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| PGE Logo | |
| Component Specification | |
|  |  |

EDITING – LABEL TEXT

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| --- | --- | --- | --- |
| Revision History | | | |
| Document # | Date | Author | Summary of Changes |
| Editing LabelText Comp Specification | 7/28/2012 | Jake Bradley | Initial Draft |
| Editing LabelText Comp Specification | 8/06/2012 | Stetson Weddle | Revisions |
| Editing LabelText Comp Specification | 8/17/2012 | Junwei Liu | Revisions based on Don Peaslee comments |
| Editing LabelText Comp Specification | 7/25/2013 | Jon Ronat | Added details on Support Structure Label Text AU |
| 1.5 | 11/21/2014 | Ashish Narasimham | Updated document to reflect changes up to data model 9.0 |
| 1.6 | 2/11/15 | Ashish Narasimham | DM 9.3 |

## Security Classification

## Retention Requirements

## Document Audience

# Introduction

## Goals and objectives

The purpose of this document is to detail the architecture, configuration, and implementation of custom functionality to be developed by for PG&E ED GIS Asset Management Project. This document covers all the custom components that fall under the Editing General functional group and is required for the DLM3 release cycle.

Specifications of each component of the proposed solution are described here and could be used by technical staff to develop the extensions components.

The intended audience includes project leads, technical leads and technical staff such as programmers/developers.

## Referenced documents

| Title | Source | Type | Date | Revision |
| --- | --- | --- | --- | --- |
| PGE ED Annotation and Labels v7.0.3.xls | UDC | Excel |  |  |
| ArcFM Requirements in TFS |  |  |  |  |

## Business Requirements

Implements the following requirements:

| Requirement | ID | Notes | Source |
| --- | --- | --- | --- |
| ArcFM shall automatically update the attributes in label text. | EDARCFM0905 |  | Data Validation - All (Intrptr, Reclsr, Sectnl, CapBank, Stepdwn,VolReg, Switch) |

## Statement of scope

### In – Scope

All the requirements that fall under Editing-LabelText functional group will be covered as part of this component specification document.

### Out of scope

Requirements that are marked for other release cycle and requirements that are not grouped under Editing Generic will not be covered as part of this document.

## Software context

This section defines the software requirements for implementing the custom extensions with specific version numbers. The software requirements are

ArcFM 10.0.3

ArcGIS 10 SP3

.Net 3.5

Oracle 11g

The development of custom components will be carried out using C# as the programming language.

## Major assumptions

* The components are designed to work in ArcMap and ArcFM.
* The components are not designed for data conversion
* The converted data must be consistent with and will adhere to all the label text rules that are specified in this document.

# Component Design

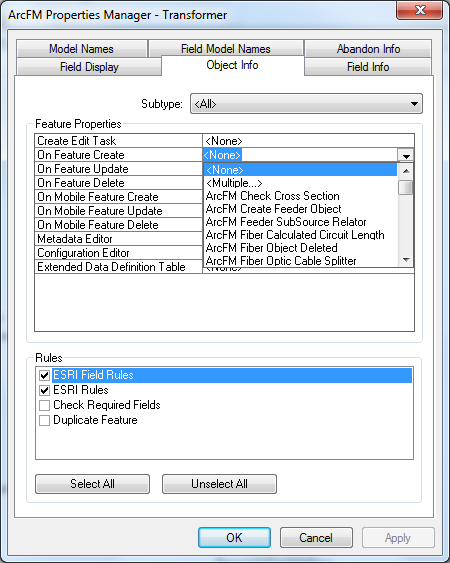
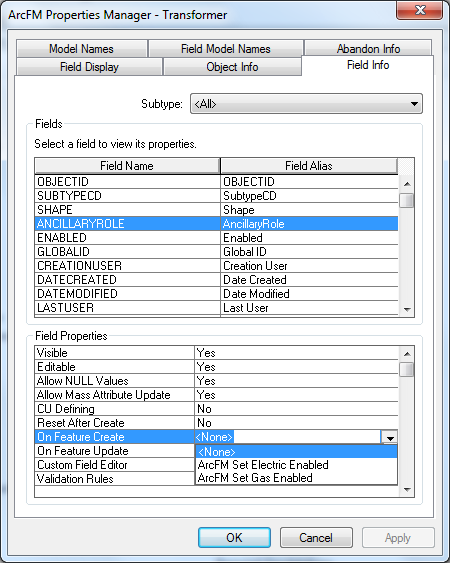
**DataCondition Level (DatCon)**

Components often fit into a larger context of data integrity and data validation. The concept of DatCon is meant to illustrate a point in the editing process at which time a components can be executed and perform some sort of data integrity check: auto-populate fields, verify data conditions, final verification, follow-up reporting of data conditions. The following is a brief description of the various working DatCon levels.

1. **DatCon 1:** This is the first opportunity to provide data integrity checks in the ArcFM environment. Typically, these components are written as ArcFM Autoupdaters and are executed in response to user edit events. OnCreate, OnUpdate, or OnDelete are the events that are typically used. Here the component can auto-populate fields or provide first defense data integrity checks which can optionally cancel any critical violations of data integrity.
2. **DatCon 2:** Data integrity checks are executed any time during a typical edit session. They can be executed immediately before completion of a job, or multiple times over multiple days in the lifecycle of a job. Here, components are typically written as ArcFM Validation Rules. Data integrity checks in this category are not as critical and can be allowed to exist until the user fixes them.
3. **DatCon 3:** Data integrity checks at this level are executed prior to submitting the job for posting to the default version. These checks are typically written as ArcFM Validation Rules and are executed manually by a QA/QC Officer before they are posted. Optionally, additional ArcFM Products can prevent jobs from posting to the default version if there are any violations that are not manually corrected by the QA/QC Officer.
4. **DatCon 4:** Finally, ad-hoc reports can be executed at any time against any subset of the database in order to further verify and check for data integrity errors. These components are typically ArcFM Validation Rules, but can also be custom rules executed as part of a stand-alone application or database query. These errors are not typically critical as they can exist in the database indefinitely and can be corrected at any time during an actual job or simply in an ad-hoc session.

## Autoupdaters

This section will detail the Special (feature level) and Attribute (field level) Autoupdaters (AUs) that will be developed to support the PG&E editing scenarios. Special AUs are configured on the Object Info tab of the ArcFM Properties Manager utility in ArcCatalog. Attribute AUs are configured on the Field Info tab. Multiple AUs may be configured to execute consecutively by choosing the “Multiple” option in the dropdown list for the appropriate event.

The following AU components are identified for the requirements listed above. All AU components will execute as part of DatCon 1.

* PGE SupportStructure Label Text AU
* PGE Transformer Label Text AU
* PGE PriOHConductor Label Text AU
* PGE PriUGConductor Label Text AU
* PGE SecOHConductor Label Text AU
* PGE SecUGConductor Label Text AU
* PGE Conduit Label Text AU
* PGE Relationship LabelText AU
* PGE Duct Definition LabeText AU

The PGE Relationship LabelText AU is special in that it is assigned to all “parent\_child” like relationship classes including Transformer\_TransformerUnit, PriOHConductor\_ PriOHConductorInfo, PriUGConductor\_ PriUGConductorInfo, SecOHConductor\_ SecOHConductorInfo, SecUGConductor\_ SecUGConductorInfo, ConduitSystem \_ DuctDefinition. It simply triggers the AUs specifically developed for these “parent\_child” feature and object classes to fire when child objects are being added to or deleted from their corresponding parent features. Required configuration information is contained within Relationship AutoUpdaters subsection of these individual AUs.

If any constructed label text is longer than the allowable field length in which the label text will be stored, the string will be truncated to fit into the field. For example, if the label text field is 100 characters long, but the label text string is 110, the last 4 characters of the string will be truncated.

Common Rules for Conductor AUs

PGE PriOH Conductor LabelText AU, PGE PriUG Conductor LabelText AU, PGE SecOH Conductor LabelText AU, PGE SecUG Conductor LabelText AU should follow the logic here where a ConductorCount, Material and Size are required in the Label Text value.

1. Get a list of all related non-neutral PriOH/PriUG/SecOH/SecUGConductorInfo objects where the PhaseDesignation != CN or N or PN or RCN.
2. Group them by unique Material and ConductorSize.
3. Then for each group get a label text with the Count +” – “ + ConductorSize+ Material, and append each group by “&”. Count is the subtotal of ConductorCount field value of conductor info records by group.

Example: If a PriOHConductor is related to 4 ConductorInfo objects and the following attributes are populated

**Scenario 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Object Number | ConductorCount | Material | ConductorSize | PhaseDesignation |
| 1 | 1 | ACSR | 1/0 | A |
| 2 | 1 | ACSR | 1/0 | B |
| 3 | 1 | ACSR | 2/0 | C |
| 4 | 1 | ACSR | 2/0 | N |

The label text would be: **2-1/0ACSR & 1-2/0ACSR & 1-2/0 ACSR** (The last part is required only if Neutral is required)

**Scenario 2:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Object Number | ConductorCount | Material | ConductorSize | PhaseDesignation |
| 1 | 2 | ASC | 1/0 | A |
| 2 | 1 | ACSR | 1/0 | B |
| 3 | 1 | ACSR | 2/0 | C |
| 4 | 1 | ACSR | 2/0 | N |

The label text would be: **2-1/0ASC & 1-1/0 ACSR & 1-2/0 ACSR & 1-2/0 ACSR**

### PGE SupportStructure Label Text AU

Name: PGE SupportStructure Label Text AU

Enabled: PGE\_SupportStructure object model name is assigned.

PGE SupportStructure Customer AU will manage the Annotation Label Texts for the SupportStructure features. Annotation for a SupportStructure feature is generated in a single form. The LabelText field is used to maintain the annotation requirements. The following table gives a list of rules the Autoupdater would use to create annotation text for the PriOHConductor feature class.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Object Class*** | | ***Field*** | ***Subtype*** | ***Anno Class*** |
| SupportStructure | | LabelText | All | SupportStructureAnno |
|  | Rules: | If SupportStructure CustomerOwned field = ‘Y’  For all the related JointOwner records related to the SupportStructure  Append the value of the JOName attribute to the LabelText attribute (separate with “, “).  (JOName uses the domain Joint Pole Members – populate with the code, not the Description)  If SupportStructure.CustomerOwned field = “N’, LabelText value will be deleted.  If there is more than one record with the same owner, pre-prend the count, example: 2-PGE.  No specific sorting needed. | | |

The following conditions should be met for the Autoupdater to execute and set the label text field.

1. Field with model name LABELTEXT is found in the SupportStructure feature class.
2. The CustomerOwned field = “Y”.
3. At least one related JointOwner record is found.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText following the logic in the table above.

With the OnFeatureUpdate event, the AU will fire only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
|  |  |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| SupportStructure | LabelText | LABELTEXT |
| SupportStructure |  | PGE\_LABELTEXTBANK |
| JointOwner |  | PGE\_LABELTEXTUNIT |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| SupportStructure | Yes | Yes | No |
| JointOwner | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | SupportStructure\_JointOwner | Yes | Yes |

### PGE Transformer Label Text AU

Name: PGE Transformer Label Text AU

Enabled: for Transformer and TransformerUnit

This AU will be executed as part of DatCon 1 (see above).

PGE Transformer Label Text AU will manage the Annotation Label Texts for the Transformer features.

The following table gives the list of rules the AutoUpdater would follow.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Object Class*** | | ***Field*** | ***Subtype*** | ***Anno Class*** |
| Transformer + 1 or 2 related Transformer Units | | LabelText | Distribution Overhead | TransformerAnno |
| Rules: | If the LowsideVoltage is 120/240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberofPhases + NewLine  + Transformer.LowSideVoltage + NewLine | | | |
| Example | 25  277/480 | | | |
| Transformer + 3 related Transformer Units | | LabelText | Distribution Overhead | TransformerAnno |
| Rules: | If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Transformer.NumberOfPhases = 3 then append 3∅ after the UnitsRatedKVA  If Transformer.StabilizingBankIdc=’Y’ then append “ STB” If Transformer.GroundingIDC=’Y’ then append “ GRD”  UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + 3∅ + NewLine + Transformer.LowSideVoltage + NewLine  + **<” STB”** and/or **“ GRD”>** | | | |
| Example | 50/50/50 3∅  277/480  STB | | | |
| Transformer | | LabelText | Distribution Subsurface | TransformerAnno |
| Rules: | If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + NewLine + Transformer.LowSideVoltage | | | |
| Example | o50 3∅  277/480 | | | |
| Transformer | | LabelText | Distribution Padmount | TransformerAnno |
| Rules: | UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + “ “ + NewLine  + Transformer.LowSideVoltage | | | |
| Example | 50 3∅  277/480 | | | |
| Transformer | | LabelText | Equipment | TransformerAnno |
| Rules: | UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + “ “ + NewLine  + Transformer.LowSideVoltage | | | |
| Example | 50 3∅  277/480 | | | |
| Transformer | | LabelText | Network Subsurface | TransformerAnno |
| Rules: | UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + “ “ + NewLine  + Transformer.LowSideVoltage | | | |
| Example | 50 3∅  277/480 | | | |
| Transformer | | LabelText | Network Padmount | TransformerAnno |
| Rules: | UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + “ “ + NewLine  + Transformer.LowSideVoltage | | | |
| Example | 50 3∅  277/480 | | | |
| Transformer | | LabelText | StreetLight | TransformerAnno |
| Rules: | UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage.  If Transformer.RegulatedOutputIDC=’Y’ then append “R.O.” (added a period “.”) | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + “ “ + NewLine  + Transformer.LowSideVoltage  **<+ ” R.O.” if Transformer.RegulatedOutputIDC=’y’>** | | | |
| Example | 50 3∅  277/480 R.O. | | | |
| Transformer | | LabelText | Secondary | TransformerAnno |
| Rules: | UnitsRatedKVA is the RatedKVA for each transformer unit separated by a “/”  If the number of phases is greater than 2 then show phase after UnitsRatedKVA  If the LowsideVoltage is 120/240 240 (20, 22), Streetlight Only (23) or “Unspecified” (99) do not show voltage.  Use domain DESCRIPTION for Transformer.LowSideVoltage and Transformer.OperatingVoltage. | | | |
| LabelText Expression: | UnitsRatedKVA + “ “ + Transformer.NumberOfPhases + “ “ + NewLine  + Transformer.LowSideVoltage | | | |
| Example | 50 3∅  277/480 | | | |

The following conditions should be met for the AU to execute and set the label text field.

1. All the fields required to form the LabelText are found.
2. Field with model name LABELTEXT is found on the Transformer feature class.
3. Related TransformerUnit record is found.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText following the logic in the table above.

With the OnFeatureUpdate event, the AU will update the LABELTEXT(2) field only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
| EDARCFM0905 | ArcFM shall automatically update the attributes in label text. |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| Transformer | LabelText | LabelText |
| Transformer |  | PGE\_LABELTEXTBANK |
| TransformerUnit |  | PGE\_LABELTEXTUNIT |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| Transformer | Yes | Yes | No |
| TransformerUnit | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | Transformer\_TransformerUnit | Yes | Yes |

### PGE PriOHConductor Label Text AU

Name: PGE PriOHConductor Label Text AU

Enabled: PGE\_LabelTextBank/PGE\_LabelTextUnit object model name is assigned.

PGE PriOHConductor Label Text AU will manage the Annotation Label Texts for the PriOHConductor features. Annotation for a PriOHConductor feature is generated in 2 different forms. LabelText and LabelText2 fields are used to maintain these different annotation requirements. The following table gives a list of rules the Autoupdater would use to create annotation text for the PriOHConductor feature class.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Object Class*** | | ***Field*** | ***Subtype*** | ***Anno Class*** |
| PriOHConductor | | LabelText | All | PriOHConductorAnno |
|  | Rules: | Neutral ConductorCount, ConductorSize, Material are ConductorCount, ConductorSize Material where the PhaseDesignation of the related PriOHConductorInfo is CN, N, PN, or RCN  Add the Neutral ConductorCount, ConductorSize, Material, PhaseDesignation only if there is a related record with PhaseDesignation equal to CN, N, PN, or RCN, do not show (UNKNOWN)  If ConductorSize or Material is Unknown or None do not annotate.  Use domain DESCRIPTION for PriOHConductor.NominalVoltage.  Use domain CODE for ConductorSize, Material | | |
|  | LabelText Expression: | ConductorCount + “-“ +ConductorSize +Material  + “ & ” +Neutral ConductorCount  + ” – “ +ConductorSize +Material + “(“ +PhaseDesignation + “)” + PriOHConductor.NominalVoltage | | |
|  | Example | 1-4AR 12KV ***- OR-*** 1-4AR & 1-4AR (PN) 12KV | | |

The following conditions should be met for the Autoupdater to execute and set the label text field.

1. All the fields required to form the LabelText/LabelText2 are found.
2. Field with model name LABELTEXT or LABELTEXT2 is found on the PriOHConductor feature class.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText/LabelText2 following the logic in the table above.

With the OnFeatureUpdate event, the AU will fire only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
| EDARCFM0905 | ArcFM shall automatically update the attributes in label text. |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| PriOHConductor | LabelText | LABELTEXT |
| PriOHConductor | LabelText2 | LABELTEXT2 |
| PriOHConductor |  | PGE\_LABELTEXTBANK |
| PriOHConductorInfo |  | PGE\_LABELTEXTUNIT |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| PriOHConductor | Yes | Yes | No |
| PriOHConductorInfo | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | PriOHConductor\_PriOHConductorInfo | Yes | Yes |

### PGE PriUGConductor Label Text AU

Name: PGE PriUGConductor Label Text AU

Enabled: PGE\_LabelTextBank/PGE\_LabelTextUnit object model name is assigned.

PGE PriUGConductor Label Text AU will manage the Annotation Label Texts for the PriUGConductor features. Annotation for a PriUGConductor feature is generated in 2 different forms. LabelText and LabelText2 fields are used to maintain these different annotation requirements. The following table gives a list of rules the Autoupdater would use to create annotation text for the PriUGConductor feature class.

The following table gives a list of rules the Autoupdater would create for the PriUGConductor feature classes.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Subtype*** | ***Anno Class*** |
| PriUGConductor | LabelText | Single Phase Primary Underground | PriUGConductorAnno |
| Rules: | If PriUGConductor.JointTrenchIdc = ‘Y’ add JT else nothing, if ServiceIdc = “Y” append “SV” ,  Do not show a neutral phase of (UNKNOWN).  Do not show Insulation of OTH or UNK  If ConductorSize or Material is Unknown or None do not annotate.  Use domain DESCRIPTION for PriUGConductor. NominalVoltage  Use domain CODE for PriUGConductorInfo.ConductorSize, PriUGConductorInfo.Material, PriUGConductorInfo.Insulation.  Only display ConductorType if = “TPX” or “QPX”. | | |
| LabelText Expression: | PriUGConductorInfo.ConductorCount + “-“ + PriUGConductorInfo.ConductorSize + “ “ + PriUGConductorInfo.Material + PriUGConductorInfo.Insulation +  + PriUGConductorInfo.ConductorType + per Robert 7/6/2013  + “ & “ +**Neutral** PriUGConductorInfo.Conductorcount + ” – “ + PriUGConductorInfo.Size + PriUGConductorInfo.Material + PrimaryUGConductorinfo.Insulation + “(“ + PriUGConductorInfo.PhaseDesignation + “)” ~~+ “(“ + PrimaryUGCondutorInfo.Rating + “) ”~~ per Robert 7/3/2013 Remove rating + PriUGConductor.NominalVoltage + ” “ + PriUGConductor.JointTrenchIdc + “JT” + “SV” | | |
| Example | 1-1/0A EPR 12KV SV ***-OR-*** 1-1/0A EPR 12KV JT SV ***-OR-*** 1-1/0A EPR & 1-1/0A XLP (PN) 12KV SV | | |
| PriUGConductor | LabelText | Two Phase Primary Underground | PriUGConductorAnno |
| Rules: | If PriUGConductor.JointTrenchIdc = ‘Y’ append JT, if ServiceIdc = “Y”  Do not show a neutral phase of (UNKNOWN).  Do not show Insulation of OTH or UNK  If ConductorSize or Material is Unknown or None do not annotate.  Use domain DESCRIPTION for PriUGConductor. NominalVoltage  Use domain CODE for PriUGConductorInfo.ConductorSize, PriUGConductorInfo.Material, PriUGConductorInfo.Insulation.  Only display ConductorType if = “TPX” or “QPX”. | | |
| LabelText Expression: | PriUGConductorInfo.ConductorCount + “-“ + PriUGConductorInfo.ConductorSize + “ “ + PriUGConductorInfo.Material  + PriUGConductorInfo.Insulation +  + “ & “ +**Neutral** PriUGConductorInfo.Conductorcount + ” – “ + PriUGConductorInfo.Size + PriUGConductorInfo.Material + PrimaryUGConductorinfo.Insulation  + PriUGConductorInfo.ConductorType + per Robert 7/6/2013 + “(“ + PriUGConductorInfo.PhaseDesignation + “)” ~~+ “(“ + PrimaryUGCondutorInfo.Rating + “) ”~~ per Robert 7/3/2013 Remove rating + PriUGConductor. NominalVoltage + ” “ + PriUGConductor.JointTrenchIdc + “JT + “SV” | | |
| Example | 2-1/0A EPR 12KV ***-OR-*** 2-1/0A EPR 12KV JT ***-OR-*** 2-1/0A EPR & 1-1/0A XLP (PN) 12KV | | |
| PriUGConductor | LabelText | Three Phase Primary Underground | PriUGConductorAnno |
| Rules: | If PriUGConductor.JointTrenchIdc = ‘Y’ append JT, if ServiceIdc = “Y” append “SV”  Do not show a neutral phase of (UNKNOWN).  Do not show Insulation of OTH or UNK  If ConductorSize or Material is Unknown or None do not annotate.  Use domain DESCRIPTION for PriUGConductor. NominalVoltage  Use domain CODE for PriUGConductorInfo.ConductorSize, PriUGConductorInfo.Material, PriUGConductorInfo.Insulation.  Only display ConductorType if = “TPX” or “QPX”. | | |
| LabelText Expression: | PriUGConductorInfo.ConductorCount + “-“ + PriUGConductorInfo.ConductorSize + “ “ + PriUGConductorInfo.Material + PriUGConductorInfo.Insulation +  + “ & “ +**Neutral** PriUGConductorInfo.Conductorcount + ” – “ + PriUGConductorInfo.Size + PriUGConductorInfo.Material + PrimaryUGConductorinfo.Insulation  + PriUGConductorInfo.ConductorType + per Robert 7/6/2013 + “(“ + PriUGConductorInfo.PhaseDesignation + “)” ~~+ “(“ + PrimaryUGCondutorInfo.Rating + “) ”~~ per Robert 7/3/2013 Remove rating + PriUGConductor. NominalVoltage + ” “ + PriUGConductor.JointTrenchIdc + “JT” + “SV | | |
| Example | 3-1/0A EPR 12KV SV ***-OR-*** 3-1/0A EPR 12KV SV ***-OR-*** 3-1/0A EPR & 1-1/0A XLP (PN) 12KV SV | | |
| PriUGConductor | LabelText4 | All | PriUGConductorAnno |
| Rules: | Concatenate the labeltext of the PriUgConductor with the labeltext fields of each related ConduitSystem feature.  If PriUgConductor.Labeltext is empty, leave it out.  If all ConduitSystem labeltexts are empty, leave them out. | | |
| LabelText Expression: | Labeltext+[ConduitSystem1.Labeltext+…+ConduitSystem2.LabelText] | | |
| Example |  | | |

The following conditions should be met for the Autoupdater to execute and set the label text field.

1. All the fields required to form the LabelText/LabelText2 is found.
2. Field with modelname LABELTEXT or LABELTEXT2 is found on the PriUGConductor feature class.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText/LabelText2 following the logic in the table above.

With the OnFeatureUpdate event, the AU will update the LABELTEXT(2) field only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
| EDARCFM0905 | ArcFM shall automatically update the attributes in label text. |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| PriUGConductor | LabelText | LABELTEXT |
| PriUGConductor | LabelText2 | LABELTEXT2 |
| PriUGConductor |  | PGE\_LABELTEXTBANK |
| PriUGConductorInfo |  | PGE\_LABELTEXTUNIT |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| PriUGConductor | Yes | Yes | No |
| PriUGConductoInfo | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | PriUGConductor\_ PriUGConductorInfo | Yes | Yes |

### PGE SecOHConductor Label Text AU

Name: PGE SecOHConductor Label Text AU

Enabled: PGE\_LabelTextBank/PGE\_LabelTextUnit object model name is assigned.

PGE SecOHConductor Label Text AU will manage the Annotation Label Texts for the SecOHConductor features.

The following table gives a list of rules the Autoupdater would use to create annotation text for the SecOHConductor feature class.

The following table gives a list of rules the Autoupdater would create for the SecOHConductor feature classes.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Object Class*** | | | ***Field*** | | ***Subtype*** | | ***Anno Class*** |
| Secondary OH Conductor | | | LabelText | | Service Overhead Conductor | | SecOHConductor Anno |
|  | Rules: | If ConductorSize or Material is Unknown or None do not annotate.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.    If conductoruse is CN or RCN, append ConductorUse  Use domain CODE for SecOHConductorInfo.ConductorSize, SecOHConductorInfo.Material, SecOHConductorInfo.ConductorType | | | | | |
|  | LabelText Expression: | SecOHConductorInfo.ConductorCount  + ”-“ + SecOHConductorInfo.ConductorSize  + SecOHConductorInfo.Material + SecOHConductorInfo.ConductorUse + ” “ + SecOHConductorInfo.ConductorType | | | | | |
|  | Example | 3-1/0A TPX | | | | | |
| Secondary OH Conductor | | | LabelText | | Single Phase Secondary OverHead | | SecOHConductor Anno |
|  | Rules: | If ConductorSize or Material is Unknown or None do not annotate.  If OperatingVoltage != 120/240 Single Phase or 120/240 Three Phase or Streetlight Only, or Unspecified (codes: 20,22,23,99), then show annotation, otherwise do not show.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  If conductoruse is CN or RCN, append ConductorUse  Use domain DESCRIPTION for SecOHConductor.OperatingVoltage,  Use domain CODE for SecOHConductorInfo.ConductorSize, SecOHConductorInfo.Material, SecOHConductorInfo.ConductorType | | | | | |
|  | LabelText Expression: | SecOHConductorInfo.ConductorCount + “ – “ + SecOHConductorInfo.ConductorSize + SecOHConductorInfo.Material + SecOHConductorInfo.ConductorUse + “ “ + SecOHConductorInfo.ConductorType + “ “ + SecOHConductor.OperatingVoltage | | | | | |
|  | Example | 1-2A QAC 240/480 | | | | | |
| Secondary OH Conductor | | | LabelText | | Three Phase Secondary OverHead | | SecOHConductor Anno |
|  | Rules: | If ConductorSize or Material is Unknown or None do not annotate.  If OperatingVoltage != 120/240 Single Phase or 120/240 Three Phase or Streetlight Only, or Unspecified (codes: 20,22,23,99), then show annotation, otherwise do not show.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  If conductoruse is CN or RCN, append ConductorUse  Use domain DESCRIPTION for SecOHConductor.OperatingVoltage,  Use domain CODE for SecOHConductorInfo.ConductorSize, SecOHConductorInfo.Material, SecOHConductorInfo.ConductorType | | | | | |
|  | LabelText Expression: | SecOHConductorInfo.ConductorCount + “ – “ + SecOHConductorInfo.ConductorSize + SecOHConductorInfo.Material + SecOHConductorInfo.ConductorUse + “ “ + SecOHConductorInfo.ConductorType + “ “ + SecOHConductor.OperatingVoltage | | | | | |
|  | Example | 1-2A QAC 240/480 | | | | | |
| Secondary OH Conductor | | | | LabelText | | Street Light Overhead Conductor | SecOHConductor Anno |
|  | Rules: | If ConductorSize or Material is Unknown or None do not annotate.  If SeriesSLIDC = ‘Y’ then append “SSL” ,  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  If ConductorUse is Common Neutral (code 3) then annotate “(CN)”. If it’s Return Common Neutral (code 9) then annotate “(RCN)”.  Annotate 5kV if Operating Voltage is 5000, and 4kV if it is 4000. Do not annotate otherwise.  Use domain DESCRIPTION for SecOHConductor.OperatingVoltage,  Use domain CODE for SecOHConductorInfo.ConductorSize, SecOHConductorInfo.Material, SecOHConductorInfo.ConductorType | | | | | |
|  | LabelText Expression: | SecOHConductorInfo.ConductorCount + “ – “ + SecOHConductorInfo.ConductorSize + SecOHConductorInfo.Material  + “ “ + SecOHConductor.ConductorUse  + “ “ + SecOHConductorInfo.ConductorType + “ “ + SecOHConductorInfo.OperatingVoltage + “ “ + ”SSL” (see rule above) | | | | | |
|  | Example | 6A DPX 240/480 SSL | | | | | |

The following conditions should be met for the Autoupdater to execute and set the label text field.

1. All the fields required to form the LabelText is found.
2. Field with modelname LABELTEXT is found on the Transformer feature class.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText following the logic in the table above.

With the OnFeatureUpdate event, the AU will update the LABELTEXT(2) field only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
| EDARCFM0905 | ArcFM shall automatically update the attributes in label text. |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| SecOHConductor | LabelText | LABELTEXT |
| SecOHConductor |  | PGE\_LabelTextBank |
| SecOHConductorInfo |  | PGE\_LabelTextUnit |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| SecOHConductor | Yes | Yes | No |
| SecOHConductorInfo | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | SecOHConductor\_SecOHConductorInfo | Yes | Yes |

### PGE SecUGConductor Label Text AU

Name: PGE SecUGConductor Label Text AU

Enabled: PGE\_LabelTextBank/PGE\_LabelTextUnit object model name is assigned.

PGE SecUGConductor Label Text AU will manage the Annotation Label Texts for the SecUGConductor features.The following table gives a list of rules the Autoupdater would use to create annotation text for the SecUGConductor feature class.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Object Class*** | | | | ***Field*** | | ***Subtype*** | | ***Anno Class*** |
| SecUGConductor | | | | LabelText | | Service Underground Conductor | | SecUGConductor Anno |
|  | Rules: | If JointTrenchIDC=’Y’ then append “JT”,  If ConductorSize or Material is Unknown or None do not annotate.  If Material is Unknown or None, or BusDuct do not annotate.  If Insulation is Unknown, Other, or None, do not annotate.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  Annotate DEAD ɸ if deadphaseIDC=yes    Use domain CODE for SecUGConductorInfo.ConductorSize, SecUGConductorInfo.Material, SecUGConductorInfo.ConductorType  The below labeltext expression will be repeated another time for conductors with a neutral phase designation | | | | | | |
|  | LabelText Expression: | SecUGConductorInfo.ConductorCount  + “ –“ + SecUGConductorInfo.ConductorSize  + SecUGConductorInfo.Material + ” “ + SecUGConductorInfo.Insulation + “ “ + SecUGConductorInfo.ConductorType  + “ “ + SecUGConductor.DeadPhase  + SecUGConductor.JointTrenchIDC | | | | | | |
|  | Example | 1-350A XLP TPX JT | | | | | | |
| SecUGConductor | | | | LabelText | | Single Phase Underground Conductor | | SecUGConductor Anno |
|  | Rules: | If JointTrenchIDC=’Y’ then append “JT”,  If ConductorSize or Material is Unknown or None do not annotate.  If Material is Unknown or None, or BusDuct do not annotate.  If Insulation is Unknown, Other, or None, do not annotate.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  Annotate DEAD ɸ if deadphaseIDC=yes    Use domain CODE for SecUGConductorInfo.ConductorSize, SecUGConductorInfo.Material, SecUGConductorInfo.ConductorType  The below labeltext expression will be repeated another time for conductors with a neutral phase designation | | | | | | |
|  | LabelText Expression: | SecUGConductorInfo.ConductorCount  + “ –“ + SecUGConductorInfo.ConductorSize  + SecUGConductorInfo.Material + ” “ + SecUGConductorInfo.Insulation + “ “ + SecUGConductorInfo.ConductorType  + “ “ + SecUGConductor.DeadPhase  + SecUGConductor.JointTrenchIDC | | | | | | |
|  | Example | 1-350A XLP TPX JT | | | | | | |
| SecUGConductor | | | | LabelText | | Three Phase Underground Conductor | | SecUGConductor Anno |
|  | Rules: | If JointTrenchIDC=’Y’ then append “JT”,  If ConductorSize or Material is Unknown or None do not annotate.  If Material is Unknown or None, or BusDuct do not annotate.  If Insulation is Unknown, Other, or None, do not annotate.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  Annotate DEAD ɸ if deadphaseIDC=yes    Use domain CODE for SecUGConductorInfo.ConductorSize, SecUGConductorInfo.Material, SecUGConductorInfo.ConductorType  The below labeltext expression will be repeated another time for conductors with a neutral phase designation | | | | | | |
|  | LabelText Expression: | SecUGConductorInfo.ConductorCount  + “ –“ + SecUGConductorInfo.ConductorSize  + SecUGConductorInfo.Material + ” “ + SecUGConductorInfo.Insulation + “ “ + SecUGConductorInfo.ConductorType  + “ “ + SecUGConductor.DeadPhase  + SecUGConductor.JointTrenchIDC | | | | | | |
|  | Example | 1-350A XLP TPX JT | | | | | | |
| SecUGConductor | | | | LabelText | | StreetLight Underground Conductor | | SecUGConductor Anno |
|  | Rules: | If SeriesSLIDC=’Y’ then append “SSL”  If JointTrenchIDC=’Y’ then append “JT”,  If ConductorSize or Material is Unknown or None do not annotate.  If Material is Unknown or None, or BusDuct do not annotate.  If Insulation is Unknown, Other, or None, do not annotate.  If Conductor Count is <null> or 0 then do not label the count and the dash. This is only for Secondary OH and UG.  Label the Operating Voltage only if it is either 4000 or 5000.  Use domain DESCRIPTION for SecUGConductor.OperatingVoltage,  Use domain CODE for SecUGConductorInfo.ConductorSize, SecUGConductorInfo.Material, SecUGConductorInfo.ConductorType  The below labeltext expression will be repeated another time for conductors with a neutral phase designation | | | | | | |
|  | LabelText Expression: | SecUGConductorInfo.ConductorCount  + “ –“ + SecUGConductorInfo.ConductorSize  + SecUGConductorInfo.Material + ” “ + SecUGConductorInfo.Insulation + “ “ + SecUGConductorInfo.ConductorType  + “ “ + SecUGConductor.DeadPhase  + “ “ + SecUGConductor.OperatingVoltage  + “ “ + SecUGConductor.SeriesSLIDC  + ” “ + SecUGConductor.JointTrenchIDC | | | | | | |
|  | Example | 1-350A XLP TPX 5kV SSL JT | | | | | | |
| SecUGConductor | | | LabelText3 | | All | | SecUGConductorAnno | |
| Rules: | | | Concatenate the labeltext of the SecUgConductor with the labeltext fields of each related ConduitSystem feature.  If SecUgConductor.Labeltext is empty, leave it out.  If all ConduitSystem labeltexts are empty, leave them out. | | | | | |
| LabelText Expression: | | | Labeltext+[ConduitSystem1.Labeltext+…+ConduitSystem2.LabelText] | | | | | |
| Example | | |  | | | | | |

The following conditions should be met for the Autoupdater to execute and set the label text field.

1. All the fields required to form the LabelText is found.
2. Field with modelname LABELTEXT is found on the feature class.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText following the logic in the table above.

With the OnFeatureUpdate event, the AU will update the LABELTEXT(2) field only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
| EDARCFM0905 | ArcFM shall automatically update the attributes in label text. |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| SecUGConductor | LabelText | LABELTEXT |
| SecUGConductor |  | PGE\_LABELTEXTBANK |
| SecUGConductorInfo |  | PGE\_LABELTEXTUNIT |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| SecUGConductor | Yes | Yes | No |
| SecUGConductorInfo | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | SecUGConductor\_SecUGConductorInfo | Yes | Yes |

### PGE DCConductor Label Text AU

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Object Class*** | | | ***Field*** | ***Subtype*** | ***Anno Class*** |
| DCConductor | | | LabelText | All | Default |
|  | Rules: | Do not include conductorSize if UNK or NONE  Do not include material if UNK or NONE  Do not include insulation if UNK or NONE  Do not include conductorType if SW | | | |
|  | LabelText Expression: | [count of Info records] + “-“ + conductorSize + material + “ “ + insulation + “ “ + conductorType + [count…Type] + … + “ DC” | | | |
|  | Example |  | | | |

### PGE NeutralConductor Label Text AU

The following table gives a list of rules the Autoupdater would create:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Object Class*** | | | ***Field*** | ***Subtype*** | ***Anno Class*** |
| NeutralConductor | | | LabelText | All | NeutralConductorAnno |
|  | Rules: | If conductorSize is not null or unk, include.  If material is not null or unk, include.  Include conductorUse abbreviation (PN, CN, RCN) | | | |
|  | LabelText Expression: | ConductorCount + “-“ + conductorSize + material + conductorUse | | | |
|  | Example |  | | | |

### PGE Conduit Label Text AU

PGE Conduit Label Text AU will manage the Annotation Label Texts for the ConduitSystem features.

Annotation for a Conduit System feature is generated in 2 different forms. LabelText and LabelText2 fields are used to maintain these different annotation requirements. The LabelText field

The following table gives a list of rules the Autoupdater would create for the ConduitSystem feature classes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Object Class*** | | | ***Field*** | ***Subtype*** | ***Anno Class*** |
| Conduit | | | LabelText | Duct Bank | ConduitSystemAnno |
|  | Rules: | All ducts should be considered, both available and unavailable.  In all cases, add Duct Count and “-“.  If DuctMaterial is not equal to PVC then append Duct Material  If CapitalizedIDC= ‘N’ then append “NCC” once at the end.  Aggregate by Size, Material  Follow rules below for values of Unknown and NULL  Labeltext is populated only if the ConduitSystem is related to a Primary or Secondary Underground conductor | | | |
|  | LabelText Expression: | ConduitSystem.DuctCount + “-“ + <configuration BLOB>.DuctSize + “\” “ + <configuration BLOB>.Material + “ “ + ConduitSystem.CapitalizedIdc [ + “ & “ …] | | | |
|  | Example | 3-6" STL & 2-10” STL & 1-12” NCC | | | |
| Conduit | | | LabelText2 | Duct Bank | ConduitSystemAnno Subclass <Spare> |
|  | Rules: | In all cases, add Duct Count and “-“.  Only if the ducts in the ConduitSystem BLOB where Duct.Available = “1”.  Aggregate by Size.  Follow rules below for values of Unknown and NULL  Labeltext2 is populated only when ConduitSystem is not related to a Primary or Secondary Underground conductor | | | |
|  | LabelText Expression: | <Number of ducts in the BLOB> + “-“<configuration BLOB>.DuctSize + “Spare” [ + “ & “ …] | | | |
|  | Example | 2-6" Spare & 1-10” Spare & 1-12” Spare | | | |
| Conduit | | | LabelText | Conduit | ConduitSystemAnno |
|  | Rules: | All ducts should be considered, both available and unavailable.  In all cases, add Duct Count and “-“.  If CapitalizedIDC= ‘N’ then append “NCC”  Aggregate by Size, Material  Follow rules below for values of Unknown and NULL  Labeltext is populated only if the ConduitSystem is related to a Primary or Secondary Underground conductor | | | |
|  | LabelText Expression: | <Number of related PGEDuctDefinition aggregated records> + “-“ + PGEDuctDefinition.DuctSize + “\” “ + PGEDuctDefinition.Material + “ “ + NCC [ + “ & “ …] | | | |
|  | Example | 3-6" STL NCC & 2-10” PVC NCC & 1-12” STL NCC | | | |
| Conduit | | | LabelText2 | Conduit | ConduitSystemAnno Subclass <Spare> |
|  | Rules: | In all cases, add Duct Count and “-“.  Only if the any related records have PGEDuctDefinition.Available = “1”.  Aggregate by Size.  Follow rules below for values of Unknown and NULL  Labeltext2 is populated only when ConduitSystem is not related to a Primary or Secondary Underground conductor | | | |
|  | LabelText Expression: | <Number of related PGEDuctDefinition aggregated records> + “-“ + PGEDuctDefinition.DuctSize + “ (inch symbol) + “ Spare” [ + “ & “ …] | | | |
|  | Example | 2-6" Spare & 1-10” Spare & 1-12” Spare | | | |
| Conduit | | | LabelText | CIC | ConduitSystemAnno |
|  | Rules: | All features of this subtype get “CIC”  Labeltext is populated only when ConduitSystem is not related to a Primary or Secondary Underground conductor | | | |
|  | LabelText Expression: | “CIC” | | | |
|  | Example | CIC | | | |

Rules for Unknown or NULL in DuctSize, Material.

* If the size and material are known, and there is one duct, annotate with the size and material
* If the size and material are known, and there is more than one duct, annotate with the number of ducts, size and material
* if either size or material is unknown, annotate the number of ducts and the known information
* if both size and material are unknown, and there is one conduit, annotate “1 DUCT”
* if both size and material are unknown, and there are more than one conduit, annotate the number of conduits and the word “DUCTS”
* If the conduit is spare, add “Spare” to the annotation
* If the conduit has CapitalizedIDC set to “N”, add “NCC” to the annotation.
* Where conduits have differing attributes (size, material, CapitalizedIDC, Spare), concatenate all, using “&” between each one.  Filled conduits to be listed first, and largest conduits to be listed first within the filled or spare conduits.

Examples

Number of

Conduits Size        Material             CapitalizedIDC Annotation

2 3” PL Y 2-3” PL

2 3” UNKNOWN Y 2-3”

2 UNK PL Y 2-PL

2 UNK UNK Y 2-DUCTS

1 3” PL Y 1-3” PL

1 UNK PL Y 1-PL

1 3” UNKNOWN Y 1-3”

1 UNK UNKNOWN Y 1-DUCT

2 3” PL N 2-3” PL NCC

2 3” UNKNOWN N 2-3” NCC

2 UNK PL N 2-PL NCC

2 UNK UNKNOWN        N 2-DUCTS NCC

1 3” PL N 3” PL NCC

1 3” UNKNOWN N 1-3” NCC

1 UNK PL N 1-PL NCC

1 UNK UNKNOWN N 1-DUCT NCC

Example of multiple conduits:

2-3” PL & 1-3” PL Spare

3-5” PL & 2-3”PL

The following conditions should be met for the Autoupdater to execute and set the label text field.

1. All the fields required to form the LabelText/LabelText2 is found.
2. Field with modelname LABELTEXT or LABELTEXT2 is found on the feature class.

With the OnFeatureCreate, if all the above conditions are met the AU will create the LabelText/LabelText2 following the logic in the table above.

With the OnFeatureUpdate event, the AU will update the LABELTEXT(2) field only if the dependent fields are changed and with the same logic as above.

### Requirement References

|  |  |
| --- | --- |
| ***Req ID*** | ***Description*** |
| EDARCFM0905 | ArcFM shall automatically update the attributes in label text. |

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| ConduitSystem | LabelText | LABELTEXT |
| ConduitSystem | LabelText2 | LABELTEXT2 |
| ConduitSystem |  | PGE\_LABELTEXTBANK |
| PGEDuctDefinition |  | PGE\_LABELTEXTUNIT |
| PGEDuctDefinition |  | PGE\_DUCTDEFINITION |
| PGEDuctDefinition | AVAILABLE | DUCTAVAILABILITY |
| PGEDuctDefinition | MATERIAL | DUCTMATERIAL |
| PGEDuctDefinition | DUCTSIZE | DUCTSIZE |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| ConduitSystem | Yes | Yes | No |
| PGEDuctDefinition | No | Yes | No |

#### Relationship Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Relationship AutoUpdater*** | ***Object Class*** | ***On Relationship Created*** | ***On Relationship Deleted*** |
| PGE Relationship LabelText AU | ConduitSystem\_PGEDuctDefinition | Yes | Yes |

### PGE Annotation Horizontal Alignment

**Name:** PGE Annotation Horizontal Alignment AU

**Enable:** OnFeatureCreate or OnFeatureUpdate and Model names assigned: LABELTEXT, LABELTEXT2, or PGE\_ANNO\_EXP\_FIELD.

An AU should be created that would fire on update or create. It should update the related annotation features from horizontal alignment to center alignment. This cannot be done by just updating the horizontal alignment field in ArcMap. The Annotation properties should be updated for the alignment to be set correctly.

This should be assigned to all the line featureclasses. If the event is update fire it only if the LabelText or LabelText2 field is updated or a field that is driving the annotation is updated.

### Configuration

#### Model Name Assignment

|  |  |  |
| --- | --- | --- |
| ***Object Class*** | ***Field*** | ***Model Name*** |
| PriOHConductor | LabelText | LABELTEXT |
| PriOHConductor | LabelText2 | LABELTEXT2 |
| PriOHConductor | INSTALLJOBNUMBER | PGE\_ANNO\_EXP\_FIELD |
| PriOHConductor | INSTALLJOBPREFIX | PGE\_ANNO\_EXP\_FIELD |
| PriOHConductor | INSTALLJOBYEAR | PGE\_ANNO\_EXP\_FIELD |
| PriUGConductor | LabelText | LABELTEXT |
| PriUGConductor | LabelText2 | LABELTEXT2 |
| PriUGConductor | INSTALLJOBNUMBER | PGE\_ANNO\_EXP\_FIELD |
| PriUGConductor | INSTALLJOBPREFIX | PGE\_ANNO\_EXP\_FIELD |
| PriUGConductor | INSTALLJOBYEAR | PGE\_ANNO\_EXP\_FIELD |
| SecOHConductor | LabelText | LABELTEXT |
| SecOHConductor | LabelText2 | LABELTEXT2 |
| SecOHConductor | INSTALLJOBNUMBER | PGE\_ANNO\_EXP\_FIELD |
| SecOHConductor | INSTALLJOBPREFIX | PGE\_ANNO\_EXP\_FIELD |
| SecOHConductor | INSTALLJOBYEAR | PGE\_ANNO\_EXP\_FIELD |
| SecUGConductor | LabelText | LABELTEXT |
| SecUGConductor | LabelText2 | LABELTEXT2 |
| SecUGConductor | INSTALLJOBNUMBER | PGE\_ANNO\_EXP\_FIELD |
| SecUGConductor | INSTALLJOBPREFIX | PGE\_ANNO\_EXP\_FIELD |
| SecUGConductor | INSTALLJOBYEAR | PGE\_ANNO\_EXP\_FIELD |

#### Special Autoupdaters

|  |  |  |  |
| --- | --- | --- | --- |
| ***Object Class*** | ***On Create*** | ***On Update*** | ***On Delete*** |
| PriOHConductor | Yes | Yes | No |
| PriUGConductor | Yes | Yes | No |
| SecOHConductor | Yes | Yes | No |
| SecUGConductor | Yes | Yes | No |

### Class diagram / class hierarchy



#### Restrictions / limitations

1. Updating the label rules will require code changes.
2. The rules are not viewable as they hard coded in the components.

#### Performance issues

1. Configuring the AU to evaluate complex criteria may adversely affect performance.

#### Assumptions

1. Only the current xml in the configured database table will be used for evaluation.
2. The database table will have to have READ permissions to the users.
3. The layers in Arcmap are configured to have correct label text settings.

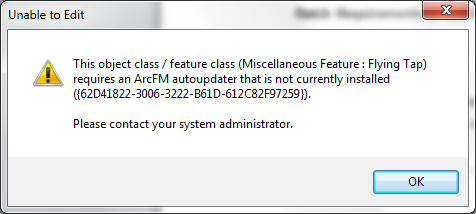
# Data Design

## Database description

## Error Handling

Log4Net will be used for standard error handling.

### Errors: Unable to edit.



Cause: The autoupdater is configured to execute; however, the library containing the autoupdater is not installed on the client machine.

Resolution: Install the client software.

### Error: Unable to obtain the table with the model name: LABELTEXT

Resolution: Verify that the model names are assigned properly.

## Unit Test

The purpose of the unit test is to indicate the methodology to use in order to accomplish a test of the functionality that would mimic real world use by PG&E.

Generic Test

1. Add a feature
2. Record the LABELTEXT/LABELTEXT2 string of the new feature.
3. Find the corresponding LabelText in the label text document.
4. The logic in the document listed for that feature should match what the feature has.

Repeat for every label text rule.

# User interface design

## UI

There is no UI associated with this functionality. All processes are internal to the application and require no user interaction.

# Security

## Security Matrix

Data Sensitivity Levels

|  |  |  |  |
| --- | --- | --- | --- |
| **Sensitivity Level** | **Rating** | **Description** | **Example** |
| 4 | Critical | Any Information where an unauthorized disclosure to unintended recipients could result in financial loss, loss of life, damage to company reputation, or cause significant risks | Customer Information under SB1386, confidential databases, trade secrets, inventions, financial reports prior to release. |
| 3 | High | Any Information that, if disclosed to or modified by unauthorized individuals, might result in the risk of significant loss, significant productivity loss, or significant embarrassment to PG&E | Non-administrative passwords, customer Information, shareholder Information, labor and employee relations data |
| 2 | Medium | Information which does not meet the risk criteria for higher Sensitivity levels and, If disclosed or modified by unauthorized individuals, might result in the risk of some monetary loss, some productivity loss or some embarrassment to PG&E. Sensitivity Level 2 information is often collected for internal use. | Corporate Policies, directories of employee information, organizational charts, contracts (unless otherwise classified) |
| 1 | Low | Anything produced for Public review. At this level any disclosures could reasonably expect not to have an adverse affect. Unintentional alteration or destruction is the primary concern for Sensitivity Level 1 information. | Public information on [www.pge.com](http://www.pge.com) public news releases |

|  |  |
| --- | --- |
| **Security** | **Usage** |
| Data Privacy Level |  |
| Activity Performed |  |
| GIS Application Security |  |