IPMDAR Schedule Dataset

Version 1.0

Data Exchange Instructions

Draft – December 2, 2019

# Overview

The purpose of this document is to provide specific direction for using the File Format Specification for the IPMDAR Schedule Dataset to exchange integrated master schedule (IMS) data.

The IPMDAR Schedule Dataset follows a relational data model intended to capture the structure and status of an integrated master schedule at a fixed point in time at a sufficient level of detail to enable reliable static analysis.

All amounts are represented in unscaled units. Implicit factors such as thousands or millions are not used.

# Data

## Tables

### DatasetMetadata

|  |  |  |
| --- | --- | --- |
| Table | DatasetMetadata | |
| Entity | DatasetMetadata | |
| Purpose | Provides metadata for the dataset. | |
| Fields | Name | Use Notes |
| SecurityMarking | Provide a security marking which includes the security classification. If the data are unclassified, use the marking “UNCLASSIFIED” or a marking that begins with “UNCLASSIFIED//”. Refer to DoD Manual 5200.01 for guidance on information security markings. |
| DistributionStatement | If applicable, provide a distribution statement to identify restrictions on the document’s availability for distribution, release, and disclosure. |
| ReportingPeriodEndDate | Provide the end date of the current reporting period for the dataset. |
| ContractorName | Provide the name of the reporting contractor. |
| ContractorIDCodeTypeID | Indicate the type of ID code used to identify the reporting contractor. |
| ContractorIDCode | Provide the ID code used to identify the reporting contractor. |
| ContractorAddress\_Street | Provide the street address of the reporting contractor. |
| ContractorAddress\_City | Provide the city in which the reporting contractor is located. |
| ContractorAddress\_State | Provide the state (or country subdivision) in which the reporting contractor is located. |
| ContractorAddress\_Country | Provide the country in which the reporting contractor is located. |
| ContractorAddress\_ZipCode | Provide the ZIP code (or postal code) in which the reporting contractor is located. |
| PointOfContactName | Provide the point of contact name. |
| PointOfContactTitle | Provide the point of contact title. |
| PointOfContactTelephone | Provide the point of contact telephone number. |
| PointOfContactEmail | Provide the point of contact email address. |
| ContractName | Provide the contract name. |
| ContractNumber | Provide the contract number. |
| ContractType | Provide the contract type (e.g. CPIF, CPAF, etc.). |
| ContractTaskOrEffortName | Provide the name of the contract task/effort. |
| ProgramName | Provide the program name. |
| ProgramPhase | Provide the program phase (e.g. development, production, sustainment, LRIP, etc.). |
| EVMSAccepted | Indicate whether or not the contractor’s EVMS has been accepted by the government. |
| EVMSAcceptanceDate | Provide the date of EVMS acceptance, if applicable. |
| Use Notes |  | |

### SourceSoftwareMetadata

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| --- | --- | --- |
| Table | SourceSoftwareMetadata | |
| Entity | SourceSoftwareMetadata | |
| Purpose | Provides metadata about the software that is the source of the dataset. | |
| Fields | Name | Use Notes |
| Data\_SoftwareName | Provide the name of the software used to manage the source data, if applicable. |
| Data\_SoftwareVersion | Provide the version of the software used to manage the source data, if applicable. |
| Data\_SoftwareCompanyName | Provide the name of the company that produces the software used to manage the source data, if applicable. |
| Data\_SoftwareComments | Provide any comments about the software used to manage the source data, if applicable. |
| Export\_SoftwareName | Provide the name of the software used to export the dataset, if applicable. |
| Export\_SoftwareVersion | Provide the version of the software used to export the dataset, if applicable. |
| Export\_SoftwareCompanyName | Provide the name of the company that produces the software used to export the dataset, if applicable. |
| Export\_SoftwareComments | Provide any comments about the software used to export the dataset, if applicable. |
| Use Notes |  | |

### ProjectScheduleData

|  |  |  |
| --- | --- | --- |
| Table | ProjectScheduleData | |
| Entity | ProjectScheduleData | |
| Purpose | Provides schedule data at the project level. | |
| Fields | Name | Use Notes |
| StatusDate | Provide the status date for the schedule. This is the date as of which the schedule status was last updated, also known as the “data date”, “time-now”, or “progress line”. |
| CurrentStartDate | Provide the current start date for the project. If the project has not started yet, this is the forecast start date. If the project has started, this is the actual start date. |
| CurrentFinishDate | Provide the current finish date for the project. If the project has not finished yet, this is the forecast finish date. If the project has finished, this is the actual finish date. |
| BaselineStartDate | Provide the baseline start date for the project, if applicable. |
| BaselineFinishDate | Provide the baseline finish date for the project, if applicable. |
| ActualStartDate | Provide the actual start date for the project, if applicable. |
| ActualFinishDate | Provide the actual finish date for the project, if applicable. |
| DurationUnitsID | Provide the units in which durations are planned and reported (e.g. days or hours). |
| Use Notes |  | |

### ProjectCustomFieldDefinitions

|  |  |  |
| --- | --- | --- |
| Table | ProjectCustomFieldDefinitions | |
| Entity | ProjectCustomFieldDefinition | |
| Purpose | Provides definitions for custom fields at the project level. | |
| Fields | Name | Use Notes |
| CustomFieldID | Provide the ID of the custom field according to the CustomFieldEnum. |
| Name | Provide a name for the custom field. |
| Comments | Provide any comments about the custom field. |
| Use Notes |  | |

### ProjectCustomFieldValues

|  |  |  |
| --- | --- | --- |
| Table | ProjectCustomFieldValues | |
| Entity | ProjectCustomFieldValue | |
| Purpose | Provides values for custom fields at the project level. | |
| Fields | Name | Use Notes |
| CustomFieldID | Provide the ID of the custom field according to the CustomFieldEnum. |
| Value | Provide the value of the custom field for the project. |
| Use Notes |  | |

### Calendars

|  |  |  |
| --- | --- | --- |
| Table | Calendars | |
| Entity | Calendar | |
| Purpose | Provides definitions for the calendars used in the schedule. | |
| Fields | Name | Use Notes |
| ID | Provide a unique ID for the calendar. |
| Name | Provide a name for the calendar. |
| Comments | Provide any comments about the calendar. |
| Use Notes |  | |

### CalendarWorkshifts

|  |  |  |
| --- | --- | --- |
| Table | CalendarWorkshifts | |
| Entity | CalendarWorkshift | |
| Purpose | Provides definitions for the workshifts associated with each calendar. | |
| Fields | Name | Use Notes |
| CalendarID | Provide the ID of the associated calendar. |
| Ordinal | Provide an ordinal (e.g. 1, 2, 3, etc.) to distinguish the workshift if more than one workshift is associated with the calendar; otherwise, this field may be left null or reported as zero. |
| SundayWorkHours | Provide for the number of work hours for Sunday. If Sunday is not a work day, this field may be left null or reported as zero. |
| MondayWorkHours | Provide for the number of work hours for Monday. If Monday is not a work day, this field may be left null or reported as zero. |
| TuesdayWorkHours | Provide for the number of work hours for Tuesday. If Tuesday is not a work day, this field may be left null or reported as zero. |
| WednesdayWorkHours | Provide for the number of work hours for Wednesday. If Wednesday is not a work day, this field may be left null or reported as zero. |
| ThursdayWorkHours | Provide for the number of work hours for Thursday. If Thursday is not a work day, this field may be left null or reported as zero. |
| FridayWorkHours | Provide for the number of work hours for Friday. If Friday is not a work day, this field may be left null or reported as zero. |
| SaturdayWorkHours | Provide for the number of work hours for Saturday. If Saturday is not a work day, this field may be left null or reported as zero. |
| Use Notes |  | |

### CalendarExceptions

|  |  |  |
| --- | --- | --- |
| Table | CalendarExceptions | |
| Entity | CalendarException | |
| Purpose | Provides a list of exceptions for each calendar (including holidays and partial or extended work days). | |
| Fields | Name | Use Notes |
| CalendarID | Provide the ID of the calendar to which the exception applies. |
| ExceptionDate | Provide the date of the calendar exception. |
| WorkHours | Provide the number of work hours for the date in question. If the date is a holiday, this field may be left null or reported as zero. |
| Use Notes |  | |

### Tasks

|  |  |  |
| --- | --- | --- |
| Table | Tasks | |
| Entity | Task | |
| Purpose | Provides definitions for the tasks composing the schedule (including activities, milestones, etc.). | |
| Fields | Name | Use Notes |
| ID | Provide a unique ID for the task. This ID must remain the same across each dataset submission. |
| Name | Provide a name for the task. |
| TaskTypeID | Indicate the task type according to the TaskTypeEnum. |
| TaskSubtypeID | Indicate the task sub-type according to the TaskSubtypeEnum, if applicable. |
| TaskPlanningLevelID | Indicate the task planning level according to the TaskPlanningLevelEnum, if applicable. |
| WBSElementID | Provide the ID of the lowest-level WBS element with which the task is associated, if applicable. |
| OBSElementID | Provide the ID of the lowest-level OBS element with which the task is associated, if applicable. |
| ControlAccountID | Provide the ID of the control account or summary level planning package with which the task is associated, if applicable. |
| WorkPackageID | Provide the ID of the work package or planning package with which the task is associated, if applicable. |
| IMPElementID | Provide the ID of the lowest-level IMP element with which the task is associated, if applicable. |
| SOWReference | Provide a reference to the section(s) of the SOW with which the task is associated, if applicable. |
| SubcontractorReference | Provide a reference to the subcontractor with which the task is associated, if applicable. |
| EarnedValueTechniqueID | Indicate the technique used to calculate earned value for the task according to the EarnedValueTechniqueEnum, if applicable. Do not use this field if an activity represents a planning package or a summary-level planning package, unless the field is used to identify level of effort or apportioned effort. |
| OtherEarnedValueTechnique | If the technique indicated by EarnedValueTechniqueID is OTHER\_DISCRETE or FIXED\_X\_Y, provide a name or short description for the technique in this field. |
| SourceSubprojectReference | Provide a reference to the source subproject in the scheduling software, if applicable. This field is only intended to be used if the source of the dataset is a schedule that incorporates one or more subprojects. In practice, the subproject reference may be an ID, name, file name, file path, etc., depending on the source software. |
| SourceTaskReference | Provide a reference to the source task in the scheduling software, if applicable. This field may be used if, for whatever reason, the ID of the task in the dataset does not provide a convenient means of locating the same task in the source data. The source task reference may be automatically generated or user defined, globally unique or context dependent, and constant in time or variable with time, depending on the source software. |
| Comments | Provide any comments about the task. |
| Use Notes |  | |

### TaskScheduleData

|  |  |  |
| --- | --- | --- |
| Table | TaskScheduleData | |
| Entity | TaskScheduleDataRecord | |
| Purpose | Provides schedule data for each task. | |
| Fields | Name | Use Notes |
| TaskID | Provide the ID of the associated task. |
| CalendarID | Provide the ID of the calendar used to schedule dates and measure durations for the task. |
| CurrentDuration | Provide the current total duration for the task. This is the total span of working time between task start and task finish. |
| CurrentStartDate | Provide the current start date for the task. If the task has not started yet, this is the forecast start date. If the task has started, this is the actual start date. The current start date typically matches the early start date, but may not depending on the configuration of the source software and the interpretation of task constraints by its scheduling algorithm. The current start date must be comparable to the baseline start date. |
| CurrentFinishDate | Provide the current finish date for the task. If the task has not finished yet, this is the forecast finish date. If the task has finished, this is the actual finish date. The current finish date typically matches the early finish date, but may not depending on the configuration of the source software and the interpretation of task constraints by its scheduling algorithm. The current finish date must be comparable to the baseline finish date. |
| EarlyStartDate | Provide the early start date for the task. This is the earliest possible date the task, or the remaining work for the task, can start. The exact definition depends on the configuration of the source software and the interpretation of task constraints by its scheduling algorithm. |
| EarlyFinishDate | Provide the early finish date for the task. This is the earliest possible date the task can finish. The exact definition depends on the configuration of the source software and the interpretation of task constraints by its scheduling algorithm. |
| LateStartDate | Provide the late start date for the task. This is the latest possible date the task, or the remaining work for the task, can start without delaying the finish of the project. The exact definition depends on the configuration of the source software and the interpretation of task constraints by its scheduling algorithm. |
| LateFinishDate | Provide the late finish date for the task. This is the latest possible date the task can finish without delaying the finish of the project. The exact definition depends on the configuration of the source software and the interpretation of task constraints by its scheduling algorithm. |
| FreeFloatDuration | Provide the duration of the free float for the task. |
| TotalFloatDuration | Provide the duration of the total float for the task. |
| OnCriticalPath | Indicate whether or not the task is on the critical path. |
| OnDrivingPath | Indicate whether or not the task is on the current driving path, if applicable. |
| BaselineDuration | Provide the baseline total duration for the task, if applicable. |
| BaselineStartDate | Provide the baseline start date for the task, if applicable. |
| BaselineFinishDate | Provide the baseline finish date for the task, if applicable. |
| StartVarianceDuration | Provide the duration of the start variance for the task, if applicable. Start variance represents the difference between the current start date and the baseline start date, with a positive value if the current start date is later than the baseline start date, and a negative value if it is earlier. |
| FinishVarianceDuration | Provide the duration of the finish variance for the task, if applicable. Finish variance represents the difference between the current finish date and the baseline finish date, with a positive value if the current finish date is later than the baseline finish date, and a negative value if it is earlier. |
| CalculatedPercentComplete | Provide the calculated percent complete for the task as a fractional decimal (e.g. report 5% as 0.05). |
| PhysicalPercentComplete | Provide the physical percent complete for the task as a fractional decimal (e.g. report 5% as 0.05). |
| RemainingDuration | Provide the remaining duration for the task. |
| ActualStartDate | Provide the actual start date for the task, if applicable. Use of this field is required if the task has started. |
| ActualFinishDate | Provide the actual finish date for the task, if applicable. Use of this field is required if the task has finished. |
| Use Notes |  | |

### TaskCustomFieldDefinitions

|  |  |  |
| --- | --- | --- |
| Table | TaskCustomFieldDefinitions | |
| Entity | TaskCustomFieldDefinition | |
| Purpose | Provides definitions for custom fields for tasks in the schedule. | |
| Fields | Name | Use Notes |
| CustomFieldID | Provide the ID of the custom field according to the CustomFieldEnum. |
| Name | Provide a name for the custom field. |
| Comments | Provide any comments about the custom field. |
| Use Notes |  | |

### TaskCustomFieldValues

|  |  |  |
| --- | --- | --- |
| Table | TaskCustomFieldValues | |
| Entity | TaskCustomFieldValue | |
| Purpose | Provides values for custom fields for tasks in the schedule. | |
| Fields | Name | Use Notes |
| TaskID | Provide the ID of the associated task. |
| CustomFieldID | Provide the ID of the custom field according to the CustomFieldEnum. |
| Value | Provide the value of the custom field for the associated task. |
| Use Notes |  | |

### TaskConstraints

|  |  |  |
| --- | --- | --- |
| Table | TaskConstraints | |
| Entity | TaskConstraint | |
| Purpose | Provides a list of the constraints applied to tasks in the schedule. | |
| Fields | Name | Use Notes |
| TaskID | Provide the ID of the associated task. |
| ConstraintTypeID | Indicate the constraint type according to the TaskConstraintTypeEnum. |
| OtherConstraintType | If the constraint type indicated by ConstraintTypeID is OTHER, provide a name or short description for the constraint type in this field. |
| ConstraintDate | Provide the constraint date. |
| Use Notes |  | |

### TaskRelationships

|  |  |  |
| --- | --- | --- |
| Table | TaskRelationships | |
| Entity | TaskRelationship | |
| Purpose | Provides the network of predecessor/successor relationships between tasks in the schedule. | |
| Fields | Name | Use Notes |
| PredecessorTaskID | Provide the ID of the predecessor task. |
| SuccessorTaskID | Provide the ID of the successor task. |
| RelationshipTypeID | Indicate the relationship type according to the TaskRelationshipTypeEnum. |
| LagDuration | Provide the duration of the lag or lead (negative lag) associated with the relationship, if applicable. |
| LagCalendarID | Provide the ID of the calendar used to measure lag if different than the calendar associated with the successor task. |
| Use Notes |  | |

### TaskOutlineStructure

|  |  |  |
| --- | --- | --- |
| Table | TaskOutlineStructure | |
| Entity | TaskOutlineNode | |
| Purpose | Provides the outline (i.e. hierarchical structure) of summary tasks in the schedule, if applicable. | |
| Fields | Name | Use Notes |
| Level | Provide the level of the task outline node. |
| TaskID | Provide the ID of the task associated with the task outline node. |
| ParentTaskID | Provide the ID of the summary task associated with the parent task outline node, if applicable. |
| Use Notes | The task outline structure must be reported if the schedule includes summary tasks. | |

### Resources

|  |  |  |
| --- | --- | --- |
| Table | Resources | |
| Entity | Resource | |
| Purpose | Provides a list of the resources for the project. | |
| Fields | Name | Use Notes |
| ID | Provide a unique ID for the resource. |
| Name | Provide a name for the resource. |
| ElementOfCostID | Identify the element of cost for the resource according to the ElementOfCostEnum. |
| Comments | Provide any comments about the resource. |
| Use Notes |  | |

### ResourceCustomFieldDefinitions

|  |  |  |
| --- | --- | --- |
| Table | ResourceCustomFieldDefinitions | |
| Entity | ResourceCustomFieldDefinition | |
| Purpose | Provides definitions for custom fields for resources for the project. | |
| Fields | Name | Use Notes |
| CustomFieldID | Provide the ID of the custom field according to the CustomFieldEnum. |
| Name | Provide a name for the custom field. |
| Comments | Provide any comments about the custom field. |
| Use Notes |  | |

### ResourceCustomFieldValues

|  |  |  |
| --- | --- | --- |
| Table | ResourceCustomFieldValues | |
| Entity | ResourceCustomFieldValue | |
| Purpose | Provides values for custom fields for resources for the project. | |
| Fields | Name | Use Notes |
| ResourceID | Provide the ID of the associated Resource. |
| CustomFieldID | Provide the ID of the custom field according to the CustomFieldEnum. |
| Value | Provide the value of the custom field for the associated Resource. |
| Use Notes |  | |

### ResourceAssignments

|  |  |  |
| --- | --- | --- |
| Table | ResourceAssignments | |
| Entity | ResourceAssignment | |
| Purpose | Provides data about the assignment of resources to tasks in the schedule. | |
| Fields | Name | Use Notes |
| ResourceID | Provide the ID of the associated resource. |
| TaskID | Provide the ID of the associated task. |
| Budget\_AtCompletion\_Dollars | Provide the budget at completion in dollars. |
| Budget\_AtCompletion\_Hours | Provide the budget at completion in hours. |
| Estimate\_ToComplete\_Dollars | Provide the remaining estimate to complete in dollars. |
| Estimate\_ToComplete\_Hours | Provide the remaining estimate to complete in hours. |
| Actual\_ToDate\_Dollars | Provide the actual to date dollars. |
| Actual\_ToDate\_Hours | Provide the actual to date hours. |
| PhysicalPercentComplete | Provide the physical percent complete for the resource assignment. |
| Use Notes |  | |

## Enumerations

### ContractorIDCodeTypeEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | ContractorIDCodeTypeEnum | |
| Values | ID | Use Notes |
| DUNS | Use this ID to indicate that the contractor ID code is a DUNS code. |
| DUNS\_PLUS\_4 | Use this ID to indicate that the contractor ID code is a DUNS+4 code. |
| CAGE | Use this ID to indicate that the contractor ID code is a CAGE code. |
| Use Notes |  | |

### DurationUnitsEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | DurationUnitsEnum | |
| Values | ID | Use Notes |
| DAYS | Use this ID to indicate that durations are reported in days. |
| HOURS | Use this ID to indicate that durations are reported in hours. |
| Use Notes |  | |

### TaskTypeEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | TaskTypeEnum | |
| Values | ID | Use Notes |
| ACTIVITY | Use this ID to indicate that a task is an activity (an element of work with duration). |
| MILESTONE | Use this ID to indicate that a task is a milestone (a point of reference without duration). |
| SUMMARY | Use this ID to indicate that a task is a summary (a derived task defined in relation to a hierarchical task outline structure). |
| HAMMOCK | Use this ID to indicate that a task is a hammock (a derived task defined in relation to the endpoints of other tasks). |
| Use Notes |  | |

### TaskSubtypeEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | TaskSubtypeEnum | |
| Values | ID | Use Notes |
| RISK\_MITIGATION\_TASK | Use this ID to indicate that a task is a risk mitigation task. |
| SCHEDULE\_VISIBILITY\_TASK | Use this ID to indicate that a task is a schedule visibility task. |
| SCHEDULE\_MARGIN | Use this ID to indicate that a task represents schedule margin. |
| CONTRACTUAL\_MILESTONE | Use this ID to indicate that a milestone is a contractual milestone. |
| Use Notes |  | |

### TaskPlanningLevelEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | TaskPlanningLevelEnum | |
| Values | ID | Use Notes |
| SUMMARY\_LEVEL\_PLANNING\_PACKAGE | Use this ID to indicate that a task directly represents (has a one-to-one relationship with) a summary-level planning package. |
| CONTROL\_ACCOUNT | Use this ID to indicate that a task directly represents (has a one-to-one relationship with) a control account. |
| PLANNING\_PACKAGE | Use this ID to indicate that a task directly represents (has a one-to-one relationship with) a planning package. |
| WORK\_PACKAGE | Use this ID to indicate that a task directly represents (has a one-to-one relationship with) a work package. |
| ACTIVITY | Use this ID to indicate that none of the above applies. This typically means that the task is one of multiple activities that relate to (have a many-to-one relationship with) a single work package. |
| Use Notes |  | |

### EarnedValueTechniqueEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | EarnedValueTechniqueEnum | |
| Values | ID | Use Notes |
| APPORTIONED\_EFFORT | Use this ID to indicate that earned value is dependent on other discrete tasks being completed. |
| LEVEL\_OF\_EFFORT | Use this ID to indicate that earned value is based on the level of effort in the absence of specific end results or deliverables. |
| MILESTONE | Use this ID to indicate that a specified percent complete (of the total budget) is earned when a milestone is complete. |
| FIXED\_0\_100 | Use this ID to indicate that 100% of the budget value is earned when the work effort is complete. |
| FIXED\_100\_0 | Use this ID to indicate that 100% of the budget value is earned when the work effort begins. |
| FIXED\_X\_Y | Use this ID to indicate that a fixed, non-zero percentage of the budget value is earned when work begins and a fixed, non-zero percentage is earned when work completes. |
| PERCENT\_COMPLETE | Use this ID to indicate that earned value is based on the percent complete (between 0 and 100). |
| STANDARDS | Use this ID to indicate that earned value is based on a set standard defined for the type of product being produced. |
| UNITS | Use this ID to indicate that earned value is based on quantity of material units or manufactured components. |
| OTHER\_DISCRETE | Use this ID to indicate that earned value for a discrete task is determined by a rule not defined above. |
| Use Notes |  | |

### TaskConstraintTypeEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | TaskConstraintTypeEnum | |
| Values | ID | Use Notes |
| START\_NO\_EARLIER\_THAN | Use this ID to denote a “Start No Earlier Than” (SNET) constraint. |
| FINISH\_NO\_EARLIER\_THAN | Use this ID to denote a “Finish No Earlier Than” (FNET) constraint. |
| START\_NO\_LATER\_THAN | Use this ID to denote a “Start No Later Than” (SNLT) constraint. |
| FINISH\_NO\_LATER\_THAN | Use this ID to denote a “Finish No Later Than” (FNLT) constraint. |
| MUST\_START\_ON | Use this ID to denote a “Must Start On” (MSO) constraint. |
| MUST\_FINISH\_ON | Use this ID to denote a “Must Finish On” (MFO) constraint. |
| AS\_LATE\_AS\_POSSIBLE | Use this ID to denote an “As Late As Possible” (ALAP) constraint. |
| SHOULD\_START\_NO\_LATER\_THAN | Use this ID to denote a “Start No Later Than” (SNLT) constraint that *does not restrict early dates* frommoving forward in time as a result of schedule logic. |
| SHOULD\_FINISH\_NO\_LATER\_THAN | Use this ID to denote a “Finish No Later Than” (FNLT) constraint that *does not restrict early dates* from moving forward in time as a result of schedule logic. |
| SHOULD\_START\_ON | Use this ID to denote a “Must Start On” (MSO) constraint that *does not restrict early dates* from moving forward in time as a result of schedule logic. |
| SHOULD\_FINISH\_ON | Use this ID to denote a “Must Finish On” (MFO) constraint that *does not restrict early dates* from moving forward in time as a result of schedule logic. |
| RESOURCE\_LEVELING\_START\_DELAY | Use this ID to denote a start delay introduced as a result of resource leveling. |
| RESOURCE\_LEVELING\_FINISH\_DELAY | Use this ID to denote a finish delay introduced as a result of resource leveling. Use this constraint to indicate that the task finish is delayed by a different duration than the task start. |
| DEADLINE | Use this ID to denote a “Deadline” date. This is an alias for SHOULD\_FINISH\_NO\_LATER\_THAN. |
| OTHER | Use this ID to denote a constraint type other than any of the above. |
| Use Notes | All tasks are assumed to start “As Soon As Possible” (ASAP) unless explicitly constrained otherwise. Do not use OTHER to indicate an ASAP constraint. | |

### TaskRelationshipTypeEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | TaskRelationshipTypeEnum | |
| Values | ID | Use Notes |
| FINISH\_TO\_START | Use this ID to denote a finish-to-start (FS) relationship. |
| START\_TO\_START | Use this ID to denote a start-to-start (SS) relationship. |
| FINISH\_TO\_FINISH | Use this ID to denote a finish-to-finish (FF) relationship. |
| START\_TO\_FINISH | Use this ID to denote a start-to-finish (SF) relationship. |
| Use Notes |  | |

### ElementOfCostEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | ElementOfCostEnum | |
| Values | ID | Use Notes |
| LABOR | Use this ID to identify the element of cost for a resource as Labor. |
| MATERIAL | Use this ID to identify the element of cost for a resource as Material. |
| OTHER\_DIRECT\_COSTS | Use this ID to identify the element of cost for a resource as Other Direct Costs. |
| SUBCONTRACT | Use this ID to identify the element of cost for a resource as Subcontract. |
| Use Notes |  | |

### CustomFieldEnum

|  |  |  |
| --- | --- | --- |
| Enumeration | CustomFieldEnum | |
| Values | ID | Use Notes |
| FIELD\_01 | Use this ID to identify a custom field as Field 01. |
| FIELD\_02 | Use this ID to identify a custom field as Field 02. |
| FIELD\_03 | Use this ID to identify a custom field as Field 03. |
| FIELD\_04 | Use this ID to identify a custom field as Field 04. |
| FIELD\_05 | Use this ID to identify a custom field as Field 05. |
| FIELD\_06 | Use this ID to identify a custom field as Field 06. |
| FIELD\_07 | Use this ID to identify a custom field as Field 07. |
| FIELD\_08 | Use this ID to identify a custom field as Field 08. |
| FIELD\_09 | Use this ID to identify a custom field as Field 09. |
| FIELD\_10 | Use this ID to identify a custom field as Field 10. |
| Use Notes |  | |