IPMDAR Contract Performance Dataset

Version 1.0

File Format Specification

Draft – December 2, 2019

[1 Overview 2](#_Toc516570956)

[2 Data Model 2](#_Toc516570957)

[2.1 Data Model Conventions 2](#_Toc516570958)

[2.2 Tables 4](#_Toc516570959)

[2.3 Primitive Data Types 21](#_Toc516570960)

[2.4 Enumerations 21](#_Toc516570961)

[3 File Format 24](#_Toc516570962)

[3.1 File Conventions 24](#_Toc516570963)

[3.2 File Contents 25](#_Toc516570964)

[3.3 File Type/Version 25](#_Toc516570965)

[4 Representation in JSON 26](#_Toc516570966)

[4.1 JSON Conventions 26](#_Toc516570967)

[4.2 JSON Schema Sample 26](#_Toc516570968)

[4.3 JSON Data Sample 27](#_Toc516570969)

[5 References 27](#_Toc516570970)

# Overview

This document is intended as a technical reference for computer programmers implementing software to support the exchange of data composing the IPMDAR Contract Performance Dataset.

# Data Model

Data in an IPMDAR Contract Performance Dataset are modeled as a collection of tables related by primary and foreign key constraints.

## Data Model Conventions

Tables

A table has a collection of fields and a collection of records. Each field has a name and a primitive data type. Each record has a collection of field values. Each field value must be consistent with the data type of the corresponding field. Records have an implicit sequence.

Nullable Fields

Records may omit values for fields that are nullable but must include values for fields that are not nullable. Unless otherwise noted, omitted field values may be interpreted as null, undefined, or “not applicable”. All of these interpretations are considered equivalent.

Key Constraints

A primary key constraint defines a collection of fields for a table such that the corresponding field values uniquely identify each record. No two records may have the same collection of corresponding field values.

A foreign key constraint defines a correspondence between a field in one table and a field in another table such that the field value for each record in the former must match the field value for some record in the latter.

Enumerations

Enumerations are implicit lookup tables available for use with foreign key constraints.

Singletons

Singletons are tables with exactly one record.

Strings

Strings are sequences are of text characters defined by the Unicode standard.

The following control characters are prohibited in all string values: (U+0000–U+0008), (U+000B–U+000C), (U+000E–U+001F), (U+007F). String values used as ID’s are further limited to a character set representing common printable characters (U+0020–U+007E).

Most string values must have normalized whitespace. A string value with normalized whitespace cannot begin or end with whitespace characters, cannot contain any whitespace characters other than the space character (U+0020), and cannot contain any sequence of two or more contiguous space characters.

Normalized whitespace is not required for string values used for remarks or other expository text.

Comparison of string values for the purpose of verifying key constraints is not case sensitive.

Empty string values are interpreted as equivalent to null values for fields with a string data type. Records must include non-empty string values for string fields that cannot be null.

WBS/OBS Hierarchical Structure

The hierarchical structure of the WBS and OBS is determined based on the level and sequence of the elements reported. Specifically, elements must be sorted in a manner consistent with a depth-first search of the element hierarchy, such that the parent element of a given element must be the nearest preceding element with a reported level less than that of the given element. Each element that succeeds another must have a level that is no more than 1 greater than the level of the preceding element. The minimum level is 1.

## Tables

### DatasetConfiguration

|  |  |
| --- | --- |
| Table | DatasetConfiguration |
| Entity | DatasetConfiguration |
| Fields | Name | Data Type | Nullable |
| NonAdd\_OH | Boolean | No |
| NonAdd\_COM | Boolean | No |
| NonAdd\_GA | Boolean | No |
| ToDate\_TimePhased | Boolean | No |
| Detail\_HasDirectValues | Boolean | No |
| Detail\_HasIndirectValues | Boolean | No |
| BCWS\_ToDate\_ByWorkPackage | Boolean | No |
| BCWS\_ToDate\_HasElementOfCostValues | Boolean | No |
| BCWP\_ToDate\_ByWorkPackage | Boolean | No |
| BCWP\_ToDate\_HasElementOfCostValues | Boolean | No |
| ACWP\_ToDate\_ByWorkPackage | Boolean | No |
| ACWP\_ToDate\_HasElementOfCostValues | Boolean | No |
| BCWS\_ToComplete\_ByWorkPackage | Boolean | No |
| BCWS\_ToComplete\_HasElementOfCostValues | Boolean | No |
| EST\_ToComplete\_ByWorkPackage | Boolean | No |
| EST\_ToComplete\_HasElementOfCostValues | Boolean | No |
| Primary Key | [N/A] |
| Foreign Keys | [N/A] |
| Use Constraints | DatasetConfiguration is a singleton. |

### DatasetMetadata

|  |  |
| --- | --- |
| Table | DatasetMetadata |
| Entity | DatasetMetadata |
| Fields | Name | Data Type | Nullable |
| SecurityMarking | String | No |
| DistributionStatement | Text | Yes |
| ReportingPeriodID | Integer | No |
| ContractorName | String | Yes |
| ContractorIDCodeTypeID | StringID | Yes |
| ContractorIDCode | String | Conditional |
| ContractorAddress\_Street | Text | Yes |
| ContractorAddress\_City | String | Yes |
| ContractorAddress\_State | String | Yes |
| ContractorAddress\_Country | String | Yes |
| ContractorAddress\_ZipCode | String | Yes |
| PointOfContactName | String | Yes |
| PointOfContactTitle | String | Yes |
| PointOfContactTelephone | String | Yes |
| PointOfContactEmail | String | Yes |
| ContractName | String | Yes |
| ContractNumber | String | Yes |
| ContractType | String | Yes |
| ContractTaskOrEffortName | String | Yes |
| ProgramName | String | Yes |
| ProgramPhase | String | Yes |
| EVMSAccepted | Boolean | Yes |
| EVMSAcceptanceDate | Date | Conditional |
| Primary Key | [N/A] |
| Foreign Keys | ReportingPeriodID: ReportingPeriod(ID)ContractorIDCodeTypeID: ContractorIDCodeTypeEnum(ID) |
| Use Constraints | DatasetMetadata is a singleton.ContractorIDCode must be null unless ContractorIDCodeTypeID is not null.EVMSAcceptanceDate must be null unless EVMSAccepted has a value of True. |

### SourceSoftwareMetadata

|  |  |
| --- | --- |
| Table | SourceSoftwareMetadata |
| Entity | SourceSoftwareMetadata |
| Fields | Name | Data Type | Nullable |
| Data\_SoftwareName | String | Yes |
| Data\_SoftwareVersion | String | Yes |
| Data\_SoftwareCompanyName | String | Yes |
| Data\_SoftwareComments | Text | Yes |
| Export\_SoftwareName | String | Yes |
| Export\_SoftwareVersion | String | Yes |
| Export\_SoftwareCompanyName | String | Yes |
| Export\_SoftwareComments | Text | Yes |
| Primary Key | [N/A] |
| Foreign Keys | [N/A] |
| Use Constraints | SourceSoftwareMetadata is a singleton. |

### ContractData

|  |  |
| --- | --- |
| Table | ContractData |
| Entity | ContractData |
| Fields | Name | Data Type | Nullable |
| Quantity\_Development | Decimal | Yes |
| Quantity\_LRIP | Decimal | Yes |
| Quantity\_Production | Decimal | Yes |
| Quantity\_Sustainment | Decimal | Yes |
| NegotiatedContractCost | Decimal | Yes |
| AuthorizedUnpricedWork | Decimal | Yes |
| TargetFee | Decimal | Yes |
| TargetPrice | Decimal | Yes |
| EstimatedPrice | Decimal | Yes |
| ContractCeiling | Decimal | Yes |
| EstimatedContractCeiling | Decimal | Yes |
| OriginalNegotiatedContractCost | Decimal | Yes |
| ManagementEAC\_BestCase | Decimal | Yes |
| ManagementEAC\_WorstCase | Decimal | Yes |
| ManagementEAC\_MostLikely | Decimal | Yes |
| ContractBudgetBase | Decimal | Yes |
| TotalAllocatedBudget | Decimal | Yes |
| ContractStartDate | Date | Yes |
| ContractDefinitizationDate | Date | Yes |
| BaselineCompletionDate | Date | Yes |
| ContractCompletionDate | Date | Yes |
| ForecastCompletionDate | Date | Yes |
| LastOTBDate | Date | Yes |
| Primary Key | [N/A] |
| Foreign Keys | [N/A] |
| Use Constraints | ContractData is a singleton. |

### SummaryPerformance

|  |  |
| --- | --- |
| Table | SummaryPerformance |
| Entity | SummaryPerformanceRecord |
| Fields | Name | Data Type | Nullable |
| SummaryElementID | StringID | No |
| BCWS\_CumulativeToDate\_Dollars | Decimal | Yes |
| BCWP\_CumulativeToDate\_Dollars | Decimal | Yes |
| ACWP\_CumulativeToDate\_Dollars | Decimal | Yes |
| ReprogSVA\_Dollars | Decimal | Yes |
| ReprogCVA\_Dollars | Decimal | Yes |
| ReprogBA\_Dollars | Decimal | Yes |
| BAC\_Dollars | Decimal | Yes |
| EAC\_Dollars | Decimal | Yes |
| BCWS\_CumulativeToDate\_Hours | Decimal | Yes |
| BCWP\_CumulativeToDate\_Hours | Decimal | Yes |
| ACWP\_CumulativeToDate\_Hours | Decimal | Yes |
| ReprogSVA\_Hours | Decimal | Yes |
| ReprogCVA\_Hours | Decimal | Yes |
| ReprogBA\_Hours | Decimal | Yes |
| BAC\_Hours | Decimal | Yes |
| EAC\_Hours | Decimal | Yes |
| Primary Key | SummaryElementID |
| Foreign Keys | SummaryElementID: SummaryElementEnum(ID) |
| Use Constraints | Hours fields must be null unless the value of SummaryElementID is PMB. |

### CustomSummaryPerformance

|  |  |
| --- | --- |
| Table | CustomSummaryPerformance |
| Entity | CustomSummaryPerformanceRecord |
| Fields | Name | Data Type | Nullable |
| ID | StringID | No |
| Name | String | No |
| BCWS\_CumulativeToDate\_Dollars | Decimal | Yes |
| BCWP\_CumulativeToDate\_Dollars | Decimal | Yes |
| ACWP\_CumulativeToDate\_Dollars | Decimal | Yes |
| ReprogSVA\_Dollars | Decimal | Yes |
| ReprogCVA\_Dollars | Decimal | Yes |
| ReprogBA\_Dollars | Decimal | Yes |
| BAC\_Dollars | Decimal | Yes |
| EAC\_Dollars | Decimal | Yes |
| BCWS\_CumulativeToDate\_Hours | Decimal | Yes |
| BCWP\_CumulativeToDate\_Hours | Decimal | Yes |
| ACWP\_CumulativeToDate\_Hours | Decimal | Yes |
| ReprogSVA\_Hours | Decimal | Yes |
| ReprogCVA\_Hours | Decimal | Yes |
| ReprogBA\_Hours | Decimal | Yes |
| BAC\_Hours | Decimal | Yes |
| EAC\_Hours | Decimal | Yes |
| Primary Key | ID |
| Foreign Keys | [N/A] |
| Use Constraints |  |

### SummaryIndirectPerformance\_ToDate

|  |  |
| --- | --- |
| Table | SummaryIndirectPerformance\_ToDate |
| Entity | SummaryIndirectPerformance\_ToDate |
| Fields | Name | Data Type | Nullable |
| SummaryIndirectElementID | StringID | No |
| ReportingPeriodID | Integer | Conditional |
| BCWS\_Dollars | Decimal | Yes |
| BCWP\_Dollars | Decimal | Yes |
| ACWP\_Dollars | Decimal | Yes |
| Primary Key | SummaryIndirectElementID, ReportingPeriodID |
| Foreign Keys | SummaryIndirectElementID: SummaryIndirectElementEnum(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | Constraints for this table depend on field values reported in DatasetConfiguration as follows:If ToDate\_TimePhased has a value of true, ReportingPeriodID must not be null; otherwise, ReportingPeriodID must be null.If not null, ReportingPeriodID must have a value that is less than or equal to the value of ReportingPeriodID in DatasetMetadata. |

### SummaryIndirectPerformance\_ToComplete

|  |  |
| --- | --- |
| Table | SummaryIndirectPerformance\_ToComplete |
| Entity | SummaryIndirectPerformance\_ToComplete |
| Fields | Name | Data Type | Nullable |
| SummaryIndirectElementID | StringID | No |
| ReportingPeriodID | Integer | No |
| BCWS\_Dollars | Decimal | Yes |
| EST\_Dollars | Decimal | Yes |
| Primary Key | SummaryIndirectElementID, ReportingPeriodID |
| Foreign Keys | SummaryIndirectElementID: SummaryIndirectElementEnum(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | ReportingPeriodID must have a value that is greater than the value of ReportingPeriodID in DatasetMetadata. |

### Subcontractors

|  |  |
| --- | --- |
| Table | Subcontractors |
| Entity | Subcontractor |
| Fields | Name | Data Type | Nullable |
| ID | StringID | No |
| Name | String | No |
| Primary Key | ID |
| Foreign Keys | [N/A] |
| Use Constraints |  |

### WBS

|  |  |
| --- | --- |
| Table | WBS |
| Entity | WBSElement |
| Fields | Name | Data Type | Nullable |
| Level | Integer | No |
| ID | StringID | No |
| Name | String | No |
| ParentID | StringID | Conditional |
| Primary Key | ID |
| Foreign Keys | ParentID: WBSElement(ID) |
| Use Constraints | Order of records is significant. In particular, hierarchical structure is determined based on level and sequence of records. See above.The first record must have Level equal to 1. All other records must have Level greater than 1.The first record must have a null ParentID. All other records must have a ParentID equal to the ID of the parent record determined by the hierarchical structure. |

### OBS

|  |  |
| --- | --- |
| Table | OBS |
| Entity | OBSElement |
| Fields | Name | Data Type | Nullable |
| Level | Integer | No |
| ID | StringID | No |
| Name | String | No |
| SubcontractorID | StringID | Yes |
| ParentID | StringID | Conditional |
| Primary Key | ID |
| Foreign Keys | SubcontractorID: Subcontractor(ID)ParentID: OBSElement(ID) |
| Use Constraints | Order of records is significant. In particular, hierarchical structure is determined based on level and sequence of records. See above.The first record must have Level equal to 1. All other records must have Level greater than 1.The first record must have a null ParentID. All other records must have a ParentID equal to the ID of the parent record determined by the hierarchical structure. |

### ControlAccounts

|  |  |
| --- | --- |
| Table | ControlAccounts |
| Entity | ControlAccount |
| Fields | Name | Data Type | Nullable |
| IsSummaryLevelPlanningPackage | Boolean | Yes |
| ID | StringID | No |
| Name | String | No |
| BaselineStartDate | Date | Yes |
| BaselineEndDate | Date | Yes |
| ForecastStartDate | Date | Yes |
| ForecastEndDate | Date | Yes |
| ActualStartDate | Date | Yes |
| ActualEndDate | Date | Yes |
| ManagerName | String | Yes |
| WBSElementID | StringID | No |
| OBSElementID | StringID | No |
| Primary Key | ID |
| Foreign Keys | WBSElementID: WBSElement(ID)OBSElementID: OBSElement(ID) |
| Use Constraints | WBSElementID and OBSElementID must each refer to an element with no child elements (i.e. a terminal or leaf node in the respective hierarchical structure).If omitted, the IsSummaryLevelPlanningPackage field has a default value of False. |

### ControlAccountCustomFieldDefinitions

|  |  |
| --- | --- |
| Table | ControlAccountCustomFieldDefinitions |
| Entity | ControlAccountCustomFieldDefinition |
| Fields | Name | Data Type | Nullable |
| CustomFieldID | StringID | No |
| Name | String | No |
| Comments | Text | Yes |
| Primary Key | CustomFieldID |
| Foreign Keys | CustomFieldID: CustomFieldEnum(ID) |
| Use Constraints |  |

### ControlAccountCustomFieldValues

|  |  |
| --- | --- |
| Table | ControlAccountCustomFieldValues |
| Entity | ControlAccountCustomFieldValue |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | No |
| CustomFieldID | StringID | No |
| Value | String | No |
| Primary Key | ControlAccountID, CustomFieldID |
| Foreign Keys | ControlAccountID: ControlAccount(ID)CustomFieldID: ControlAccountCustomFieldDefinition(CustomFieldID) |
| Use Constraints |  |

### WorkPackages

|  |  |
| --- | --- |
| Table | WorkPackages |
| Entity | WorkPackage |
| Fields | Name | Data Type | Nullable |
| IsPlanningPackage | Boolean | Yes |
| ID | StringID | No |
| Name | String | No |
| BaselineStartDate | Date | Yes |
| BaselineEndDate | Date | Yes |
| ForecastStartDate | Date | Yes |
| ForecastEndDate | Date | Yes |
| ActualStartDate | Date | Yes |
| ActualEndDate | Date | Yes |
| EarnedValueTechniqueID | StringID | Yes |
| OtherEarnedValueTechnique | String | Conditional |
| ControlAccountID | StringID | No |
| Primary Key | ID |
| Foreign Keys | EarnedValueTechniqueID: EarnedValueTechniqueEnum(ID)ControlAccountID: ControlAccount(ID) |
| Use Constraints | If omitted, the IsPlanningPackage field has a default value of False.OtherEarnedValueTechnique must be null unless EarnedValueTechniqueID has a value of OTHER\_DISCRETE or FIXED\_X\_Y. |

### WorkPackageCustomFieldDefinitions

|  |  |
| --- | --- |
| Table | WorkPackageCustomFieldDefinitions |
| Entity | WorkPackageCustomFieldDefinition |
| Fields | Name | Data Type | Nullable |
| CustomFieldID | StringID | No |
| Name | String | No |
| Comments | Text | Yes |
| Primary Key | CustomFieldID |
| Foreign Keys | CustomFieldID: CustomFieldEnum(ID) |
| Use Constraints |  |

### WorkPackageCustomFieldValues

|  |  |
| --- | --- |
| Table | WorkPackageCustomFieldValues |
| Entity | WorkPackageCustomFieldValue |
| Fields | Name | Data Type | Nullable |
| WorkPackageID | StringID | No |
| CustomFieldID | StringID | No |
| Value | String | No |
| Primary Key | WorkPackageID, CustomFieldID |
| Foreign Keys | WorkPackageID: WorkPackage(ID)CustomFieldID: WorkPackageCustomFieldDefinition(CustomFieldID) |
| Use Constraints |  |

### ReportingCalendar

|  |  |
| --- | --- |
| Table | ReportingCalendar |
| Entity | ReportingPeriod |
| Fields | Name | Data Type | Nullable |
| ID | Integer | No |
| StartDate | Date | No |
| EndDate | Date | No |
| WorkingHours | Integer | No |
| Primary Key | ID |
| Foreign Keys | [N/A] |
| Use Constraints | Order of records is significant. Records must have contiguous, sequential ID values starting at 1 (i.e. 1, 2, 3, etc.). StartDate must be 1 day later than EndDate of the previous record, if any, and on or before EndDate of the current record. WorkHours must be greater than or equal to 0. |

### BCWS\_ToDate

|  |  |
| --- | --- |
| Table | BCWS\_ToDate |
| Entity | BCWS\_ToDate |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | Conditional |
| WorkPackageID | StringID | Conditional |
| ReportingPeriodID | Integer | Conditional |
| Value\_Dollars | Decimal | No |
| Value\_Dollars\_Direct | Decimal | Conditional |
| Value\_Dollars\_LAB | Decimal | Conditional |
| Value\_Dollars\_LAB\_Direct | Decimal | Conditional |
| Value\_Dollars\_MAT | Decimal | Conditional |
| Value\_Dollars\_MAT\_Direct | Decimal | Conditional |
| Value\_Dollars\_ODC | Decimal | Conditional |
| Value\_Dollars\_ODC\_Direct | Decimal | Conditional |
| Value\_Dollars\_SUB | Decimal | Conditional |
| Value\_Dollars\_SUB\_Direct | Decimal | Conditional |
| Value\_Dollars\_OH | Decimal | Conditional |
| Value\_Dollars\_COM | Decimal | Conditional |
| Value\_Dollars\_GA | Decimal | Conditional |
| Value\_Hours | Decimal | No |
| Primary Key | ControlAccountID, WorkPackageID, ReportingPeriodID |
| Foreign Keys | ControlAccountID: ControlAccount(ID)WorkPackageID: WorkPackage(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | Constraints for this table depend on DatasetConfiguration as follows:If ToDate\_TimePhased has a value of true, ReportingPeriodID must not be null; otherwise, ReportingPeriodID must be null.If BCWS\_ToDate\_ByWorkPackage has a value of true, WorkPackageID must not be null and ControlAccountID must be null; otherwise, ControlAccountID must not be null and WorkPackageID must be null.If Detail\_HasDirectValues has a value of true, Value\_Dollars\_Direct must not be null; otherwise, the Value\_Dollars\_Direct must be null.If BCWS\_ToDate\_HasElementOfCostValues has a value of true, each of Value\_Dollars\_LAB, Value\_Dollars\_MAT, Value\_Dollars\_ODC, Value\_Dollars\_SUB must not be null; otherwise, each must be null.If BCWS\_ToDate\_HasElementOfCostValues and Detail\_HasDirectValues each have a value of true, each of Value\_Dollars\_LAB\_Direct, Value\_Dollars\_MAT\_Direct, Value\_Dollars\_ODC\_Direct, Value\_Dollars\_SUB\_Direct must not be null; otherwise, each must be null.If Detail\_HasIndirectValues has a value of true, each of Value\_Dollars\_OH, Value\_Dollars\_COM, Value\_Dollars\_GA must not be null; otherwise, each must be null.If not null, ReportingPeriodID must have a value that is less than or equal to the value of ReportingPeriodID in DatasetMetadata. |

### BCWP\_ToDate

|  |  |
| --- | --- |
| Table | BCWP\_ToDate |
| Entity | BCWP\_ToDate |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | Conditional |
| WorkPackageID | StringID | Conditional |
| ReportingPeriodID | Integer | Conditional |
| Value\_Dollars | Decimal | No |
| Value\_Dollars\_Direct | Decimal | Conditional |
| Value\_Dollars\_LAB | Decimal | Conditional |
| Value\_Dollars\_LAB\_Direct | Decimal | Conditional |
| Value\_Dollars\_MAT | Decimal | Conditional |
| Value\_Dollars\_MAT\_Direct | Decimal | Conditional |
| Value\_Dollars\_ODC | Decimal | Conditional |
| Value\_Dollars\_ODC\_Direct | Decimal | Conditional |
| Value\_Dollars\_SUB | Decimal | Conditional |
| Value\_Dollars\_SUB\_Direct | Decimal | Conditional |
| Value\_Dollars\_OH | Decimal | Conditional |
| Value\_Dollars\_COM | Decimal | Conditional |
| Value\_Dollars\_GA | Decimal | Conditional |
| Value\_Hours | Decimal | No |
| Primary Key | ControlAccountID, WorkPackageID, ReportingPeriodID |
| Foreign Keys | ControlAccountID: ControlAccount(ID)WorkPackageID: WorkPackage(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | Constraints for this table depend on DatasetConfiguration as follows:If ToDate\_TimePhased has a value of true, ReportingPeriodID must not be null; otherwise, ReportingPeriodID must be null.If BCWP\_ToDate\_ByWorkPackage has a value of true, WorkPackageID must not be null and ControlAccountID must be null; otherwise, ControlAccountID must not be null and WorkPackageID must be null.If Detail\_HasDirectValues has a value of true, Value\_Dollars\_Direct must not be null; otherwise, the Value\_Dollars\_Direct must be null.If BCWP\_ToDate\_HasElementOfCostValues has a value of true, each of Value\_Dollars\_LAB, Value\_Dollars\_MAT, Value\_Dollars\_ODC, Value\_Dollars\_SUB must not be null; otherwise, each must be null.If BCWP\_ToDate\_HasElementOfCostValues and Detail\_HasDirectValues each have a value of true, each of Value\_Dollars\_LAB\_Direct, Value\_Dollars\_MAT\_Direct, Value\_Dollars\_ODC\_Direct, Value\_Dollars\_SUB\_Direct must not be null; otherwise, each must be null.If Detail\_HasIndirectValues has a value of true, each of Value\_Dollars\_OH, Value\_Dollars\_COM, Value\_Dollars\_GA must not be null; otherwise, each must be null.If not null, ReportingPeriodID must have a value that is less than or equal to the value of ReportingPeriodID in DatasetMetadata. |

### ACWP\_ToDate

|  |  |
| --- | --- |
| Table | ACWP\_ToDate |
| Entity | ACWP\_ToDate |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | Conditional |
| WorkPackageID | StringID | Conditional |
| ReportingPeriodID | Integer | Conditional |
| Value\_Dollars | Decimal | No |
| Value\_Dollars\_Direct | Decimal | Conditional |
| Value\_Dollars\_LAB | Decimal | Conditional |
| Value\_Dollars\_LAB\_Direct | Decimal | Conditional |
| Value\_Dollars\_MAT | Decimal | Conditional |
| Value\_Dollars\_MAT\_Direct | Decimal | Conditional |
| Value\_Dollars\_ODC | Decimal | Conditional |
| Value\_Dollars\_ODC\_Direct | Decimal | Conditional |
| Value\_Dollars\_SUB | Decimal | Conditional |
| Value\_Dollars\_SUB\_Direct | Decimal | Conditional |
| Value\_Dollars\_OH | Decimal | Conditional |
| Value\_Dollars\_COM | Decimal | Conditional |
| Value\_Dollars\_GA | Decimal | Conditional |
| Value\_Hours | Decimal | No |
| Primary Key | ControlAccountID, WorkPackageID, ReportingPeriodID |
| Foreign Keys | ControlAccountID: ControlAccount(ID)WorkPackageID: WorkPackage(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | Constraints for this table depend on DatasetConfiguration as follows:If ToDate\_TimePhased has a value of true, ReportingPeriodID must not be null; otherwise, ReportingPeriodID must be null.If ACWP\_ToDate\_ByWorkPackage has a value of true, WorkPackageID must not be null and ControlAccountID must be null; otherwise, ControlAccountID must not be null and WorkPackageID must be null. If Detail\_HasDirectValues has a value of true, Value\_Dollars\_Direct must not be null; otherwise, the Value\_Dollars\_Direct must be null.If ACWP\_ToDate\_HasElementOfCostValues has a value of true, each of Value\_Dollars\_LAB, Value\_Dollars\_MAT, Value\_Dollars\_ODC, Value\_Dollars\_SUB must not be null; otherwise, each must be null.If ACWP\_ToDate\_HasElementOfCostValues and Detail\_HasDirectValues each have a value of true, each of Value\_Dollars\_LAB\_Direct, Value\_Dollars\_MAT\_Direct, Value\_Dollars\_ODC\_Direct, Value\_Dollars\_SUB\_Direct must not be null; otherwise, each must be null.If Detail\_HasIndirectValues has a value of true, each of Value\_Dollars\_OH, Value\_Dollars\_COM, Value\_Dollars\_GA must not be null; otherwise, each must be null.If not null, ReportingPeriodID must have a value that is less than or equal to the value of ReportingPeriodID in DatasetMetadata. |

### BCWS\_ToComplete

|  |  |
| --- | --- |
| Table | BCWS\_ToComplete |
| Entity | BCWS\_ToComplete |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | Conditional |
| WorkPackageID | StringID | Conditional |
| ReportingPeriodID | Integer | No |
| Value\_Dollars | Decimal | No |
| Value\_Dollars\_Direct | Decimal | Conditional |
| Value\_Dollars\_LAB | Decimal | Conditional |
| Value\_Dollars\_LAB\_Direct | Decimal | Conditional |
| Value\_Dollars\_MAT | Decimal | Conditional |
| Value\_Dollars\_MAT\_Direct | Decimal | Conditional |
| Value\_Dollars\_ODC | Decimal | Conditional |
| Value\_Dollars\_ODC\_Direct | Decimal | Conditional |
| Value\_Dollars\_SUB | Decimal | Conditional |
| Value\_Dollars\_SUB\_Direct | Decimal | Conditional |
| Value\_Dollars\_OH | Decimal | Conditional |
| Value\_Dollars\_COM | Decimal | Conditional |
| Value\_Dollars\_GA | Decimal | Conditional |
| Value\_Hours | Decimal | No |
| Primary Key | ControlAccountID, WorkPackageID, ReportingPeriodID |
| Foreign Keys | ControlAccountID: ControlAccount(ID)WorkPackageID: WorkPackage(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | Constraints for this table depend on DatasetConfiguration as follows:If BCWS\_ToComplete\_ByWorkPackage has a value of true, WorkPackageID must not be null and ControlAccountID must be null; otherwise, ControlAccountID must not be null and WorkPackageID must be null.If Detail\_HasDirectValues has a value of true, Value\_Dollars\_Direct must not be null; otherwise, the Value\_Dollars\_Direct must be null.If BCWS\_ToComplete\_HasElementOfCostValues has a value of true, each of Value\_Dollars\_LAB, Value\_Dollars\_MAT, Value\_Dollars\_ODC, Value\_Dollars\_SUB must not be null; otherwise, each must be null.If BCWS\_ToComplete\_HasElementOfCostValues and Detail\_HasDirectValues each have a value of true, each of Value\_Dollars\_LAB\_Direct, Value\_Dollars\_MAT\_Direct, Value\_Dollars\_ODC\_Direct, Value\_Dollars\_SUB\_Direct must not be null; otherwise, each must be null.If Detail\_HasIndirectValues has a value of true, each of Value\_Dollars\_OH, Value\_Dollars\_COM, Value\_Dollars\_GA must not be null; otherwise, each must be null.ReportingPeriodID must have a value that is greater than the value of ReportingPeriodID in DatasetMetadata. |

### EST\_ToComplete

|  |  |
| --- | --- |
| Table | EST\_ToComplete |
| Entity | EST\_ToComplete |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | Conditional |
| WorkPackageID | StringID | Conditional |
| ReportingPeriodID | Integer | No |
| Value\_Dollars | Decimal | No |
| Value\_Dollars\_Direct | Decimal | Conditional |
| Value\_Dollars\_LAB | Decimal | Conditional |
| Value\_Dollars\_LAB\_Direct | Decimal | Conditional |
| Value\_Dollars\_MAT | Decimal | Conditional |
| Value\_Dollars\_MAT\_Direct | Decimal | Conditional |
| Value\_Dollars\_ODC | Decimal | Conditional |
| Value\_Dollars\_ODC\_Direct | Decimal | Conditional |
| Value\_Dollars\_SUB | Decimal | Conditional |
| Value\_Dollars\_SUB\_Direct | Decimal | Conditional |
| Value\_Dollars\_OH | Decimal | Conditional |
| Value\_Dollars\_COM | Decimal | Conditional |
| Value\_Dollars\_GA | Decimal | Conditional |
| Value\_Hours | Decimal | No |
| Primary Key | ControlAccountID, WorkPackageID, ReportingPeriodID |
| Foreign Keys | ControlAccountID: ControlAccount(ID)WorkPackageID: WorkPackage(ID)ReportingPeriodID: ReportingPeriod(ID) |
| Use Constraints | Constraints for this table depend on DatasetConfiguration as follows:If EST\_ToComplete\_ByWorkPackage has a value of true, WorkPackageID must not be null and ControlAccountID must be null; otherwise, ControlAccountID must not be null and WorkPackageID must be null.If Detail\_HasDirectValues has a value of true, Value\_Dollars\_Direct must not be null; otherwise, the Value\_Dollars\_Direct must be null.If EST\_ToComplete\_HasElementOfCostValues has a value of true, each of Value\_Dollars\_LAB, Value\_Dollars\_MAT, Value\_Dollars\_ODC, Value\_Dollars\_SUB must not be null; otherwise, each must be null.If EST\_ToComplete\_HasElementOfCostValues and Detail\_HasDirectValues each have a value of true, each of Value\_Dollars\_LAB\_Direct, Value\_Dollars\_MAT\_Direct, Value\_Dollars\_ODC\_Direct, Value\_Dollars\_SUB\_Direct must not be null; otherwise, each must be null.If Detail\_HasIndirectValues has a value of true, each of Value\_Dollars\_OH, Value\_Dollars\_COM, Value\_Dollars\_GA must not be null; otherwise, each must be null.ReportingPeriodID must have a value that is greater than the value of ReportingPeriodID in DatasetMetadata. |

### ReprogrammingAdjustments

|  |  |
| --- | --- |
| Table | ReprogrammingAdjustments |
| Entity | ReprogrammingAdjustmentRecord |
| Fields | Name | Data Type | Nullable |
| ControlAccountID | StringID | No |
| ReprogSVA\_Dollars | Decimal | Yes |
| ReprogCVA\_Dollars | Decimal | Yes |
| ReprogBA\_Dollars | Decimal | Yes |
| ReprogSVA\_Hours | Decimal | Yes |
| ReprogCVA\_Hours | Decimal | Yes |
| ReprogBA\_Hours | Decimal | Yes |
| Primary Key | ControlAccountID |
| Foreign Keys | ControlAccountID: ControlAccount(ID) |
| Use Constraints |  |

## Primitive Data Types

|  |
| --- |
| Primitive Data Types |
| Boolean | Values of two-valued logic (i.e. “true” and “false”). |
| Date | Year, month, and day, without reference to the time of day or a specific time zone. |
| Decimal | Number that can be represented with decimal digits, with possible integral and/or fractional component. |
| Integer | Number that can be represented with decimal digits, with no fractional component. |
| String | A sequence of Unicode characters, with normalized whitespace. |
| StringID | A sequence of Unicode characters, with normalized whitespace and limited character set. |
| Text | A sequence of Unicode characters intended for remarks or other expository text. |

## Enumerations

### ContractorIDCodeTypeEnum

|  |  |
| --- | --- |
| Enumeration | ContractorIDCodeTypeEnum |
| Values | ID | Name |
| DUNS | DUNS |
| DUNS\_PLUS\_4 | DUNS+4 |
| CAGE | CAGE |
| Use Constraints |  |

### SummaryElementEnum

|  |  |
| --- | --- |
| Enumeration | SummaryElementEnum |
| Values | ID | Name |
| OH | Overhead |
| COM | Cost of Money |
| GA | General & Administrative |
| UB | Undistributed Budget |
| PMB | Performance Measurement Baseline |
| MR | Management Reserve |
| Use Constraints |  |

### SummaryIndirectElementEnum

|  |  |
| --- | --- |
| Enumeration | SummaryIndirectElementEnum |
| Values | ID | Name |
| OH | Overhead |
| COM | Cost of Money |
| GA | General & Administrative |
| Use Constraints |  |

### EarnedValueTechniqueEnum

|  |  |
| --- | --- |
| Enumeration | EarnedValueTechniqueEnum |
| Values | ID | Name |
| APPORTIONED\_EFFORT | Apportioned Effort |
| LEVEL\_OF\_EFFORT | Level of Effort |
| MILESTONE | Milestone |
| FIXED\_0\_100 | 0/100 |
| FIXED\_100\_0 | 100/0 |
| FIXED\_X\_Y | X/Y |
| PERCENT\_COMPLETE | Percent Complete |
| STANDARDS | Standards |
| UNITS | Units |
| OTHER\_DISCRETE | Other Discrete |
| Use Constraints |  |

### CustomFieldEnum

|  |  |
| --- | --- |
| Enumeration | CustomFieldEnum |
| Values | ID | Name |
| FIELD\_01 | Field 01 |
| FIELD\_02 | Field 02 |
| FIELD\_03 | Field 03 |
| FIELD\_04 | Field 04 |
| FIELD\_05 | Field 05 |
| FIELD\_06 | Field 06 |
| FIELD\_07 | Field 07 |
| FIELD\_08 | Field 08 |
| FIELD\_09 | Field 09 |
| FIELD\_10 | Field 10 |
| Use Constraints |  |

# File Format

The file format for an IPMDAR Contract Performance Dataset is a ZIP file containing multiple text file entries. One text file entry conveys type and version information. All other text file entries convey data represented in JSON. Each JSON file entry corresponds to a single data table.

## File Conventions

Text file entries must be encoded in UTF-8. Compressed file entries must be compressed using the DEFLATE compression method. File entries must not be encrypted.

The file entry for a table may be omitted if the table has no records. The file entry for a singleton may be omitted if all its fields are null. The file entry for type/version information must always be included.

## File Contents

|  |
| --- |
| ZIP File Entries |
|  | Name | Table |
| FileType.txt | [N/A] |
| DatasetConfiguration.json | DatasetConfiguration |
| DatasetMetadata.json | DatasetMetadata |
| SourceSoftwareMetadata.json | SourceSoftwareMetadata |
| ContractData.json | ContractData |
| SummaryPerformance.json | SummaryPerformance |
| CustomSummaryPerformance.json | CustomSummaryPerformance |
| SummaryIndirectPerformance\_ToDate.json | SummaryIndirectPerformance\_ToDate |
| SummaryIndirectPerformance\_ToComplete.json | SummaryIndirectPerformance\_ToComplete |
| Subcontractors.json | Subcontractors |
| WBS.json | WBS |
| OBS.json | OBS |
| ControlAccounts.json | ControlAccounts |
| ControlAccountCustomFieldDefinitions.json | ControlAccountCustomFieldDefinitions |
| ControlAccountCustomFieldValues.json | ControlAccountCustomFieldValues |
| WorkPackages.json | WorkPackages |
| WorkPackageCustomFieldDefinitions.json | WorkPackageCustomFieldDefinitions |
| WorkPackageCustomFieldValues.json | WorkPackageCustomFieldValues |
| ReportingCalendar.json | ReportingCalendar |
| BCWS\_ToDate.json | BCWS\_ToDate |
| BCWP\_ToDate.json | BCWP\_ToDate |
| ACWP\_ToDate.json | ACWP\_ToDate |
| BCWS\_ToComplete.json | BCWS\_ToComplete |
| EST\_ToComplete.json | EST\_ToComplete |
| ReprogrammingAdjustments.json | ReprogrammingAdjustments |

## File Type/Version

The ‘FileType.txt’ file entry specifies the type and version of the IPMDAR Contract Performance Dataset file. This file entry must contain the following exact text string (excluding quotation marks): “IPMDAR\_CONTRACT\_PERFORMANCE\_DATASET/1.0”.

# Representation in JSON

## JSON Conventions

Each table is represented in JSON as an array of objects. Singletons are an exception. They are represented directly as a single object. Objects correspond to records, and the sequence of objects in JSON represents the implicit sequence of records in the table.

Each record is represented in JSON as an object with name/value pairs corresponding to field values. The name of each pair must exactly match the name of the corresponding field, and the value of each pair must follow the conventions below for representing the corresponding primitive data type in JSON. Names must be unique within the scope of each object and each name must correspond to a field defined for the table.

Objects must include name/value pairs for fields that are not null, and these pairs must not have a JSON value of null or an empty JSON string value. Conversely, objects may or may not include name/value pairs for fields that are null. If included, these pairs must have a JSON value of null or an empty JSON string value. Only pairs for fields with a primitive data type of String, StringID, or Text may have an empty JSON string value.

Primitive data types are represented as follows:

|  |
| --- |
| Representation of Primitive Data Types |
| Boolean | JSON value of true or false. |
| Date | JSON string encoding a valid date, without time component or time zone, formatted as follows: “yyyy-mm-dd” (e.g. “2016-01-31”). |
| Decimal | JSON number. |
| Integer | JSON number with fractional component equal to zero. |
| String | JSON string, with normalized whitespace. |
| StringID | JSON string, with normalized whitespace and limited character set. |
| Text | JSON string. |

## JSON Schema Sample

|  |  |
| --- | --- |
| Schema | WBS.json |
| { "$schema": "http://json-schema.org/draft-04/schema#", "type": "array", "items": { "type": "object", "properties": { "Level": {"type": "number"}, "ID": {"type": "string"}, "Name": {"type": "string"}, "ParentID": {"type": ["string", "null"]} }, "required": ["Level", "ID", "Name"] }} |

## JSON Data Sample

|  |  |
| --- | --- |
| Data | WBS.json |
| [ { "Level": 1, "ID": "1.0", "Name": "Total" }, { "Level": 2, "ID": "1.1", "Name": "Subsystem 1.1", "ParentID": "1.0" }, { "Level": 2, "ID": "1.2", "Name": "Subsystem 1.2", "ParentID": "1.0" }] |

# References

JSON - The JSON Data Interchange Format, ECMA-404. 2013.

JSON Schema - json-schema.org

Unicode - The Unicode Standard, Version 9.0. 2016.

UTF-8 - “UTF-8 encoding scheme,” The Unicode Standard, Version 9.0, §3.10 D95. 2016.

ZIP File Format - .ZIP File Format Specification, Version 6.3.4. 2014.