	Federal Audit Executive Council
FAIN	Federal Award Identification Number
FAM	Financial Audit Manual
FAQ	Frequently Asked Questions
FAR	Federal Acquisition Regulation
FFATA	Federal Funding Accountability and Transparency Act of 2006
Fiscal Service	Bureau of Fiscal Service
FISMA	Federal Information Security Management Act of 2002
FPDS-NG	Federal Procurement Data System – Next Generation
FSRS	FFATA Sub-award Reporting System
FSS	Federal Supply Schedule
FY	Fiscal Year
GAGAS	Generally Accepted Government Auditing Standards
GAO	Government Accountability Office
Green Book	*Standards for Internal Control in the Federal Government*
GSA	General Services Administration
GTAS	Government-wide Treasury Account Symbol Adjusted Trial Balance System
Guide	Inspectors General Guide to Compliance under the DATA Act
ID	Identification
IDD	Interface Definition Document
IG	Inspector General
ISO	International Organization for Standardization
IT	Information Technology
Kearney	Kearney & Company, P.C.
M	Memorandum
MD&A	Management Discussion and Analysis
NAICS	North American Industrial Classification System
NIA	National Interest Action
NSF	National Science Foundation
OCFO	Office of the Chief Financial Officer
OIG	Office of Inspector General
OMB	Office of Management and Budget

Acronym	Definition
PIID	Procurement Instrument Identifier
PL	Public Law
PMO	Program Management Office
QC	Quality Control
Q1	Quarter 1
Q2	Quarter 2
Q3	Quarter 3
Q4	Quarter 4
RSS	Reporting Submission Specification
SAM	System for Award Management
SAO	Senior Accountable Official
SF	Standard Form
TAFS	Treasury Account Fund Symbol
TAS	Treasury Account Symbol
Treasury	Department of the Treasury
URI	Unique Record Identifier
U.S.C.	United States Code
USSGL	United States Standard General Ledger
V.	Version

APPENDIX G: GUIDANCE RELATED TO FEDERAL AGENCY ACCOUNTABILITY AND TRANSPARENCY

- Office of Management and Budget (OMB) Memorandum (M)-10-06, *Open Government Directive*, provides guidance for Executive departments and agencies to implement the principles of transparency and open Government. This includes publishing Government information online and taking steps toward improving the quality of published Government information. The *Open Government Directive – Federal Spending Transparency* and the *Open Government Directive – Framework for the Quality of Federal Spending Information* gives guidance to Federal agencies in implementing the requirements in OMB-M-10-06

- OMB Memorandum, *Open Government Directive – Federal Spending Transparency*, April 6, 2010, established a deadline for agencies to initiate sub-award reporting, initiated requirements for agencies to maintain metrics on the quality and completeness of Federal spending data provided, and announced the release of the USAspending.gov website

- OMB M-18-16, *Appendix A to OMB Circular No. A-123, Management of Reporting and Data Integrity Risk*, offers Federal agencies the flexibility to determine which control activities are necessary to achieve reasonable assurance over internal controls and processes that support overall data quality contained in agency reports. This includes a requirement that agencies implement a Data Quality Plan (DQP), which is effective Fiscal Year (FY) 2019 through FY 2021, at a minimum

- OMB Management Procedures M-2016-03, *Additional Guidance for DATA Act Implementation: Implementing Data-Centric Approach for Reporting Federal Spending Information*, provides additional guidance to Federal agencies on reporting Federal appropriations account summary-level and Federal award-level data to USAspending.gov, in accordance with Federal Funding Accountability and Transparency Act (FFATA) and as amended by the Digital Accountability and Transparency Act of 2014 (DATA Act). This memorandum also discusses the requirement for Federal agencies to associate data in agency financial systems with a unique award identification number (Award Identification [ID]) to facilitate the linkage of these two levels of data

- OMB M-17-04, *Additional Guidance for DATA Act Implementation: Further Requirements for Reporting and Assuring Data Reliability* provides additional guidance to Federal agencies on reporting to USAspending.gov. This guidance provides specific technical assistance on certain matters (e.g., awards involving intra-governmental transfers and quarterly Senior Accountable Official [SAO] assurances)

- OMB M-20-21, *Implementation Guidance for Supplemental Funding Provided in Response to the Coronavirus Disease (COVID-19)* directs agencies to leverage and continue to employ existing financial transparency and accountability mechanisms wherever possible. In balancing speed with transparency, agencies are to consider the three core principles: mission achievement, expediency, and transparency and accountability

- DATA Act Information Model Schema (DAIMS), Version (v).2.0, issued by the Department of the Treasury (Treasury) on May 6, 2020, is the authoritative source for the terms, definitions, formats, and structures of the data elements. DAIMS provides requirements for Federal agencies on reporting to the Treasury's DATA Act Broker

(Broker)

- Federal Spending Transparency Data Standards, in accordance with the DATA Act, issued by OMB and Treasury, established the set of Government-wide data standards for Federal funds made available to or expended by Federal agencies. Agencies were required to report financial data in accordance with these standards, beginning in FY 2017 Quarter 2 (Q2).

APPENDIX H: DATA ACT-RELATED CRITERIA

The following section includes the criteria utilized to develop our findings noted in the **Findings** section within the body of the report.

Public Law (PL) 109-282 – Sept 26, 2006, Federal Funding Accountability and Transparency Act of 2006 (FFATA), Section 2, *Full Disclosure of Entities Receiving Federal Funding*, states the following:

> "(2) FEDERAL AWARD.—The term ''Federal award''—
> (A) means Federal financial assistance and expenditures that—
> (i) include grants, subgrants, loans, awards, cooperative agreements, and other forms of financial assistance;
> (ii) include contracts, subcontracts, purchase orders, task orders, and delivery orders…"

According to PL 113-101 – May 9, 2014, Digital Accountability and Transparency Act of 2014 (DATA Act), Section 2*, Purposes*:

> "The purposes of this Act are to –
> (1) Expand the Federal Funding Accountability and Transparency Act of 2006 by disclosing direct Federal agency expenditures and linking Federal contract, loan, and grant spending information to programs of Federal agencies to enable taxpayers and policy makers to track Federal spending more effectively;
> (2) establish Government-wide data standards for financial data and provide consistent, reliable, and searchable Government-wide spending data that is displayed accurately for taxpayers and policy makers on USAspending.gov (or a successor system that displays the data)…
> (4) improve the quality of data submitted to USAspending.gov by holding Federal agencies accountable for the completeness and accuracy of the data submitted…"

DATA Act Information Model Schema (DAIMS) Version (v)2.0, Section 1.3.4 states:

> "TransactionObligatedAmount: File C should include all award IDs with each TransactionObligatedAmount that occurred during the quarter, so that the financial information can be compared to File D1/D2 in aggregate at the award ID level."

DAIMS v2.0, Appendix D, *FAQ & Examples Related to File C TOA*, states the following:

> "For the Transaction Obligated Amounts in File C, the goal or intent is to have corresponding and linking obligation transactions in File D. This means that File C must only report new obligations incurred, upward modifications to obligations, and downward modifications/de-obligations. These would be transactions in the obligation series of

USSGL Accounts: 4801, 4802, 4831, 4832, 4871, 4872, 4881, 4882, 4901, 4902, 4908, 4931, 4971, 4972, 4981, and 4982. However, transactions that net out or wash out in the Status of Resources must be excluded.

7. Question: How will the comparison in the validation reports of obligations on the C File to obligations on the D1 and D2 files be done?
Answer: For each unique award ID in File C, the sum of each TOA reported for the period should match the sum of the FederalActionObligation amounts reported in D1 or D2 for the same timeframe, regardless of modifications. Due to timing and other issues, the amounts may not match and only a warning message will be included in the validation report (see validation rule #C23 on the help page of the Broker)."

According to Office of Management and Budget (OMB) Memorandum (M)-17-04, *Additional Guidance for DATA Act Implementation: Further Requirements for Reporting and Assuring Data Reliability*, Section 3, "Quarterly SAO Assurance over DATA Act Data":

"Agency's SAO assurance will be submitted quarterly through the forthcoming DATA Act Broker process. The quarterly process will require the SAO to assure the following:

The alignment among the Files A-F is valid and reliable. Since a DATA Act submission contains a combination of many data sets, the SAO will be required to attest to the validity and reliability of the complete DATA Act submission, including the interconnectivity/linkages (e.g. award ID linkage) across all the data in files A, B, C, D, E, and F. Where there are legitimate differences between files, the SAO should have categorical explanations for misalignments. To provide this assurance, agencies should have internal controls in place over all of the data reported for display USASpending.gov per A-123.

The data in each DATA Act file submitted for display on USASpending.gov are valid and reliable. To provide this assurance, the SAO will confirm that internal controls over data quality mechanisms are in place for the data submitted in DATA Act files. Existing data quality measures required by regulation and/or OMB guidance will be sufficient for SAO reliance on individual data files."

The National Science Foundation's (NSF) Data Quality Plan (DQP) states the following:

"NSF's approach to internal control over DATA Act reporting includes activities that are designed to provide reasonable assurance regarding the quality of all agency-reported DAIMS data elements and confirmation that the reporting process is reliable and valid. Reliability and validity of DATA Act reporting means that management can reasonably make the following assertions:

- All spending transactions that should be reported for the reporting period have been included and all non-reportable transactions are excluded (i.e., completeness).

- Reportable spending transactions and key data elements agree to NSF systems of record (accuracy).
- Reportable spending transactions are reported in a timely manner (timeliness).
- Spending data is reported in compliance with the objectives of the DATA Act (compliance)."

The Government Accountability Office (GAO)-14-704G, *Standards for Internal Control in the Federal Government* (Green Book), September 2014, Section 13.05, "Data Processed into Quality Information," states:

> "Management processes the obtained data into quality information that supports the internal control system. This involves processing data into information and then evaluating the processed information so that it is quality information. Quality information meets the identified information requirements when relevant data from reliable sources are used. Quality information is appropriate, current, complete, accurate, accessible, and provided on a timely basis. Management considers these characteristics as well as the information processing objectives in evaluating processed information and makes revisions when necessary so that the information is quality information."

Council of Inspectors General on Integrity and Efficiency (CIGIE) Federal Audit Executive Council (FAEC) *Inspectors General Guide to Compliance under the DATA Act* (Guide), December 2020, Section 730.01.c, "Record-Level Linkage (Files C & D1/D2)," states:

> "The sample awards reported in File C should be linked to applicable data elements reported in Files D1 and D2 or vice versa.
>
> Determine whether the Transaction Obligated Amounts in File C match the Federal Action Obligation amounts in File D2. Any variances identified by the auditors between Files C and D2 should be clearly explained and documented by the Federal agency."

USAspending.gov Glossary (https://datalab.usaspending.gov/) defines Federal Action Obligation as the following:

> "Amount of Federal Government's obligation, de-obligation, or liability, in dollars, for an award transaction."

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