

## Memorandum

### Software Technology

October 3, 2023

To: Members of the Board  
From: Josh R. Williams, Senior Analyst  
Thru: Monica R. Valentine, Executive Director  
Subject: **Software Technology Guidance Updates** (Topic F)

### INTRODUCTION

At the June 2023 meeting, staff recommended definition and scope language for the Board's consideration in developing cloud-service arrangement reporting guidance. Members overwhelmingly agreed with staff's recommendations but agreed that the Board should revisit the definition and scope if a need arises while deliberating reporting requirements. Staff proceeded to draft an exposure draft with the scope and definition language and continued coordinating with the working group to develop reporting-requirement language to propose for the Board's consideration.

The attached issues paper recommends reporting requirement guidance for cloud-service arrangements. Specifically, the issues paper discusses recognition, note disclosure, and required supplementary information requirements for payments pertaining to cloud services. Staff is requesting the Board's feedback on the guidance for inclusion in the draft exposure draft.

### REQUEST FOR FEEDBACK BY October 13, 2023

**Prior to the Board's October meeting**, please review the attached issues paper and respond to the questions by October 13, 2023.

Please submit responses to Josh Williams at [WilliamsJR@fasab.gov](mailto:WilliamsJR@fasab.gov) with a cc to Monica Valentine at [ValentineM@fasab.gov](mailto:ValentineM@fasab.gov).

### NEXT STEPS

**Pending Board feedback**, staff plans to coordinate with the working group and users to research reporting options for implementation costs related to cloud-services to propose for the Board's consideration.

### ATTACHMENTS

1. Issues Paper

2. Draft Exposure Draft
3. Prior Board Meeting Timeline
4. FASAB Software Technology Definitions
5. Intangible Assets Project Plan

# Issues Paper

## Software Technology

October 3, 2023

### CONTEXT

#### Background

In prior Board meetings, members deliberated cloud-based information technology (IT) services in the federal environment with the goal of developing financial reporting guidance for cloud-service arrangements. Specifically, members previously discussed:

- Different service and payment characteristics of cloud-service arrangements
- Whether cloud-service arrangements possessed the asset characteristics from SFFAC 5, *Definitions of Elements and Basic Recognition Criteria for Accrual-Basis Financial Statements*
- Whether cloud-service arrangements represent right-to-use assets or service contracts
- A cost-benefit analysis of potential preparer burdens and user benefits for financial reporting options for cloud-service arrangements

During the April 2023 meeting, the Board overwhelmingly supported developing reporting guidance to require reporting entities to disclose cloud-service expenses. Most members agreed that expense disclosure was optimal after considering the potential preparer burdens and user benefits of each reporting option.

At the June 2023 meeting, staff recommended definition and scope language for the Board's consideration in developing cloud-service arrangement guidance. Members overwhelmingly agreed with staff's recommendations but agreed that the Board should revisit the definition and scope if a need arises while deliberating reporting requirements<sup>1</sup>.

Staff proceeded to input the definition and scope language in a draft exposure draft<sup>2</sup>. Based on Board feedback, staff placed the "cloud-service arrangement" description under the definition section of the guidance and referenced the NIST cloud-computing definition and associated position paper as a footnote with the purpose of further informing readers about cloud-computing resources that the guidance will address. Staff

---

<sup>1</sup> See Attachment 3 for a summary of each previous Board meeting deliberation on cloud-service arrangements.

<sup>2</sup> See Attachment 2 for the draft exposure draft that includes the scope and definition language from the June 2023 meeting and the reporting requirement language that this issues paper proposes.

also confirmed with an NIST representative that NIST currently has no plans to update its cloud-computing definition or position paper.

Staff then coordinated with the working group and other stakeholders to research categories of cloud service expenses and characteristics of cloud-service arrangements that could be useful as financial report disclosures. This issues paper recommends reporting requirement guidance for cloud-service arrangements.

## Research

Staff researched prior Board meeting minutes, working group correspondence, and reporting requirement language from existing standards for developing the proposals in this issues paper. Staff specifically researched and analyzed the following documents for this issues paper:

- GASB Statement No. 96, *Subscription-Based Information Technology Arrangements*, May 2020
- FASB Accounting Standards Update 2015-05, *Intangibles – Goodwill and Other Internal-Use Software, Customer’s Accounting for Fees Paid in a Cloud Computing Arrangement (Subtopic 350-40)*
- FASB Accounting Standards Update 2018-15, *Intangibles – Goodwill and Other Internal-Use Software, Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (Subtopic 350-40)*
- GAO, *Cloud Computing: Agencies Have Increased Usage and Realized Benefits, but Cost and Savings Data Need to Be Better Tracked*, GAO-19-58, May 6, 2019
- National Institute of Standards and Technology, *The NIST Definition of Cloud Computing*, Special Publication 800-145, September 2011
- Statement of Federal Financial Accounting Concepts (SFFAC) 1: *Objectives of Federal Financial Reporting*, September 2, 1993
- SFFAC 2, *Entity and Display*, June 6, 1995
- SFFAC 4, *Intended Audience and Qualitative Characteristics for the Consolidated Financial Report of the United States Government*, January 27, 2003
- SFFAC 5, *Definitions of Elements and Basic Recognition Criteria for Accrual-Basis Financial Statements*, December 26, 2007
- SFFAC 8, *Federal Financial Reporting*, September 22, 2017

- Statement of Federal Financial Accounting Standards (SFFAS) 1: *Accounting for Selected Assets and Liabilities*, March 30, 1993
- SFFAS 10, *Accounting for Internal Use Software*, October 9, 1998
- SFFAS 32: *Consolidated Financial Report of the United States Government Requirements: Implementing Statement of Federal Financial Accounting Concepts 4 “Intended Audience and Qualitative Characteristics for the Consolidated Financial Report of the United States Government”*, September 28, 2006
- SFFAS 49, *Public-Private Partnerships: Disclosure Requirements*, April 27, 2016
- SFFAS 51, *Insurance Programs*, January 18, 2017
- SFFAS 54, *Leases*, April 17, 2018
- SFFAS 59, *Accounting and Reporting of Government Land*, July 30, 2021
- Technical Release 16, *Implementation Guidance for Internal Use Software*, January 19, 2016

Staff communicated with many stakeholders to develop this issues paper, including accounting and IT departments at multiple federal agencies, and private citizens who have an interest in financial reporting for cloud-service costs in the federal government. Staff spoke with non-preparer stakeholders, with a user perspective, from academia, private industry, audit personnel from the Government Accountability Office (GAO) Information Technology Center, and staff from the Senate Committee on Homeland Security and Governmental Affairs to understand the kinds of cloud-service arrangement information that could be useful in financial reports.

Staff also conducted internet research to understand how vendors charge for cloud services. Staff has included the research findings and stakeholder input throughout this analysis to provide the Board a thorough analysis of the proposals in this issues paper.

## RECOMMENDATIONS AND ANALYSES

During the April 2023 meeting, the Board considered multiple reporting options for cloud-services arrangements, including balance sheet recognition, commitment disclosure, expense disclosure, and expense recognition only. The Board overwhelmingly favored the expense disclosure reporting option.

Therefore, this issues paper focuses on quantitative and qualitative disclosure-based reporting requirements for cloud-service arrangement expenses. However, the issues paper also addresses expense, asset, and liability recognition requirements for incurred cloud services based on existing accrual-based recognition guidance. This issues paper

specifically recommends the following reporting requirement guidance for cloud-service arrangements:

- Financial statement recognition and measurement of payments for cloud services
- Financial statement note disclosures for component reporting entities and the Consolidated Financial Report of the U.S. Government (CFR)
- Required supplementary information (RSI) requirements

For reference, paragraphs 6 – 12 in the draft exposure draft (Attachment 2) contain the guidance language that this issues paper proposes. Staff requests that the Board review the recommendations and accompanying analysis and provide feedback on the guidance proposals.

## **RECOMMENDATION**

### **RECOGNITION AND MEASUREMENT (Paragraphs 6 – 8)**

Expense and qualitative information disclosure is the primary objective of the proposed guidance. However, this issues paper also proposes guidance on how to categorize cloud-service payments and recognize those payments as reporting entities pay vendors for services. The cost categorization guidance is also necessary for the proposed disclosure and RSI requirements that this issues paper discusses in a later section. The analysis will propose guidance for the following:

- A description of what comprises cloud-service payments
- Recognizing cloud-service payments as an expense as incurred
- Recognizing upfront payments for cloud-services as assets

Staff requests that members provide feedback on the proposed guidance.

## **ANALYSIS**

### **Cloud-service payments description**

During the October 2022 meeting, members had different opinions on whether cloud-service arrangements were more like right-to-use assets or service contracts. Some members agreed that cloud services and other types of service contracts possessed a spectrum of right-to-use asset and service components. After further research and

discussions, staff believes that this observation is accurate in terms of how vendors<sup>3</sup> deliver cloud services.

The primary purpose of cloud-service arrangements is to provide access to an IT resource with vendors typically charging one roll-up price that also covers their cost to continuously deliver access to the IT resource, including labor, infrastructure, overhead, and energy costs. Vendors typically charge an all-inclusive price based on usage factors, such as the number of user access rights, access time, or bytes of data used.

Staff believes the standard should clearly establish what constitutes cloud-service payments for applying the recognition, disclosure, and RSI reporting requirements. Therefore, staff proposes the following in paragraph 6 of the draft ED:

*6. Cloud-service payments consist of payments made by reporting entities to vendors primarily for access to IT resources over a network. Cloud-service providers often charge all-inclusive rates for cloud services that also cover vendor support cost to deliver the cloud service, including labor, infrastructure, energy, cybersecurity, and overhead costs. This guidance applies to total payments made by reporting entities to vendors in exchange for cloud services that could include both the cost for access to the IT resource and the vendor support costs to deliver the service.*

This language simplifies reporting requirements by focusing cloud-service reporting on the total cost that reporting entities pay vendors for the cloud-service. Reporting entities would not have to meticulously account for and report vendor costs to provide the service.

This language would also exclude separate IT support arrangements that only provide labor-based support to implement, manage, and/or secure cloud resources without providing access to cloud resources. However, staff did not state this specifically in the guidance because these types of costs could potentially apply to cloud implementation guidance that staff plans to propose to the Board at a future meeting.

#### Working group feedback

Several federal IT professionals provided feedback with developing the cloud-service payment description above. The working group generally supported the language and agreed that the guidance should focus on total cloud-service costs and not overcomplicate reporting by breaking out more specific costs.

However, a few federal IT professionals and users suggested that it would be beneficial to have more transparency into what federal agencies pay for as part of the roll-up prices that vendors charge. Additionally, some working group members suggested that it would be beneficial to have more transparency and accountability with the costs that

---

<sup>3</sup> Vendors can include cloud-service providers and cloud resellers (or cloud brokers). Cloud resellers typically procure cloud services from cloud-service providers and resell them to its own customers along with value-added services to help customers manage and operate cloud systems.

reporting entities pay for separate IT support services related to cloud-services as it would provide a more complete picture of cloud-related spending.

Staff believes there would be some benefit with more detailed and expansive cost reporting. However, staff does not believe the benefits outweigh the associated preparer burden. For example, vendors do not typically provide breakouts of the prices they charge. Furthermore, staff believes that qualitative disclosures could provide beneficial information related to the types of services provided in cloud-service arrangements. Additionally, as stated previously, separate IT support arrangements could potentially apply to implementation costs, which the Board should deliberate in the future.

Finally, staff has received feedback from federal IT professionals and non-federal stakeholders that believe reporting and accounting for total cloud-service costs would provide useful information that is not currently available. For example, one non-federal user with federal IT experience stated that the federal government does not currently know what they really spend on cloud services.

### **Expense and liability recognition**

During the April 2023 meeting, the Board decided not to adopt the GASB No. 96 framework that requires recognition of right-to-use assets and future payment liabilities for subscription-based IT arrangements. Several members agreed it was reasonable to conceptualize cloud-service arrangements as right-to-use assets but were concerned that the preparer burden would outweigh the reporting benefits and not justify the need for asset and liability recognition on the balance sheet.

Instead of balance sheet recognition, the reporting entities would simply recognize<sup>4</sup> cloud-service payments as an expense as the entity receives the cloud service and record a liability for payments owed for services received in accordance with basic accrual accounting requirements for exchange transactions<sup>5</sup>. Therefore, staff proposes the following in paragraph 7 of the draft ED:

*7. Reporting entities should recognize payments for cloud-services as an expense when incurred. Reporting entities should recognize a liability for unpaid amounts due at the end of the reporting period to which they relate.*

Most reporting entities likely already account for cloud-service payments this way, like any service contract. However, staff believes it is important for the guidance to formally assert that reporting entities should account for recurring payments for cloud-service arrangements as an expense as incurred and not as a right-to-use asset.

---

<sup>4</sup> SFFAC 5, paragraph 4 states, "The terms recognition and recognize refer to the process of formally recording or incorporating an element into the financial statements of an entity."

<sup>5</sup> SFFAS 5, paragraph 22 states, "An exchange transaction arises when each party to the transaction sacrifices value and receives value in return. There is a two-way flow of resources or of promises to provide resources. In an exchange transaction, a liability is recognized when one party receives goods or services in return for a promise to provide money or other resources in the future."



This would ensure consistency in accounting for cloud-services across the federal government. FASB issued similar guidance<sup>6</sup> that states that hosting arrangements are typical service contracts if they do not convey the right for the customer to take possession of the software and run it on its own hardware.

### Working group feedback

Most of the working group had no issues with the proposed guidance in paragraph 7 because they already generally account for cloud-service payments this way. One working group member suggested making the guidance clearer that reporting entities should recognize an expense as the entity receives the service instead of stating, "...as incurred".

However, staff researched general accounting terminology on the internet and the Board's previous uses of the word "incurred" and believes that, to recognize an expense as incurred, universally means to recognize an expense as goods or services are received. For example, FASB ASU 2018-5 states, "If a cloud computing arrangement is truly a service contract, the service benefit is received and used simultaneously, and hosting costs are appropriately expensed as incurred."

### **Advance asset recognition**

During previous Board meetings, staff informed members that some reporting entities purchase "cloud credits" upfront to apply to future cloud services. One Board member commented that reporting guidance could simply reference existing advance and prepaid asset guidance so that readers know to apply it to cloud-service arrangements.

Paragraphs 57 – 61 of SFFAS 1 provide accounting and reporting guidance for advances<sup>7</sup> and prepayments<sup>8</sup>. Paragraph 59 states, "Advances and prepayments should be recorded as assets. Advances and prepayments are reduced when goods or services are received, contract terms are met, progress is made under a contract, or prepaid expenses expire." Therefore, staff recommends the following in paragraph 8 of the draft ED:

*8. Reporting entities should recognize an asset if payments are made in advance of the reporting period to which they relate. Reporting entities should reduce the asset and recognize an expense as the reporting entity receives the service or the advance payment expires.*

---

<sup>6</sup> See FASB ASU 2015-05, paragraph 350-40-15-4C

<sup>7</sup> SFFAS 1, paragraph 57 states, "Advances are cash outlays made by a federal entity to its employees, contractors, grantees, or others to cover a part or all of the recipients' anticipated expenses or as advance payments for the cost of goods and services the entity acquires."

<sup>8</sup> SFFAS 1, paragraph 58 states, "Prepayments are payments made by a federal entity to cover certain periodic expenses before those expenses are incurred."

Paragraph 8 also includes a footnote reference to the relevant SFFAS 1 guidance for advances and prepayments.

Several reporting entities appear to currently pay upfront for cloud services and federal procurement offices are looking to encourage it more since it could lead to cost savings<sup>9</sup>. For example, one federal agency reported paying upfront for annual or multi-annual reserved instances to lock-in price discounts. The reporting entity currently recognizes the upfront payment as an asset and amortizes it over the reserved instance term.

Other reporting entities described paying upfront for cloud-services that they typically consume within a year. These upfront payment could cross reporting periods, requiring asset recognition. In addition to amortization, staff believes reporting entities could reduce advance assets for cloud services based on recurring invoices since vendors typically charge based on actual usage.

Staff believes it is especially important for guidance to specifically apply the existing SFFAS 1 reporting requirements to cloud-service arrangements because it appears that advance/prepayment assets could represent a significant portion of cloud-service arrangement transactions. Furthermore, it appears to staff there is inconsistency with how reporting entities currently account for these upfront payments for cloud services. It appears that at least one reporting entity already recognizes an advance asset while other reporting entities do not.

#### Working group feedback

As stated previously, based on feedback it appears that some reporting entities already account for upfront cloud-service payments as assets while others do not. One reporting entity confirmed that paragraph 8 as drafted made sense and was consistent with how the entity already accounts for advance assets associated with cloud-service payments.

In further discussions with reporting entities, it was clear to staff that the term “cloud credit” meant different things to different people and that federal agencies used different terms to describe upfront payments for cloud services. Therefore, staff decided not to use any specific term in the proposed guidance. Staff believes that paragraph 8 makes it clear to recognize an asset for any payment made in advance of receiving cloud services.

Some reporting entities noted that prepayments for cloud services do not typically expire or the reporting entity uses the prepayment within a year. However, staff believes it is theoretically possible that some cloud-service prepayments could expire, and it is important to address how to account for it if it does happen.

---

<sup>9</sup> [Blame the lawyers if your agency is paying 10%-to-25% more for certain cloud services | Federal News Network](#), Jason Miller, August 16, 2023

Some reporting entities questioned if paragraph 8 would apply to scenarios in which a reporting entity commits funds upfront specifically to pay cloud resellers for anticipated costs for cloud services. Staff explained that the guidance would only apply to scenarios in which a reporting entity exchanges money with a vendor upfront to receive future cloud services. The guidance would not apply to budgetary commitments or allocations.

### **Staff recommendation**

Staff believes the proposed guidance in paragraphs 6 – 8 would thoroughly address how to account for cloud-service payments as a service contract that is in line with previous Board deliberations and existing FASAB guidance. Staff believes it is especially important to apply existing SFFAS 1 advance and prepayment asset guidance to cloud-service arrangements to ensure consistency in accounting for an increasingly significant way that federal agencies procure cloud services.

Furthermore, staff believes that advance and prepayment asset recognition for cloud-service arrangements would contribute to the stewardship financial reporting objective in SFFAC 1, paragraphs 134 - 145. Recognizing assets for cloud services owed to the reporting entity improves the accuracy of the entity's reported financial position.

### **Question for the Board:**

1. Do members support staff's proposed recognition and measurement guidance for cloud-service payments? Please provide any feedback on the staff proposal.

## **RECOMMENDATION**

### **FINANCIAL STATEMENT NOTE DISCLOSURES (Paragraphs 10 – 11)**

Per deliberations in the April 2023 meeting, the Board decided to develop guidance requiring reporting entities to report annual expenses and qualitative information for cloud-service arrangements. During the meeting, it appeared that members had mixed opinions on whether reporting entities should report the cloud-service information in the financial statement note disclosures, required supplementary information (RSI), or both.

This issues paper proposes both financial statement note disclosures and RSI reporting options for the Board to consider. The following analysis will focus on financial statement note disclosure requirements for component reporting entities and the CFR. Staff requests that members provide feedback on the proposed note disclosure guidance.

## ANALYSIS

### Component reporting entity note disclosures

For this proposal, staff focused on providing the Board a variety of disclosure options for members to deliberate and consider. Staff developed these disclosure proposals based on researching existing standards and feedback from both reporting entities and non-federal users. Staff recommends the Board consider the following note disclosure requirements for component reporting entities in paragraph 10 of the ED:

*10. Reporting entities should disclose the following for cloud-service arrangements in notes to the financial statements:*

- a. Annual cloud-service expenses in total*
- b. A general description of significant cloud-service arrangements, including:*
  - i. The IT resource provided by the cloud service*
  - ii. How the cloud service contributes to the mission and/or operational requirements of the reporting entity*
- c. The general terms and conditions of significant cloud-service arrangements, including:*
  - i. Value-added services incorporated in the cloud-service arrangements*
  - ii. Whether the reporting entity pays based on variable consumption or a pre-determined fixed price*
  - iii. Whether the reporting entity commits to purchasing cloud services for a specific period or can terminate service at any time*
  - iv. Whether the reporting entity commits to purchase a fixed amount of cloud services for a discounted price*
- d. General financial risks and benefits associated with significant cloud-service arrangements, such as:*
  - i. The risk of purchasing upfront or committing to purchase cloud services that could go unused*
  - ii. The risk of future cost increases associated with data transfer fees, license restrictions, or price increases*
  - iii. Efficiencies achieved by moving IT infrastructure to the cloud*

### Annual cloud-service expense in total

Paragraph 10.a. would require reporting entities to disclose the amount of expenses incurred for cloud-service payments each fiscal year in accordance with paragraphs 6 and 7 of the guidance proposal. This would provide users the ability to observe annual trends in cloud-service spending and compare cloud-service spending across agencies. Staff believes this information would complement existing capital reporting for internal use software and IT infrastructure by providing a more complete picture of how federal agencies acquire and use IT resources.

### General description of cloud-service arrangements

Paragraph 10.b. would require reporting entities to provide a general description of their significant cloud-service arrangements. This could include the type of IT resource (e.g., software application, data storage, server capacity) that the cloud-service provides along with how the cloud service provides economic benefits or services to the entity's operations and mission.

For example, a reporting entity could disclose a short narrative that explains that the agency acquires cloud services that provides data storage capabilities to house various research or demographic data the agency provides to the public via website as part of their mission. Additionally, a reporting entity could disclose if the agency has chosen to acquire cloud services for operational and administrative software functions, such as email, payroll processing, human resource services, etc.

It is fairly common for reporting guidance to require this type of qualitative disclosure for financial statement elements<sup>10</sup>. Staff believes the requirements in 10.b. would benefit users by providing a greater understanding of how federal agencies use cloud services to provide services to the public.

### General terms and conditions of cloud-service arrangements

Paragraph 10.c. would require reporting entities to provide a high-level summary of notable terms and conditions of their significant cloud-service arrangements. This is also a fairly common reporting requirement for financial statement elements<sup>11</sup>.

As explained previously, many federal agencies purchase cloud services through resellers or brokers. Cloud resellers typically procure cloud services from cloud-service providers and resell them to its own customers along with “value-added services” to help customers manage and operate cloud networks.

---

<sup>10</sup> SFFAS 6, paragraph 45A.a. requires disclosing “A concise statement defining an entity's federal land, and explaining how land relates to the mission of the entity.” Additionally, FASB ASC 2018-15 requires that entities disclose “the nature of its hosting arrangements that are service contracts.”

<sup>11</sup> SFFAS 54, paragraph 54.a. requires lessees to disclose “A general description of its leasing arrangements, including the basis, terms, and conditions on which variable lease payments not included in the lease liability are determined.”

Several federal agencies indicated it is difficult to separate the value-added cost from the cloud service in the reseller arrangements. However, staff believes qualitative disclosure could provide transparency around these types of arrangements. Users would have a better understanding of what services federal agencies pay for in these types of arrangements.

The disclosure requirements of paragraph 10.c. could also include disclosing whether the reporting entity pays for cloud services based on variable consumption factors, like the number of user access rights or actual data usage, or pays a fixed price on a recurring basis, like a subscription. Reporting entities could also disclose whether they acquire term-based arrangements that commit the agency to purchase the cloud service for annual or multi-year periods or if the agency has the flexibility to stop and start service as needed, like a utility. Finally, reporting entities could disclose whether the agency commits to purchase a minimum amount of cloud service in exchange for discounted prices to take advantage of savings opportunities.

In discussions with federal IT personnel and non-federal IT stakeholders, staff has learned of many ways that federal agencies purchase cloud services. Staff observed during round table discussions that some federal agency IT personnel were curious to know more about how other federal agencies procured cloud services. For example, some IT departments that only used the pay-as-you-go approach were curious to learn how some other agencies were executing reserved instance arrangements to take advantage of cost savings.

The cloud-service environment continues to evolve at a fast pace. For example, it appears that in recent years, cloud-service arrangements have evolved from more traditional subscription-based arrangements to more agile consumption-based arrangements with no time-of-service commitments. Now, federal agencies are looking to purchase more cloud services upfront to take advantage of price discounts.

Staff believes that disclosing the ways different federal agencies acquire cloud services would offer beneficial information to users by providing transparency into the different and quickly evolving ways federal agencies acquire cloud services.

#### Financial risks and benefits of cloud-service arrangements

Paragraph 10.d. would require reporting entities to disclose general benefits and risks associated with their significant cloud-service arrangements<sup>12</sup>. This could include the risk of prepaying for cloud services that could expire before receiving service, which relates to the advance asset recognition requirement in paragraph 8.

Additionally, staff understands there is risk with unexpected cost increases with cloud-service arrangements, such as transactional fees<sup>13</sup>. One non-federal IT stakeholder

---

<sup>12</sup> Staff researched risk disclosure requirements in SFFAS 49 and SFFAS 51 for inspiration.

<sup>13</sup> GAO, *Cloud Computing: DOD Needs to Improve Tracking of Data User Fees*, GAO-23-106247, September 12, 2023

used the term “sticky” arrangements to describe the risk that federal agencies could become effectively locked into cloud services with vendors, allowing the vendor to raise costs on federal agencies because the agency cannot easily switch cloud-service providers. This can happen due to software license restrictions<sup>14</sup> that limit a federal agency’s ability to run software on certain cloud networks.

Another reason for “sticky arrangements” is the high cost often associated with moving data from one cloud network to another. Staff believes this is comparable to a landlord raising a tenants rent every year with the hope the tenant will accept the higher cost because it is too costly and time consuming to move to a new apartment.

Finally, there are potential cost benefits associated with moving from on-premises capital IT resources to cloud services. Potential benefits include cost savings with consolidating on-premises data centers, less in-house costs to secure and maintain on-premises IT resources, and less upfront investment risk<sup>15</sup>. However, some IT program managers have suggested that cost savings benefits are exaggerated with cloud services. Staff believes this disclosure could offer useful information to compare the benefits with cloud services versus capitalized IT infrastructure and IUS.

#### Working group feedback

Several stakeholders, particularly federal and non-federal IT professionals were supportive of the component reporting entity note disclosure requirements in paragraph 10. In fact, staff developed several of the reporting requirements based on conversations with non-federal IT professionals who are interested in the financial reports disclosing cost and qualitative information pertaining to cloud services.

Staff spoke with a former federal agency IT executive, that now works in the private IT sector, who was supportive of the disclosure requirements. He stated that the federal government does not truly know how much it spends on cloud services and believed that requiring agencies to disclose cloud-service expenses in audited annual financial reports would provide needed transparency and accountability.

This same individual provided staff several of the suggested note disclosure requirements related to the terms and conditions and benefits and risks of cloud-service arrangements. He stated that it is particularly important for federal agencies to understand their service-term commitments and risks of future cost increases related to getting locked-in with a particular cloud provider.

---

<sup>14</sup> GAO, *DOD Software Licenses: Better Guidance and Plans Needed to Ensure Restrictive Practices Are Mitigated*, GAO-23-106290, September 12, 2023

<sup>15</sup> [How To Control Data Center Costs With A Hybrid Cloud Strategy \(forbes.com\)](https://www.forbes.com), Oscar Moncada, May 17, 2023



Staff spoke with a few federal IT departments that are currently implementing Technology Business Management (TBM)<sup>16</sup> and FinOps<sup>17</sup> practices for cloud spending. They were supportive of the disclosure requirements and the project in general because they believe the reporting requirements would complement their efforts to improve cloud and IT spending management across the federal government.

One federal agency suggested that the guidance specifically require reporting entities to disclose cloud-service expenses based on TBM taxonomy. They also suggested that the guidance require reporting entities to implement FinOps for managing cloud-service expenses. Staff continues to consider both TBM and FinOps for insight and thinks this project, TBM, and FinOps efforts can complement one another in improving accountability over cloud-service spending. However, staff does not think principle-based financial reporting guidance should specifically require TBM and FinOps.

One federal IT professional was particularly interested with the possibility that this guidance could lead to a specific note disclosure that highlights cloud spending in the audited financial reports. He indicated it would be beneficial to see trends in cloud spending across federal agencies and the U.S. Government. He also noted the accountability benefits related to reporting cloud spending in audited financial reports.

A working group member and user both stated that the Board should also apply the disclosure requirements to cloud-services acquired from other federal agencies, such as GSA<sup>18</sup>. Staff agrees and plans to eventually provide research material specifically related to intragovernmental/shared services for the Board to deliberate reporting requirements.

One federal user suggested that guidance require reporting entities to report cloud-consumption information along with expense disclosures. Staff agrees this could provide further accountability and transparency of cost efficiencies related to cloud-services and agency operations. However, staff wants to discuss this idea further with the working group before presenting guidance options to the Board.

Some working group members did not support the proposed note disclosure requirements. Like the concerns raised in the cost-benefit analysis, some working group members continue to question the need for financial reports to specifically require reporting expenses and qualitative information for cloud-service arrangements when

---

<sup>16</sup> The CIO Council describes TBM as an IT management framework that implements a standard IT spend taxonomy. TBM implements a standard way to categorize IT costs, technologies, resources, applications and services. TBM enables organizations to disaggregate IT spending into smaller, consistent categories to provide CIOs and other executives with a more accurate and detailed understanding of their organization's IT costs. This allows agencies to identify duplicative or unnecessary spending and to make better informed decisions regarding future investments.

<sup>17</sup> The FinOps [U.S. Public Sector FinOps Playbook](#) describes FinOps as an evolving cloud financial management discipline and cultural practice that enables organizations to get maximum business value by helping engineering, finance, technology and business teams to collaborate on data-driven spending decisions.

<sup>18</sup> [Cloud.gov](#) provides a platform-as-a-service built specifically for government work. Customers pay GSA for the service using a federal interagency agreement.



standards do not require this kind of reporting for other service contracts. Some again pointed out that cloud spending is trivial when compared to total annual spending.

Some working group members expressed that it would be difficult to categorize cloud-service expenses for disclosure. However, other working group members did not note any concern with this requirement. It is apparent to staff that there is a wide range of accounting system capabilities across reporting entities. Staff believes disclosing cloud-service expenses would present more difficulties for some reporting entities that have less capable cost-accounting systems. However, staff does not believe that total expense disclosure is particularly burdensome in the realm of financial accounting standards.

Some working group members were concerned with the burden of disclosing the qualitative information in 10b – 10d. It appeared initially that some working group members thought that the proposed guidance would require disclosing this information for every cloud-service arrangement.

Therefore, staff added the word “significant” cloud-service arrangements in each disclosure requirement to make it clearer that reporting entities would need to disclose a high-level summary of the material/significant cloud-service arrangements. Staff envisions reporting entities disclosing a few paragraphs for 10b – 10d to provide a high-level analysis of the purpose, terms and conditions, and financial benefits and risks associated with significant cloud-service arrangements.

Some working group members indicated that federal agencies currently submit annual budget spending data for cloud services for the IT Dashboard<sup>19</sup> webpage for public awareness. However, the IT dashboard does not currently depict costs for cloud services. It appears to staff that the cloud data is rolled into an “other IT services” category. As stated previously, staff has spoken to federal IT professionals that are involved with TBM and FinOps efforts who support this guidance proposal because they believe it would help with their efforts to improve accountability and transparency with cloud-service costs.

Finally, some working group members have pointed out that USAspending.gov<sup>20</sup> displays cost execution and general descriptions of federal government contracts, including contracts for cloud services. However, like the IT dashboard, the website does not have a cloud-service category. Furthermore, if a user located a particular contract of interest, the information would likely only provide general descriptions of the arrangement, like the disclosure requirements of paragraph 10.a.i of this proposal. Finally, the product service codes (PSC) that categorize contract costs appear much broader than cloud-service costs.

---

<sup>19</sup> [The Federal IT Dashboard](#) enables the federal government and public to understand the health of IT investments, the impact of federal IT portfolios, and to track key website indicators in agencies’ ability to deploy technology that is secure by design, retire legacy systems, and ultimately, deliver a better digital experience for the public.

<sup>20</sup> [USAspending](#) is the official open data source of federal spending information, including information about federal awards such as contracts, grants, and loans.

## Financial Report of the U.S. Government note disclosures

For CFR note disclosure requirements, staff recommends the Board consider the following in paragraph 11 of the ED:

*11. The Consolidated Financial Report of the U.S. Government should disclose the following for cloud-service arrangements in notes to the financial statements:*

- a. Annual cloud-service expenses in total*
- b. A general description of its significant cloud-service arrangements*
- c. A general reference to relevant component reporting entity reports*

Staff believes these disclosure requirements are typical based on CFR disclosure requirements in SFFAS 32 and other more recent standards, such as SFFAS 54.

### Annual cloud-service expense in total

Paragraph 11.a. requires the CFR to disclose total annual cloud-service expenses of the U.S. Government, just like the 10.a. requirement for component reporting entities. This would effectively be a roll-up of all component reporting entity expense disclosures.

Staff believes this information would provide the same transparency and accountability benefits as 10.a., but at a higher level. Financial report users could see how much the U.S. Government spends on cloud services from year to year, which would complement existing capital reporting for IUS and IT infrastructure by providing a more complete picture of how the U.S. Government uses IT resources. Users could observe trends with U.S. Government spending on cloud services versus capital investments in IUS and IT infrastructure.

### General description of cloud-service arrangements

Paragraph 11 overall does not require the same qualitative disclosures for the CFR that paragraph 10 does for component reporting entities. However, 11.b. does require a general description of the U.S. Government's cloud-service arrangements.

Staff believes the CFR could provide a short narrative that explains the general or broad purpose of cloud-service arrangements in the federal environment. This is typical of disclosure guidance for governmentwide reporting<sup>21</sup>.

---

<sup>21</sup> See paragraph 25.a. of SFFAS 49 and paragraph 69.a. of SFFAS 54.

### General reference to component reporting entity reports

Paragraph 11.c. would require a reference to component entity reports that disclose cloud-service information in accordance with paragraph 10 of this proposal. Per SFFAS 32, it is typical for the CFR to reference component reporting entity reports.

### Working group feedback

The federal and non-federal IT users that staff spoke with all supported the proposed requirement that the CFR disclose total expenses for cloud-service arrangements just as they supported the requirement for component reporting entities. There were no notable concerns with implementing these disclosure requirements at the governmentwide level. One working group member suggested keeping the qualitative disclosure in 11.b. very high-level, which staff believes is appropriate.

However, one working group member noted that it is unlikely the current estimated amount of annual cloud-service expenses would meet the materiality threshold for gross cost narrative disclosure in the CFR. They stated that current CFR narrative disclosures associated with expenses, such as pension benefits and environmental cleanup costs, are reported within tables of other note disclosure requirements.

Staff wanted to make the Board aware of this issue but also wants to remind the Board that cloud-services are just one resource in the overall software technology project scope that the Board intends to deliberate. Additionally, staff believes cloud-service costs would complement existing IUS capitalization reporting and it is possible, pending Board deliberations, that guidance could require IUS capitalization associated with implementing cloud services.

### **Staff recommendation**

Based on the analysis, staff believes the proposed reporting requirements in paragraphs 10 – 11 relate to information that is appropriate as basic information in accordance with Table 1, *Factors to Consider in Distinguishing Basic Information from RSI* of SFFAC 2. Staff also believes the proposed note disclosure requirements offer the Board a variety of reporting options that would provide more accountability and transparency with cloud-services arrangement costs.

Additionally, staff believes that disclosing annual expenses and qualitative information for cloud-service arrangements at the component and governmentwide level meets the operating performance objective and performance accountability concepts in paragraphs 14 and 73 of SFFAC 1, respectively. That is that increased accountability and transparency over an increasingly significant IT resource would improve insight into cost trends associated with federal programs and operational efficiencies.

Furthermore, in accordance with paragraphs 96 – 97 of SFFAC 1, the disclosure requirements would complement capitalized IUS and tangible IT infrastructure assets in financial reports by providing further insight into how most federal agencies increasingly

use cloud services for operational and mission purposes instead of investing upfront in on premise software and hardware.

#### **Question for the Board:**

2. Do members support staff's proposed financial statement note disclosure guidance for cloud-service arrangements? Please provide any feedback on the staff proposal.

## **RECOMMENDATION**

### **REQUIRED SUPPLEMENTARY INFORMATION (Paragraph 12)**

As stated previously, staff considered financial statement note disclosure and RSI requirements based on previous Board deliberations. For example, during the April 2023 meeting, one member suggested that guidance should require reporting entities to disclose cloud-service costs in basic information while requiring categorical breakouts of those costs in RSI. Staff requests that members provide feedback on the proposed RSI guidance.

## **ANALYSIS**

### **RSI for component reporting entities**

It has become apparent to staff that cloud services are typically categorized by service models, such as infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS); and deployment models, such as public, private, community, and hybrid cloud. This is likely driven by the fact that the NIST specifically identifies and defines the cloud-service and deployment models.

Furthermore, The Federal Risk and Authorization Management Program (FEDRAMP)<sup>22</sup> appears to categorize all security authorized cloud-services by both service model and deployment model. Additionally, the GSA Special Item Number (SIN) 518210C Ordering Guide<sup>23</sup> appears to reference cloud-service models and encourage awarding individual CLINS for specific cloud services. Finally, staff has observed that it is very common for news articles, research papers, and general commentary about cloud computing to use the service and deployment model categories.

<sup>22</sup> [FedRAMP.gov](https://www.fedramp.gov) - FedRAMP provides a standardized approach to security authorizations for Cloud Service Offerings. Cloud-service providers generally need to be FEDRAMP authorized to provide cloud services to federal agencies.

<sup>23</sup> [Cloud Computing and Cloud Related IT Professional Services | GSA](#)

After several rounds of feedback and roundtable discussions with the working group and non-federal users, staff decided to propose that component reporting entities report total annual cloud-service expenses by cloud-service model in RSI. Therefore, staff proposes the following in paragraph 12 of the guidance proposal:

*12. Reporting entities should report annual cloud-service expenses in total by major service-model category in required supplementary information. Service-model categories should include:*

- a. Infrastructure-as-a-Service*
- b. Platform-as-a-Service*
- c. Software-as-a-Service*

Staff understands that the reporting guidance would need to define the service models, pending Board decisions. However, staff thought it would be more efficient to first propose the RSI option to the Board before developing guidance definitions for each service model. For purposes of this analysis and Board deliberations, below are high-level descriptions of each service model:

- *Infrastructure-as-a-Service* replaces purchased hardware by providing remote access to data center and server infrastructure over the internet.
- *Platform-as-a-Service* provides remote access to operating systems that allow federal agencies to develop, run, and manage software applications.
- *Software-as-a-Service* replaces traditional on-premise software with software that federal agencies access over the internet on a temporary basis, usually based on annual subscriptions.

Staff believes this RSI breakout of cloud-service expenses would benefit users by providing further transparency with the type of IT resource that federal agencies access through cloud services. Users could compare those costs to traditional capitalized IUS and IT infrastructure. For example, users could compare IaaS costs with owned or leased data centers and computer servers, or compare PaaS and SaaS costs with owned or licensed on-premise operating platforms and software applications.

#### Working group feedback

Several users were particularly supportive of reporting cloud-service expense by service model. One federal IT professional indicated that reporting cloud-costs by service model would correspond with TBM efforts. Another federal IT professional was most interested in this requirement out of all the reporting requirements in this proposal. He was particularly interested in seeing the type of IT resource (i.e., hardware or software) that federal agencies are accessing through cloud services for comparative and analysis purposes.

However, one non-federal user was less convinced that this information would provide much benefit. He stated that the three service models can blend and overlap in cloud-service offerings, making the separate categories less relevant.

A federal IT stakeholder stated that their agency collects cloud-service model cost information. However, they stated this data is not reliable and agreed that the reporting requirements could improve the accuracy of the data. One working group member noted that a drawback to requiring this information in RSI is that it would not lead to the same accountability improvements of basic information due to the fewer audit requirements with RSI.

Some working group members indicated no concern with reporting cloud-service expense by service model category. However, some working group members indicated it would present some challenges because they do not currently identify their cloud-service arrangements to that detail. Like disclosing total cloud-service expenses, staff suspects that this requirement would be more burdensome for some reporting entities depending on their current procurement practices and cost accounting system capabilities.

One working group member noted that other service model categories besides IaaS, PaaS, and SaaS exist. Other categories include Network-as-a-Service, Compute-as-a-Service, Workspace-as-a-Service, Data-base-as-a-Service, etc. However, staff believes that IaaS, PaaS, and SaaS represent the foundational service categories and that many of the other categories represent subcategories. For example, Workspace-as-a-Service is a subcategory of SaaS, Database-as-a-Service is a subcategory of PaaS, and Compute-as-a-Service is a subcategory of IaaS. The RSI requirement could allow reporting entities to report costs by other service-model categories. However, that would result in less consistent reporting for users.

Overall, the working group voiced more concerns with reporting cloud-service expenses by deployment model (public, private, community, and hybrid cloud). The working group and some federal IT professionals stated that categorizing cloud expenses by deployment model could be difficult because many arrangements are hybrid models.

Furthermore, users showed less interest in the deployment model categories. One working group member stated that reporting how much a federal agency spends on private or public cloud to store data is more of an IT security and internal control concern, not a financial reporting issue. Finally, staff believes that requiring reporting entities to break out cloud-service expenses by two overlapping types of categories could create an overly burdensome and impractical reporting requirement.

### **Staff recommendation**

Based on working group feedback, staff decided to propose that RSI only require a breakout of cloud-service expenses by service model (i.e., IaaS, PaaS, SaaS). Staff believes the cloud-service models represent characteristics of economic benefits and

services that federal agencies acquire, such as IUS and IT infrastructure capabilities, that would benefit financial report users.

Additionally, staff believes that requiring RSI reporting (as opposed to financial statement disclosure) for cloud-service expense by service-model category is the best course of action. While several federal and non-federal users expressed interest in this information, staff believes that categorizing cloud-service expenses by service models would require management judgment and more system and process changes for reporting entities.

Staff believes the circumstances of reporting cloud-service expenses by service model apply to SFFAC 2, paragraph 73C, which states, “RSI is information that a body that establishes GAAP requires to accompany basic information. It may be experimental in nature to permit the communication of information that is relevant and important to the reporting objectives while more experience is gained through resolution of accounting issues. Also, the information may be expressed in other than financial measures or may not be subject to reliable estimation. As issues are resolved, the information may be considered basic at some point in the future.”

For these same reasons, staff chose to recommend the RSI requirements only for component reporting entities. Staff believes the higher level of judgment and estimation required for reporting entities to categorize expenses by cloud-service model would make governmentwide reporting less effective.

In summary, the RSI would supplement the total cloud-service expense note disclosure, as well as capitalized IUS and IT infrastructure information, but would require preparer judgment and estimation to categorize the expenses by these categories. Staff therefore recommends the Board require this reporting in RSI at least initially and then consider moving it to basic information later.

#### **Question for the Board:**

3. Do members support staff’s proposed RSI guidance for cloud-service arrangements? Please provide any feedback on the staff proposal.

#### **Final thoughts and next steps**

Paragraph 25 of SFFAC 1 states, “The FASAB...considers the information needs of both internal and external users. In part, this is because the distinction between internal and external users is in many ways less significant for the federal government than for other entities. Officials who in theory should have ready access to information often find in practice that it is not available. Factors that contribute to this problem include the size and complexity of the government, the rapid turnover among senior political executives



compared with the time required to install information systems in large bureaucracies, and the division of authority in the federal government.”

Staff believes this concept applies to accounting and reporting for cloud-service arrangements. As the Board considers reporting guidance for cloud-service arrangements, staff believes it is important for members to continue to keep two main points in mind:

- There is user interest in the proposed reporting requirements among federal IT personnel, non-federal stakeholders, and congress.
- There are preparer burden concerns with disclosing information for a specific type of service contract when the total costs are relatively small compared to the government’s total annual operating expenses.

During the cost-benefit analysis deliberations, staff informed the Board that annual cloud-service costs are minor when compared against the multi-trillions of dollars spent each year by the federal government. However, staff continues to believe that the cloud-service costs are significant in the context of IUS reporting<sup>24</sup> and believes there are benefits to disaggregated expense disclosures in the financial reports. FASB is currently considering reporting guidance to require disaggregated expense breakouts<sup>25</sup>.

With these issues in mind, staff proposed guidance based on user input while attempting not to overcomplicate the reporting requirements. The proposed guidance requires reporting entities to apply accrual-based recognition standards to cloud-service payments, disclose total expenses along with qualitative information, and RSI reporting of the total expenses by cloud-service model.

Staff believes these requirements will present some challenges for some reporting entities depending on accounting system capabilities. However, staff believes that these reporting requirement proposals are not particularly burdensome relative to other reporting guidance requirements.

Additionally, staff reminds the Board that cloud-service arrangements are one piece of the software technology project scope. Staff plans to propose reporting guidance addressing IUS implementation costs for cloud-service arrangements, shared services, software licenses, and updates to guidance for developed IUS.

Staff believes it is effective to approach each of these topics separately and individually for Board deliberations but remain flexible throughout the entire project. These software resources connect and overlap with each other and reporting guidance will have to deal

---

<sup>24</sup> During the April 2023 meeting, staff stated that cloud-service costs represent a significant amount of annual dollars spent on federal IT infrastructure that is currently not visible in the financial reports. For example, \$10.8 billion in annual cloud spending in FY21 is more than twice the amount that the federal government capitalized for IUS that year and more than three times the amount amortized that year.

<sup>25</sup> [Disaggregation—Income Statement Expenses \(fasb.org\)](https://www.fasb.org/Disaggregation—Income Statement Expenses)



with that challenge. Staff believes however that the resulting guidance should lead to financial reporting that complements the existing IUS reporting to provide more accountability and transparency with all significant IT resources in the federal government.

Pending Board feedback, staff will coordinate with the working group and users to research reporting options for implementation costs associated with cloud-service arrangements<sup>26</sup>. Staff plans to present reporting options on cloud-implementation costs to the Board during the December 2023 meeting.

---

<sup>26</sup> FASB ASU 2018-15, *Intangibles – Goodwill and Other Internal-Use Software* (Subtopic 350-40) requires capitalization of certain implementation costs associated with hosting arrangements even when the service-cost aspect of the hosting arrangement is considered an operating expense.



**Federal Accounting Standards Advisory Board**

---

# CLOUD-SERVICE ARRANGEMENTS

## **Statement of Federal Financial Accounting Standards**

### **Draft Exposure Draft**

Written comments are requested by [date 90 days after issuance]

Month day, year

**Working Draft – Public Comments Are Not Requested on This Draft**

---

## THE FEDERAL ACCOUNTING STANDARDS ADVISORY BOARD

The Secretary of the Treasury, the Director of the Office of Management and Budget (OMB), and the Comptroller General of the United States established the Federal Accounting Standards Advisory Board (FASAB or "the Board") in October 1990. FASAB is responsible for promulgating accounting standards for the United States government. These standards are recognized as generally accepted accounting principles (GAAP) for the federal government.

Accounting standards are typically formulated initially as a proposal after considering the financial and budgetary information needs of citizens (including the news media, state and local legislators, analysts from private firms, academe, and elsewhere), Congress, federal executives, federal program managers, and other users of federal financial information. FASAB publishes the proposed standards in an exposure draft for public comment. In some cases, FASAB publishes a discussion memorandum, invitation for comment, or preliminary views document on a specific topic before an exposure draft. A public hearing is sometimes held to receive oral comments in addition to written comments. The Board considers comments and decides whether to adopt the proposed standards with or without modification. After review by the three officials who sponsor FASAB, the Board publishes adopted standards in a Statement of Federal Financial Accounting Standards. The Board follows a similar process for Statements of Federal Financial Accounting Concepts, which guide the Board in developing accounting standards and formulating the framework for federal accounting and reporting.

Additional background information and other items of interest are available at [www.fasab.gov](http://www.fasab.gov):

- [Memorandum of Understanding](#) among the Government Accountability Office, the Department of the Treasury, and the Office of Management and Budget, on Federal Government Accounting Standards and a Federal Accounting Standards Advisory Board
- [Mission statement](#)
- [Documents for comment](#)
- [Statements of Federal Financial Accounting Standards and Concepts](#)
- [FASAB newsletters](#)

### Copyright Information

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from FASAB. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

### Contact Us

Federal Accounting Standards Advisory Board  
441 G Street, NW  
Suite 1155  
Washington, D.C. 20548  
Telephone (202) 512-7350  
Fax (202) 512-7366  
[www.fasab.gov](http://www.fasab.gov)



Chair statement - TBD

WORKING DRAFT

## EXECUTIVE SUMMARY

---

### WHAT IS THE BOARD PROPOSING?

---

Language TBD

### HOW WOULD THIS PROPOSAL IMPROVE FEDERAL FINANCIAL REPORTING AND CONTRIBUTE TO MEETING THE FEDERAL FINANCIAL REPORTING OBJECTIVES?

---

Language TBD

### MATERIALITY

---

The provisions of this Statement of Federal Financial Accounting Standards would not need to be applied to information if the effect of applying the provision(s) is immaterial.<sup>1</sup> A misstatement, including omission of information, is material if, in light of surrounding facts and circumstances, it could reasonably be expected that the judgment of a reasonable user relying on the information would change or be influenced by the correction or inclusion of the information. Materiality should be evaluated in the context of the specific reporting entity. Determining materiality requires appropriate and reasonable judgment in considering the specific facts, circumstances, size, and nature of the misstatement. Consequently, after quantitative and qualitative factors are considered, materiality may vary by financial statement, line item, or group of line items within an entity.

---

<sup>1</sup>Refer to Statement of Federal Financial Accounting Concepts 1, *Objectives of Federal Financial Reporting*, chapter 7, titled *Materiality*, for a detailed discussion of the materiality concepts.

## TABLE OF CONTENTS

---

<b>Executive Summary .....</b>	<b>1</b>
<b>Questions for Respondents .....</b>	<b>3</b>
<b>Introduction .....</b>	<b>4</b>
PURPOSE .....	4
<b>Proposed Standards .....</b>	<b>5</b>
SCOPE .....	5
DEFINITIONS .....	5
RECOGNITION AND MEASUREMENT .....	6
NOTE DISCLOSURE REQUIREMENTS .....	6
REQUIRED SUPPLEMENTARY INFORMATION .....	7
EFFECTIVE DATE .....	8
<b>Appendix A: Basis for Conclusions .....</b>	<b>9</b>
<b>Appendix B: Illustrations .....</b>	<b>10</b>
<b>Appendix C: Abbreviations .....</b>	<b>11</b>
<b>Appendix D: Glossary .....</b>	<b>12</b>

## QUESTIONS FOR RESPONDENTS

---

Q1. TBD for future exposure draft release

WORKING DRAFT

## INTRODUCTION

---

### PURPOSE

---

1. Brief history
  - a. TBD

WORKING DRAFT



## PROPOSED STANDARDS

---

### SCOPE

---

2. This Statement applies to federal entities that present general purpose federal financial reports (GPFFRs), including the consolidated financial report of the U.S. Government (CFR), in conformance with generally accepted accounting principles (GAAP), as defined by paragraphs 5 through 8 of Statement of Federal Financial Accounting Standards (SFFAS) 34, *The Hierarchy of Generally Accepted Accounting Principles, Including the Application of Standards Issued by the Financial Accounting Standards Board*.
3. This Statement applies to cloud-service arrangements that reporting entities acquire for internal use purposes in accordance with paragraph 2 of SFFAS 10, *Accounting for Internal Use Software*, as amended.
4. This Statement does not apply to
  - a. cloud services acquired from other federal entities (shared services);
  - b. developed or purchased commercial off-the-shelf software that is reported in accordance with SFFAS 10 and TR 16, *Implementation Guidance For Internal Use Software*;
  - c. licensed software that allows the reporting entity to possess and control the underlying software resource on its own hardware or systems that is reported in accordance with SFFAS 10 and TR 16; or
  - d. arrangements that provide the reporting entity the right to control the use of property, plant, and equipment in accordance with SFFAS 54, *Leases*, as amended.

### DEFINITIONS

---

5. A cloud<sup>2</sup>-service arrangement is a contract or agreement that provides a federal entity access to information technology (IT) resources over a network, provided by a nongovernmental vendor in exchange for consideration, without the federal entity taking possession of the IT resource.

---

<sup>2</sup> See The National Institute of Standards and Technology: *The NIST Definition of Cloud Computing*, Special Publication 800-145, September 2011- for a comprehensive explanation of “cloud computing” as a resource in the federal government. The NIST defines cloud computing as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

## RECOGNITION AND MEASUREMENT

---

### CLOUD-SERVICE PAYMENTS

---

6. Cloud-service payments consist of payments made by reporting entities to vendors primarily for access to IT resources over a network. Cloud-service providers often charge all-inclusive rates for cloud services that also cover vendor support cost to deliver the cloud service, including labor, infrastructure, energy, cybersecurity, and overhead costs. This guidance applies to total payments made by reporting entities to vendors<sup>3</sup> in exchange for cloud services that could include both the cost for access to the IT resource and the vendor support costs to deliver the service.
7. Reporting entities should recognize payments for cloud-services as an expense when incurred. Reporting entities should recognize a liability for unpaid amounts due at the end of the reporting period to which they relate.
8. Reporting entities should recognize an asset if payments are made in advance of the reporting period to which they relate. Reporting entities should reduce the asset and recognize an expense as the reporting entity receives the service or the advance payment expires<sup>4</sup>.

### IMPLEMENTATION, MAINTENANCE, AND ENHANCEMENTS

---

9. TBD

## NOTE DISCLOSURE REQUIREMENTS

---

### COMPONENT REPORTING ENTITY DISCLOSURES

---

10. Reporting entities should disclose the following for cloud-service arrangements in notes to the financial statements:
  - a. Annual cloud-service expenses in total
  - b. A general description of significant cloud-service arrangements, including:
    - i. The IT resource provided by the cloud service
    - ii. How the cloud-service arrangement contributes to the mission and/or operating performance of the reporting entity
  - c. The general terms and conditions of significant cloud-service arrangements, including:

---

<sup>3</sup> Vendors can include cloud-service providers and cloud resellers. Cloud resellers typically procure cloud services from cloud-service providers and resell them to its own customers along with value-added services to help customers manage and operate cloud systems.

<sup>4</sup> SFFAS 1, Accounting for Selected Assets and Liabilities, paragraphs 57 – 61 provide reporting guidance for advances and prepayments.

- i. Value-added services incorporated in the cloud-service arrangements
  - ii. Whether the reporting entity pays based on variable consumption or a pre-determined fixed price
  - iii. Whether the reporting entity commits to purchasing cloud services for a specific period or can terminate service at any time
  - iv. Whether the reporting entity commits to purchase a fixed amount of cloud services for a discounted price
- d. General financial risks and benefits associated with significant cloud-service arrangements, such as:
  - i. The risk of purchasing upfront or committing to purchase cloud services that could go unused
  - ii. The risk of future cost increases associated with data transfer fees, license restrictions, or price increases
  - iii. Efficiencies achieved by moving IT infrastructure to the cloud

---

#### FINANCIAL REPORT OF THE U.S. GOVERNMENT DISCLOSURES

---

11. The Consolidated Financial Report of the U.S. Government should disclose the following for cloud-service arrangements in notes to the financial statements:
- a. Annual cloud-service expenses in total
  - b. A general description of its significant cloud-service arrangements
  - c. A general reference to relevant component reporting entity reports

---

#### REQUIRED SUPPLEMENTARY INFORMATION

---

##### COMPONENT REPORTING ENTITY DISCLOSURES

---

12. Reporting entities should report annual cloud-service expenses in total by major service-model category in required supplementary information. Service-model categories should include:
- a. Infrastructure-as-a-Service
  - b. Platform-as-a-Service
  - c. Software-as-a-Service

## EFFECTIVE DATE

---

13. The requirements of this Statement are effective for reporting periods beginning after September 30, 202X.

The provisions of this Statement need not be applied to information if the effect of applying the provision(s) is immaterial. Refer to Statement of Federal Financial Accounting Concepts 1, Objectives of Federal Financial Reporting, chapter 7, titled Materiality, for a detailed discussion of the materiality concepts.

WORKING DRAFT

## APPENDIX A: BASIS FOR CONCLUSIONS

---

This appendix discusses some factors considered significant by Board members in reaching the conclusions in this Statement. It includes the reasons for accepting certain approaches and rejecting others. Individual members gave greater weight to some factors than to others. The standards enunciated in this Statement—not the material in this appendix—should govern the accounting for specific transactions, events, or conditions.

This Statement may be affected by later Statements. The FASAB Handbook is updated annually and includes a status section directing the reader to any subsequent Statements that amend this Statement. The authoritative sections of the Statements are updated for changes. However, this appendix will not be updated to reflect future changes. The reader can review the basis for conclusions of the amending Statement for the rationale for each amendment.

### PROJECT HISTORY

---

A1. A new paragraph style for this appendix.

- a. Works for multi-levels
- b. Test
  - i. Works

A2. Test

A3. Test

A4.

## APPENDIX B: ILLUSTRATIONS

---

This appendix illustrates the application of the proposed provisions of this Statement to assist in clarifying their meaning. The facts assumed in these examples are illustrative only and are not intended to modify or limit the requirements of this Statement or to indicate the Board's endorsement of the situations or methods illustrated. Additionally, these illustrations are not intended to provide guidance on determining the application of materiality. Application of the proposed provisions of this Statement may require assessing facts and circumstances other than those illustrated here and require reference to other applicable Statements.

WORKING DRAFT

## APPENDIX C: ABBREVIATIONS

---

CFR	Consolidated Financial Report of the U.S. Government
ED	Exposure Draft
FASAB	Federal Accounting Standards Advisory Board
IUS	Internal Use Software
NIST	National Institute of Standards and Technology
SFFAC	Statement of Federal Financial Accounting Concepts
SFFAS	Statement of Federal Financial Accounting Standards

## APPENDIX D: GLOSSARY

---

WORKING DRAFT



### **FASAB Members**

George A. Scott, Chair

R. Scott Bell

Gila J. Bronner

Robert F. Dacey

Sallyanne Harper

Carol S. Johnson

Patrick McNamee

Terry K. Patton

Raymond Vicks

### **FASAB Staff**

Monica R. Valentine, Executive Director

Josh R. Williams, Senior Analyst

### **Federal Accounting Standards Advisory Board**

441 G Street, NW

Suite 1155

Washington, D.C. 20548

Telephone (202) 512-7350

Fax (202) 512-7366

[www.fasab.gov](http://www.fasab.gov)

## **Prior Board Meeting Timeline**

### **February 2022**

At the February 2022 meeting, staff presented an issues paper that provided a framework for developing reporting guidance updates for software technology assets. Specifically, the issues paper recommended a scope and project plan for developing updates for software guidance based on specific needs identified during research. The scope consists of four major categories of software resources that staff plans to address individually in the following order:

1. Cloud-service arrangements
2. Shared services
3. Internal use software updates
4. Other software technology

The Board overwhelmingly supported staff's recommended scope and planned approach. Additionally, members supported staff's approach of addressing each scope category separately but noted that the categories would ultimately overlap and relate to one another.

The Board decided to first focus on reporting-guidance needs for cloud-service arrangements. Research indicated that federal entities are using cloud services at an increasing rate for operational purposes similar to internally developed software, generally due to the need for less investment risk and more flexibility to alter the amount and type of services received based on current needs. Therefore, it is critical to address reporting guidance for this commonly used software-technology resource to ensure reporting consistency throughout the federal government.

### **April 2022**

At the April 2022 meeting, staff presented characteristics of cloud-service arrangements along with an asset-guidance framework for which to apply the characteristics. The framework analyzes previous asset-guidance decisions that will assist the Board when deliberating whether cloud-service arrangements can represent assets in the federal government. There were three primary takeaways from the discussion:

- The National Institute of Standards and Technology's (NIST) cloud-computing characteristics are widely accepted and used in the federal government.
- Based on the asset-guidance framework, it is appropriate to approach cloud-service arrangements as lease-type transactions that provide a federal entity

access to a provider's software technology resources for the federal entity to use as internal use software for a specified period.

- More research and outreach is needed to develop an informed decision on whether cloud-service arrangements can meet all of the essential characteristics of an asset established in SFFAC 5, Definitions of Elements and Basic Recognition Criteria for Accrual-Basis Financial Statements.

The Board supported using the NIST's cloud-computing characteristics for developing financial reporting guidance for cloud-service arrangements. Several members agreed with staff's observation that federal entities widely use the NIST cloud-computing characteristics and that it is practical to defer to the information technology (IT) professionals when describing cloud-service arrangements.

The Board agreed with staff's proposed asset-guidance framework and observation that it is particularly important to continue to research and deliberate whether cloud-service arrangements can meet the essential characteristics of an asset from SFFAC 5. Some members noted that for an asset to exist, the cloud-service arrangement must represent economic benefits and services that the federal government can use in the future. Other members stated that it is critical to determine whether a consumer of a cloud service could control access to the economic benefits and service of the underlying resource and, particularly, if the user could deny or regulate access to others in accordance with the arrangement.

## **June 2022**

At the June 2022 meeting, two panelists from the General Services Administration (GSA) provided the Board an educational session on cloud-service arrangements. The panelists provided members an overview of the characteristics, service models, and deployment models of cloud computing and discussed ways that federal entities procure and pay for cloud services. Additionally, Board members, staff, and panelists discussed potential financial reporting needs and challenges associated with cloud-service arrangements.

## **August 2022**

During the August 2022 meeting, the Board continued deliberations on reporting guidance for cloud-service arrangements. Staff presented an issues paper that proposed:

- A framework of cloud-service arrangements that could meet the essential characteristics of an asset for financial reporting purposes
- Potential benefits and challenges of reporting cloud service arrangements as assets in federal financial reports

The Board generally supported staff's analysis on whether certain cloud-service arrangement categories could meet the SFFAC 5 essential characteristics of an asset. Some members recommended more research to better understand how federal entities typically incur costs for long-term cloud-service arrangements. One member recommended more research and deliberation on whether cloud-service arrangements are typical service contracts or if they are more akin to leases or right-to-use assets. Another member recommended consideration of how other standard-setters made their determinations on asset reporting for cloud-service arrangements.

The Board also generally agreed with staff's analysis on the user benefits and preparer challenges with reporting cloud-service arrangements as assets in federal financial reports. One member stated that the identified reporting challenges were valid but thought that they could be overcome with proper guidance. A few members suggested further research and deliberation on the financial reporting benefits with note disclosure options versus asset recognition in financial statements. One member added that it was important to continue to seek out a wide range of federal financial report users that have an interest in cloud-service arrangement reporting.

## **October 2022**

During the October 2022 meeting, the Board continued deliberations on reporting guidance for cloud-service arrangements. Staff presented an issues paper that:

- Analyzes how other standard-setting bodies have deliberated the differences between a service contract and a right-to-use asset, along with how those positions have influenced their cloud-service reporting guidance; and
- Examines FASAB's previous discussions of tangible right-to-use assets and service contracts and analyzes whether cloud-service arrangements in the federal environment resemble right-to-use assets or service contracts.

The Board had different opinions on whether multi-year cloud-service arrangements were right-to-use assets or service contracts. One member favored referring to cloud-service arrangements as service contracts because it was difficult to conceive how an entity could exclude others from using an intangible right-to-use asset. Another member stated that cloud services and other types of service contracts possessed a spectrum of right-to-use asset and service components and was concerned that deciding cloud-service arrangements are right-to-use assets could open the door to considering whether other types of service contracts include right-to-use assets.

Several members agreed it was reasonable to conceptualize cloud-service arrangements as right-to-use assets but were concerned that the associated preparer burden and lack of reporting benefits may not justify the need for asset recognition on the balance sheet. The members suggested that disclosures could adequately provide

information about the extent that federal entities use cloud-services for mission and operational needs versus purchasing or developing the IT resource internally.

### **April 2023**

At the April 2023 meeting, staff presented a cost-benefit analysis that considered potential preparer burdens and user benefits for the following financial reporting options for cloud-service arrangements:

1. Balance sheet recognition
2. Commitment disclosure
3. Expense disclosure
4. Expense recognition only

The Board overwhelmingly agreed with the cost-benefit analysis and supported staff's recommendation that reporting guidance should require federal entities to disclose cloud-service expenses. Most members agreed that expense disclosure was optimal after considering the potential preparer burdens and user benefits of each reporting option. Additionally, the majority of members initially favored disclosing cloud-service expenses in required supplementary information rather than financial statement notes.

### **June 2023**

At the June 2023 meeting, staff recommended definition and scope language for the Board's consideration in developing cloud-service arrangement standards. The purpose of the definition is only to inform readers about cloud-computing resources in the federal environment that the standards will address. However, the purpose of the scope is to provide authoritative guidance by explaining the economic transactions associated with cloud-service arrangements that would and would not apply to the standards.

The Board agreed to include the cloud-computing definition developed by the National Institute of Standards and Technology (NIST) Special Publication 800-145, The NIST Definition of Cloud Computing, in the draft reporting guidance proposal. Members generally agreed that the NIST definition along with a reference to the special publication thoroughly explains cloud-computing resources and including the definition in the standards would help readers understand the reporting guidance. Two members voiced concern that the NIST definition was detailed and technical and, therefore, may not be the most effective definition for financial reporting guidance. One member generally preferred to use a more generic and broad definition to provide flexibility in the reporting guidance.

The Board also agreed to include staff's recommended scope language in the draft reporting guidance proposal. The scope generally includes the following guidance:

- A cloud-service arrangement is defined as a contract or agreement that provides a federal entity access to IT resources over a network, provided by a vendor in exchange for consideration, without the federal entity taking possession of the IT resource.
- The Statement applies to cloud services that federal entities acquire from nongovernmental vendors for internal use purposes in accordance with paragraph 2 of SFFAS 10, Accounting for Internal Use Software, as amended.
- The Statement does not apply to
  - cloud-based IT services acquired from other federal entities (such as, but not limited to shared services);
  - internally developed or purchased commercial off-the-shelf software that is reported in accordance with SFFAS 10 and TR 16, Implementation Guidance For Internal Use Software;
  - licensed software that allows the federal entity to possess and control the underlying software resource on its own hardware or systems that is reported in accordance with SFFAS 10 and TR 16; or
  - arrangements that provide the federal entity the right to control the use of property, plant, and equipment that is reported in accordance with SFFAS 54, Leases, as amended.

Members agreed that the Board should revisit the definition and scope if a need arises while deliberating reporting requirements. Staff recommended that the Board eventually consider if the scope should also include shared services.

*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

## **Software Technology Definitions**

Agile development – an umbrella term used to describe software development methods that incrementally deliver working segments of a product in short iterative cycles instead of delivering a usable product only once at the end of a sequential process. This typically involves cross-functional collaboration among development, operational, and security interests to leverage constant feedback from the end-user in order to improve the functionality of the product through multiple iterations and provide constant support.

Application programming interface (API) - a set of definitions and protocols for building and integrating application software that enables applications to exchange data and functionality.

Application software – a type of computer program that performs a specific function for an end-user.

Blockchain - refers to the technological infrastructure and protocols that allow simultaneous access, validation, and record updating across a network in a decentralized manner. Blockchain technology is used with cryptocurrency and smart contracts, among other things.

Bundled IT products and services - services offered as part of acquiring commercial off the shelf software (COTS), licenses, or cloud services that is separate but complementary to the acquired resource (e.g., training, maintenance, data conversion, reengineering, and rights to future upgrades and enhancements).

Cloud bursting – a configuration in which an application runs in a private cloud or data center and surges into a public cloud when the demand for computing capacity spikes during peak times.

Cloud computing - a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

Cloud-service arrangement – a contract or agreement that provides a federal entity access to IT resources over a network, provided by a vendor in exchange for consideration, without the federal entity taking possession of the IT resource.

Commercial-off-the-shelf software (COTS) – ready-made application software that is purchased or licensed from a vendor to utilize the software as intended for internal-use.

Community cloud - the cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be owned,

*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

Computer network – A set of computers that are connected for the purpose of communicating data electronically.

Computer system – a combination of functional and related hardware and software components to perform a desired outcome.

Computing infrastructure – consists of essential and foundational compute, storage, and networking resources required to operate and manage information technology environments. Examples include servers, data centers, and routers, operating systems and firewalls.

Computing platform - a group of technologies or that are used as a foundation upon which software applications are developed and implemented. Examples include coding language, middleware, database management systems, operating systems, application programming interface (API), and firewalls.

Container – a software module that packages code and its necessary elements and dependencies so that the applications runs in any environment. Containers virtualize the operating system and run anywhere, from a private data center to the public cloud.

Container as a service – a cloud service that allows users to manage and deploy software applications using container-based abstraction. Container as a service is considered a kind of subset of Infrastructure-as-a-Service and is found between IaaS and Platform-as-a-Service.

Cryptocurrency - a digital currency in which transactions are verified and records maintained by a decentralized system using blockchain technology, rather than by a centralized authority.

Data conversion – the process of modifying and converting the format of data to transfer it to a more useful format based on a target system. Data conversion enables the data to be read, altered, and executed in an application or database other than that in which it was created.

Data migration – the process of transferring data between formats or systems.

Development, modernization, and enhancement (DME) - refers to projects and activities that lead to new IT assets/systems, or change or modify existing IT assets to substantively improve capability or performance.

Edge computing - is a distributed computing framework that brings applications closer to data sources. This proximity to data at its source can deliver benefits, including faster insights, improved response times and better bandwidth availability. Edge computing is



*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

distinct from cloud computing, since it describes workloads that happen in remote locations that are outside of what are normally considered cloud environment.

Enhancements – any modification that significantly increases computer system capabilities beyond its original functions.

External-use software - software developed by an entity to be sold, licensed, or made publically available solely for the end user's needs.

Hardware – refers to the tangible parts of computer systems that store and run instructions provided by software and makes the processing of data and supports baseline functions.

Hybrid cloud - the cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).

Impairment - occurs when software or another IT asset no longer provides substantive service potential or a significant reduction occurs in the capabilities, functions, or uses of the asset prior to end of its estimated useful life.

Information technology (IT) - the development, implementation, maintenance, and use of computer hardware, software, systems, cloud services, and networks to organize, communicate, and secure information electronically.

Information technology security – a set of strategies, objectives, and methods used to prevent unauthorized access to an organization's IT resources, such as hardware, networks, software, and data.

Infrastructure as a service – the capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

Internet domain - An identification string that defines a realm of administrative autonomy, authority or control within the Internet.

Internet domain name – The internet address of a website. Domain names usually end in a generic name such as .com, .org, or .gov.

Intranet – a network for sharing information, collaboration tools, operational systems, and other computing services within an organization, usually to the exclusion of access by outsiders.

*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

Internal-use software – acquired or developed software that is operated by an entity strictly for its own administrative, security, operational, or mission needs, with no intent of selling or licensing the software.

Internally developed software - software that an entity is actively developing through internal employees, contractors, or a combination of both. This includes significant modifications that adds additional capabilities to new software and existing or purchased COTS software.

Legacy modernization - rewriting or updating a legacy system to modern computer programming languages, architectures, data formats, software applications, or hardware platforms. Legacy systems are often modernized to maintain functionality, add features, or add security.

Legacy system - an old technology, computer system, or application program relating to or being an outdated, inefficient, and/or incompatible computer system that is still in use and may pose inoperability and compatibility issues or risks to other systems without modernization.

Load balancing – the process of distributing traffic and workloads across computing resources in a cloud environment to ensure that no single server or machine is under-loaded, overloaded, or idle.

Maintenance and repair – the process of monitoring, updating, and preserving software applications and IT infrastructure currently in use to sustain computer system security and operability without adding new capabilities or functions.

Network-as-a-service - a cloud model that enables users to operate the network and achieve the outcomes they expect from it without owning, building, or maintaining their own infrastructure. NaaS is simply IaaS without compute and storage capacity.

Operating system – the software that supports a computer system's basic operations by communicating with hardware and directing the processing of programs. Also called system software.

Platform as a service - the capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

Private cloud - the cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned,

*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

Prototyping – the activity of creating working models of software applications used to gather end-user feedback for further design and implementation considerations for the final product. Prototyping can be utilized as part of agile development methods.

Public cloud - the cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.

Robotic process automation – software automation technologies that imitate mundane rules-based business processes traditionally performed by humans, such as extracting data, filling in forms, and moving files.

Serverless cloud computing - enables developers to build and run application code without provisioning or managing servers or backend infrastructure. All developers need to do is write their application code and deploy it to containers managed by a cloud service provider. The cloud provider handles the rest, provisioning the cloud infrastructure required to run the code and scaling the infrastructure up and down on demand as needed. This is similar to PaaS, however, serverless solutions enable developers to create applications that automatically scale without managing backend infrastructure or server resources.

Shared service - a mission, operation, or administrative support function provided by a federal entity to other federal entities (interagency) or to separate components within the same entity (intra-agency).

Software - a set of instructions that tell a computer to operate and perform specific tasks. Software is often used to describe the intangible functional aspects of a computer and includes application and operating system programs, procedures, rules, and any associated instructions pertaining to the operation of a computer system or program.

Software as a service – the capability provided to the consumer is to use the provider's applications running on a cloud infrastructure . The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

Software-hardware integrated asset – application software that is integrated into and necessary to operate general PP&E and does not serve another purpose separate from the hardware. Also referred to as “integrated or embedded systems”.

*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

Software in development – the accumulated cost of developing an internal use software asset that is not yet complete. Similar to construction in process (CIP) for PP&E.

Software license - a legal instrument governing permissions and restrictions for use of a software application, source code, or related product. A software license is a product that gives the consumer various intellectual property rights over a vendor's underlying software resource. The acquired license in this scenario generally allows the consumer to possess the underlying software resource on their own hardware and/or IT systems. A license can apply to individuals or entire organizations and can provide perpetual or term-based rights.

Thick client – Thick clients IT devices are full featured computers with all the standard hardware and locally installed operating system and applications.

Thin client - Thin clients are IT devices that connect remotely into a separate server or data center that does all the work in a virtual environment.

Update – a way to fine-tune a product to keep it running in an optimal manner. Software updates usually consist of small and frequent changes to correct security issues or coding bugs.

Upgrade – A new version of software that replaces the old product and is used for significant changes and/or major improvements.

Waterfall development model – a non-iterative development method that breaks down activities into sequential and exclusive phases where each phase depends on the deliverables of the previous one and a usable product is produced after all phases occur. Also referred to as “Linear development model”.

Web applications – an application software that is accessed through a website.

Web page – a document written in hypertext that can be viewed by an internet browser.

Website - collection of internally or publicly accessible, interlinked web pages that share a single domain name.

*Disclaimer: This material is presented for discussion purposes only; it is not intended to reflect authoritative views of the FASAB or its staff. Official positions of the FASAB are determined only after extensive due process and deliberations.*

[illegible]