

DATA Act Schema Model

Draft Version 0.1

1 BACKGROUND

The DATA Act directs OMB and Treasury to establish government-wide data standards for federal funds and entities receiving such funds. While standard data definitions will help to ensure that information will be consistent and comparable, a standard data exchange, as part of our implementation will make financial management data accessible and reusable and provide the necessary linkages between financial events. By making federal spending data accessible, searchable, and reliable, the public can understand how government spending impacts their communities. The standard data exchange will also reduce the need for massive system changes across federal agencies to collect information and allow agencies to focus on managing data.

Accordingly, Treasury will issue data exchange guidelines that leverage industry standards to tag financial and non-financial data with metadata, or structured information that describes, explains, locates, or otherwise makes it easier to retrieve data. Treasury will require agencies to submit data for posting on USAspending.gov (or successor site) via a standard data exchange called the “Digital Accountability Transparency Act Schema” (DATA Act Schema).

The standard data exchange, or DATA Act Schema, has two components: a standard taxonomy and a standard format, or “language” for exchanging data. The DATA Act Schema includes the required DATA Act data elements and related metadata, including relationship and validation rules. The DATA Act Schema will provide a comprehensive view of the data definition standards and their relationships to one another.

Treasury has created a draft subset of the DATA Act Schema based upon a subset of U.S. Standard General Ledger (USSGL), which is expressed in XML. The draft schema can be found [here](#). Additional components of the DATA Act Schema will be created in the future to capture other data elements (see Figure 1). For data transmission within the federal government and to external stakeholders, Treasury will leverage a combination of XBRL, JSON, Protocol Buffer, CSV, and other formats, as appropriate. This will allow matching of the optimal format given data volume, performance, and data presentation needs.

The DATA Act Schema will be revised periodically and is expected to evolve over time to capture unique requirements for more complex or specialized areas and to reflect changes due to law or regulation.

The DATA Act Schema, including a both the technical representation and “human readable” taxonomy documentation and format are provided [here](#).

Important: *The draft schema does not constitute as official USSGL guidance and should not be used as official guidance by federal agencies or the public. For official guidance, see*

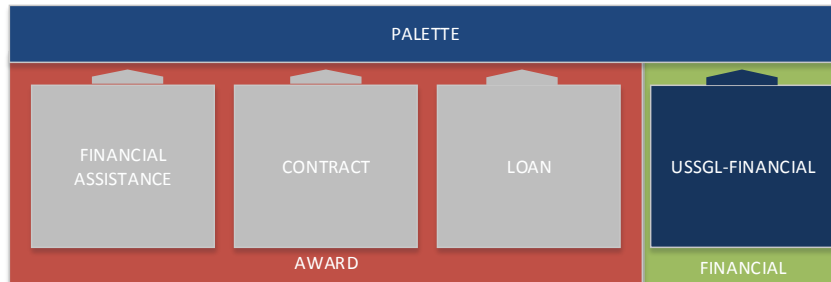
<http://tfm.fiscal.treasury.gov/v1/supplements/ussgl.html>.

2 SUMMARY

The draft DATA Act Schema, as depicted here in Figure 1, is a model that includes the DATA Act data [element](#) areas. The model represents both awards (Financial Assistance, Contract, and Loan) and financial data (i.e., Obligations, Outlays).

Figure 1: The DATA Act Schema

The DATA Act Schema will be composed of several schemas, standardizing the way we represent financial assistance, contract, and loan award data as well financial data.



The structure of the DATA Act Schema is such that a complete representation is “compiled” by assembling a set of schemas via a parent schema to represent a specific business concept around financial assistance, contracts, loans, either singularly or in any combination.

Each of these schemas can be seen as a building block to assemble structured data oriented to USSGL accounting concepts. The USSGL provides a uniform chart of accounts and technical guidance for standardizing federal agency accounting.

3 SCOPE OF RELEASE

This document defines the current release of the draft DATA Act Schema for review. The draft DATA Act Schema is a work in progress and, as such, this is a living document intended to change with each new release.

In the current release, only a subset of the draft USSGL-Financial schema (depicted in blue) is being released for review. Subsequent releases will begin to include the other schemas (depicted in grey) as they are drafted.

3.1 BROADER CONSIDERATIONS

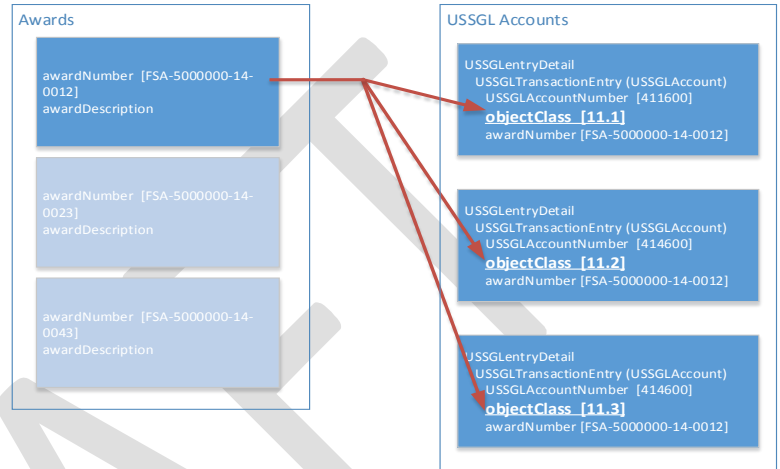
In anticipation of future releases to both the financial and award schemas, please note the following broad considerations:

3.1.1 The Interaction of the Awards and Financial Modules

It is important to note that the modular structure of the DATA Act Schema allows for both a one-to-one OR a one-to-many relationship between an award (e.g., contract, loan, etc.) and the object class (objectClass) of a USSGL account and its transactions. The USSGL account transaction and the award are linked by the award identifier (awardNumber) in the DATA Act Schema.

As depicted in Figure 2, each award transaction entry contains a link called an award identifier which links it directly to the USSGL accounts and transaction for that award. The USSGL accounts and transactions also contain an object class descriptor, which allows the accounts and transactions to be associated with one or more object class values. These can be at both the summary USSGL account level and the detailed transaction level. As stated previously, this representation of object class does not constitute as official USSGL guidance. For official guidance, see <http://tfm.fiscal.treasury.gov/v1/supplements/ussgl.html>.

Figure 2: Awards relationship to USSGL accounts



3.1.2 Benefits: Enhanced Analytic Capabilities

The implementation of a DATA Act Schema creates a common language across information assets and can represent data across multiple systems. This creates some distinct advantages around:

Improved business intelligence capabilities across disparate sources of data

More effective self-service of business intelligence

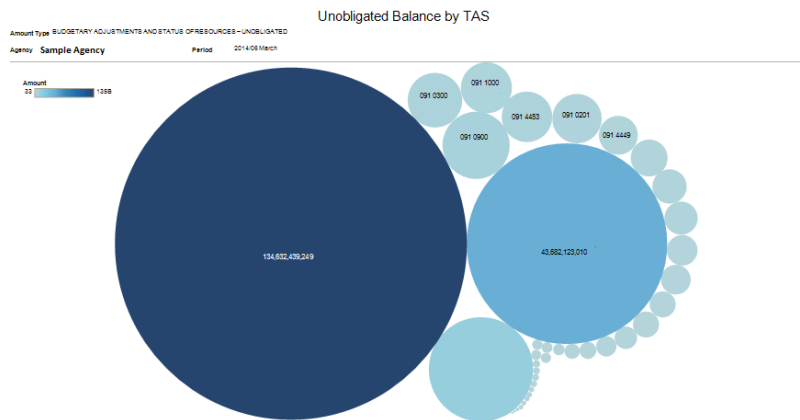
Cross-agency analysis opportunities

Elimination of redundant reporting/report updates and maintenance

For example, by implementing the DATA Act Schema, a user can enhance and enable real-time analysis of balances of budget authority by appropriations account, which can better enable agencies to manage their programs.

Figure 3: Budget Authority (illustrative example)

The analysis in Figure 3 represents a sample of how a user could analyze information on obligations unpaid/pre-paid/advanced, segment it by apportionment category, budget authority, etc., and review the detailed USSGL account entries.



4 DERIVED DATA ACT ELEMENTS

The DATA Act Schema provides detailed data and aggregates that detail into summary level information. Below are a list of DATA Act elements which are considered summary-level and a description of how those values are derived from the detailed account transaction-level data. Note: The below table does not constitute as official USSGL guidance (For official guidance, see <http://tfm.fiscal.treasury.gov/v1/supplements/ussgl.html>).

Data Element Name	Aggregate values
Appropriations Account	Summary based on the TAS (i.e. 01X1234)
Amount of Budget Authority Appropriated	Calculated based on USSGL account balances, there are a number of USSGL accounts which make up this value including: Appropriated, Contract, Borrowing, and Spending Authority from Offsetting Collections
Obligated Amount	Calculated based on USSGL account balances and difference between opening and closing balances, main USSGL accounts are 480100, 480200, 490100, 490200**
Unobligated Amount	Calculated based on USSGL account balances, main USSGL accounts are 445000, 451000, 461000 and 465000**
Amount of other budgetary resources	Calculated based on USSGL account balances
Outlay	Calculated based on USSGL account balances and difference between opening and closing balances, main USSGL accounts are 480200 and 490200**

**Note that the USSGL accounts listed don't make up the entire population of possible USSGL accounts for those balances, but those will be the biggest accounts.

4.1 FINANCIAL DATA ACT ELEMENTS

Element: accountingEntries

Proposed Type: complex

Data Element	Description	Type	Length	Example	Data Act Element
FiscalYear	Designates the fiscal year for which the data is being submitted.	String	4	2014	-
Period	Designates the month for which the data is being submitted. This is a 2 digit number that starts with 01 for October and goes through 12 for September.	String		6	-
USSGLentryHeader		See complex type USSGLentryHeader below	-	-	-

4.1.1 Entry Header

Element: USSGLentryHeader

Proposed Type: complex

Data Element	Description	Type	Length	Example	Data Act Element
TreasuryAccountSymbol		See complex type TreasuryAccountSymbol Below	-	-	-
USSGLentryDetail		See complex type USSGLentryDetail below	-	-	-

4.1.1.1 Treasury Accounting Symbol

Element: TreasuryAccountSymbol

Proposed Type: complex

Treasury Account Symbol (TAS). An identification code assigned by the Department of the Treasury, in collaboration with OMB and the owner agency, to an individual appropriation, receipt, or other fund account. (These accounts are defined in TFM Volume I, Part 2, and Chapter 1500.) The term "Treasury Account Symbol" is a generic term used to describe any one of the account identification codes assigned by the Department of the Treasury. The term "Treasury Appropriation/Fund Symbol" (TAFS) is used to describe a particular type of TAS-one with budget authority. All financial transactions of the federal

government are classified by TAS for reporting to the Department of the Treasury and OMB. Note that the proposed definition of TAS will be posted [here](#) when it becomes available.

DATA Act element definitions in the table below correlate directly to the DATA Act element definitions found [here](#).

Data Element	Description	Type	Length	Example	Data Act Element
allocationTransferID	This is a component of the TAS. Identifies the agency receiving funds through an allocation transfer.	String			-
agencyID	This is a component of the TAS. Identifies the department, agency, or establishment of the U.S. government that is responsible for the TAS.	String		20	Funding Entity Information / Agency Code
agencyDescription		String			Funding Entity Information /Agency Name
beginningPOA	A component of the TAS. It identifies the last year of availability under law that an account may incur new obligations for annual and multiyear TAS. The field is blank for unavailable receipt TAS and TAS that have a value for availability type	String			-
endPOA	A component of the TAS. It identifies the last year of availability under law that an account may incur new obligations for annual and multiyear TAS. The field is blank for unavailable receipt TAS and TAS that have a value for availability type	String			-
availableTypeCode	This is a component of the TAS. Identifies no-year TAS (X), clearing/suspense TAS (F), and default TAS (C). This field is blank for TAS that have periods of availability and unavailable receipt TAS.	availableTypeCodeItem (enumeration) (string)	1	C F X	-
mainAccount	This is a component of the TAS. Identifies the type and purpose of the fund. This field cannot be blank.	string		0310	-
subAccount	This is a component of the TAS. Identifies an available receipt or other Treasury-defined subdivision of the main account. This field cannot be blank. Subaccount 000 indicates that there is no subaccount.	string		0	-
beaCategoryCode	Budget Enforcement Act Code indicates if budget authority and outlays are controlled by annual appropriation acts (discretionary) or by permanent laws (mandatory).	beaCategoryCodeItem (enumeration)	1	D S	-
budgetAgency	Identifies a department, agency or establishment of the U.S. Government that is responsible for the budget account. This is the same as the Agency Identifier shown as part of the TAS	String		15	-
budgetBureau	A Budget Bureau is an organizational unit within a Budget Agency and consists of one or more accounts for presentation in the President's Budget.	string		0	-
budgetSubFunction	OMB assigns each expenditure and offsetting receipt account a three-digit code that corresponds to the account's sub-functional classification (e.g., national defense, income security, agriculture). Annually, OMB consults with CBO and other relevant budget and appropriation committee staff members regarding functional and sub-functional classification. This process, which is required by statute, typically occurs from October through December.	string		0	-

4.1.1.2 USSGL Entry Detail

Element: USSEntryDetail

Proposed Type: complex

Data Element	Description	Type	Length	Example	Data Act Element
USSGLaccount	Identifies the USSGL account. The USSGL account must be in the USSGL chart of accounts.	See complex type USSGLaccount below	-	-	-
amount	This field contains the balance of the USSGL account. Each USSGL account on each row of the bulk file must have a balance.	monetaryItemType (numeric)	Unbounded	222750500.50	-
debitCreditCode	Indicates whether the amount reported is debited or credited to the USSGL account	debitCreditCodeItemType (enumeration)	1	D C	-
beginningEndIndicator	Indicates whether the balance or an USSGL account/attribute combination is at the start of the fiscal year or at the end of a period	beginningEndIndicatorItemType (enumeration)	1	B E	-
authorityType	Distinguishes among the types of budgetary resources, where it is not possible to do so by the USSGL Account Number Code. For example, the USSGL rescission accounts (USSGL accounts 4392 and 4393) do not distinguish between rescissions of appropriations or contract authority.	authorityTypeItemType (enumeration)	1	B C D E F P R S	-
reimbursableFlag	Indicates whether amounts for goods, services, and joint project support are financed by offsetting collections.	reimbursableFlagItemType (enumeration)	1	D R	-
apportionmentCategoryCode	Identifies OMB apportionments by quarters (Category A) or by other specified time periods, programs, activities, projects, objects, or combinations of these (Category B), or are not subject to apportionment (Category E).	ApportionmentCategoryCodeItemType (enumeration)	1	A B E	-
apportionmentCategoryBProgramCode	The code representing the category A/B and B program used on the SF 132 apportionment schedule. Apportionment Category B Program Code is the four digit number from 6011-6159 that represents a line on the apportionment schedule. The category B program code is required if the apportionment category is A/B or B. Category B programs are subject to the Anti-Deficiency Act	String		6013	-
programReportCategoryNumber	Identifies a program report category that agencies use when reporting their obligations in their detailed financial information. Agencies may use this code when reporting either Category A or Category B obligations. Unlike the Apportionment Category B Program, this code is NOT subject to the Anti-Deficiency Act	String		999	-
federalNonFederalIndicator	Indicates the type of entity involved in transactions with the reporting entity: other Federal entities (F); non-Federal entities such as private/local/state/tribal/foreign governments (N), exceptions for other non-Federal partners (E), or General Fund only, G.	federalNonFederalIndicatorItemType (enumeration)	1	E F G N Z	-
tradingPartnerAgencyIdentifier	Represents the agency identifier of the other department, agency, or establishment of the U. S. government involved in transactions with the reporting entity. Required with the proprietary USSGLs if the Fed/Non-Federal Indicator = F or G.	String		099	-

tradingPartnerMainAccountCode	Represents the treasury main account code of the other department, agency, or establishment of the U. S. Government involved in transactions with the reporting entity. Required with the proprietary USSGLs if the Fed/Non-Federal Indicator = F.	String		0000	-
yearOfBudgetAuthorityCode	Identifies whether outlays are from the new budget authority (NEW) or from budget authority carried forward from the prior year (BAL). Used for expenditure TAS that are not credit financing TAS.	yearOfBudgetAuthorityCodeItem Type (enumeration)	3	BAL NEW	-
availabilityTimeIndicator	Indicates whether a budgetary resource is available for new obligations in the current period, or in a subsequent period within the current fiscal year or after being reapportioned in a future fiscal year.	availabilityTimeIndicatorItem Type (enumeration)	1	A S	-
beaCategoryIndicator	Indicates whether the Budget Enforcement Act (BEA) category is mandatory or discretionary.	beaCategoryIndicatorItem Type (enumeration)	1	D M	-
borrowingSource	Indicates whether borrowing took place from the public, Treasury, or a Federal financing bank. Required if authority type code is B (borrowing).	borrowingSourceItem Type (enumeration)	1	F P T	-
exchangeNonExchangeIndicator	Indicates whether the revenue, gains or losses balances being reported is exchange (X), non-exchange (T) or (E) exchange revenue with little or no associated costs.	exchangeNonExchangeIndicatorItem Type (enumeration)	1	E T X	-
custodialNonCustodialIndicator	Custodial amounts are reported on the Statement of Custodial Activity (SCA) or on the custodial footnote. Noncustodial amounts are not reported on the SCA nor on the custodial footnote.	custodialNonCustodialItem Type (enumeration)	1	A S	-
budgetaryImpact	Indicates whether financing resources and non-exchange revenue have an impact on the budget	budgetaryImpactItem Type (enumeration) (string)	1	D E	-
priorYearAdjustmentCode	Changes to obligated or unobligated balances that occurred in the previous fiscal year but were not recorded in the appropriate TAFS as of October 1 of the current fiscal year. Exclude upward and downward adjustments to current-year/prior-year obligations and most reclassifications from clearing accounts.	priorYearAdjustmentCodeItem Type (enumeration)	1	B P X	-
creditCohortYear	Fiscal year when direct loans are obligated or guarantees committed by a program, even if disbursements occur in subsequent fiscal years.	gYearItem Type) not used (string)	4	2014	-
programIndicator	The amount of cost or revenue directly or indirectly traceable to programs	programIndicatorItem Type (enumeration)	1	P Q	-
reductionType	The code representing the type of reduction being reported (e.g., Across The Board, Sequestration or Other) in detailed financial information. The domain values may change in subsequent fiscal	reductionTypeItem Type (enumeration)	3	AB1 SEQ XXX OTR	-

4.1.1.2.1 USSGL Account

Element: USSGLAccount

Data Element	Description	Type	Length	Example	Data Act Element
USSGLAccountNumber		string		101000	-
objectClass		string		11.1	#74
awardNumber	Award ID	string		FSA-5000000-14-0012	#80

5 APPENDIX

5.1 SUPPORTING META-DATA IDENTIFIED

Meta-data is descriptive data which creates context for the data it is describing. For example, an agency identifier is typically a number (e.g., 71) but the meta-data of a description (e.g., Department of Agriculture) provides the end user with an understanding of what “71” means.

- NAICS codes and descriptions
- Recipient Identification numbers and meta-data
- USSGL Chart of Accounts Descriptions
- Agency descriptions/names

DRAFT