Gas and Pipeline Referencing Utility Network Foundation - Change Log v2

Utility Network Properties

- Network Attribute
  - New Attributes
    - Odorized
      - Assigned to PipelineLine
    - Operable
      - Assigned to PipelineDevice
    - Piggable
      - Assigned to PipelineLine, PipelineDevice, PipelineJunction
- Tiers
  - All Tiers (flags changed from true to false)
    - updateSubnetworkOnStructures: false
    - updateSubnetworkOnContainers: false
    - includeContainers: false
    - includeContent: false
    - includeStructures: false

Class

- PipelineDevice
  - New Fields
    - operable
    - piggable
- PipelineJunction
  - New Fields
    - angle
    - heatnumber
    - materialspecification
    - piggable
  - Change Fields
    - specification
      - name changed to diameterspecification
- StructureLine
  - New Fields
    - wallthickness
- P_PipeCrossing
  - New Fields
    - angle
    - casingindicator

- diameter
- diameterunits
- heightunits
- material
- name
- owner
- surfacetype
- width
- widthunits
- wireheight
- P_PipelineMarker
  - New Fields
    - locationdescription
    - markernumber
    - markertype
- P_SqueezeOff
  - Change Fields
    - symbolrotation
      - change type: 'double' to 'short integer' - consistent with other classes

Asset Groups & Asset Types

- PipelineLine
  - Asset Groups
    - New
      - AC Mitigation Wire (54)
        - Asset Types
          - Unknown (0)
          - Mitigation Wire (921)
            - Category: CP Only
      - Linear Anode (53)
        - Asset Types
          - Unknown (0)
          - Horizontal Anode (981)
            - Category: CP Only
          - Ribbon (982)
            - Category: CP Only
      - Storage Pipe (8)
        - Asset Types
          - Unknown (0)
          - Bare Steel (1)
          - Cast Iron (2)
          - Coated Steel (3)
          - Composite (4)
          - Copper (5)

- - - - - Ductile Iron (6)
          - Plastic ABS (7)
          - Plastic Other (8)
          - Plastic PE (9)
          - Plastic PVC (10)
          - Reconditioned Cast Iron (11)
          - Wrought Iron (12)
      - Changed
        - CP Cable (52)
          - Renamed from 'Rectifier Cable' to 'CP Cable'
          - Asset Types
            - Rectifier Cable (941)
              - Category: CP Only
            - Decoupler Cable (942)
              - Category: CP Only
- PipelineDevice
  - Asset Groups
    - New
      - Decoupler (53)
        - Asset Types
          - Unknown (0)
          - AC Decoupler (921)
            - Category: CP Only
          - DC Decoupler (922)
            - Category: CP Only
      - Grounding Point (4)
        - Asset Types
          - Unknown (0)
          - Grounding Point (961)
            - Category: CP Only
    - Changed
      - Excess Flow Valve (1)
        - Asset Types (new)
          - Breakaway Fitting (3)
      - Line Stopper (13) - renamed from Short Stop
        - Asset Types (rename)
          - Line Stopper - (renamed from Short Stop)
            - Category: Isolating
      - Relief Valve (5)
        - Asset Types (new)
          - Flare (22)
          - Over Pressure Protection (23)
          - Vacuum Pressure Protection (24)
          - Over Pressure and Vacuum Pressure Protection (25)
        - Design Types (new)
          - Unknown (0)

- - - - Pilot Operated (21)
  - Pressure Relief (22)
  - Rupture Disk (23)
  - Spring Operated (24)
  - Vacuum Relief (25)
  - Vacuum Pressure Relief (26)
- PipelineJunction
  - Asset Groups
    - New
      - Tap (25)
        - Asset Types
          - Unknown (0)
          - Cold Tap (841)
          - Hot Tap (842)
          - Full Encirclement (843)
        - Design Types
          - Unknown (0)
          - Flexolet (841)
          - Nipple (842)
          - PigSig (843)
          - Tap (844)
          - Thredolet (845)
          - Weldolet (846)
    - Changed
      - Flange (5)
        - Design Types (new)
          - Unknown (0)
          - Weld Neck (161)
          - Slip On (162)
          - Blind (163)
          - Threaded (164)
          - Socket Welded (165)
          - Lap Joint (166)
      - Pipe Bend (30)
        - Asset Types (new)
          - Hot Bend (51) - previously 'Pipe Bend'
          - Cold Bend (52)
          - Miter Bend (53)
          - Field Bend (54)
          - Wrinkle Bend (55)
          - Factory Bend (56)
        - Design Types (change)
          - 30 Degree (51) - previously 30
          - 45 Degree (52) - previously 45
          - 60 Degree (53) - previously 60
          - 90 Degree (54) - previously 90

- PipelineAssembly
  - Asset Groups
    - New
      - Cathodic Assembly (11)
        - Asset Types
          - Unknown (0)
          - Groundbed Assembly (361)
          - Junction Box (362)
- StructureBoundary
  - Asset Groups
    - New
      - Cathodic (4)
        - Asset Types
          - Unknown (0)
          - Grounding Mat (101)

Tiers and Subnetworks

- Cathodic Protection
  - Added to devices
    - Decoupler
      - Unknown
      - AC Decoupler
      - DC Decoupler
    - Excess Flow Valve
      - Breakaway Fitting
    - Grounding Point
      - Unknown
      - Grounding Point
    - Relief Valve
      - Flare
      - Over Pressure Protection
      - Over Pressure and Vacuum Pressure Protection
      - Vacuum Pressure Protection
    - Short Stop (renamed to Line Stopper)
      - Short Stop (renamed to Line Stopper)
  - Added to junctions
    - Pipe Bend
      - Hot Bend
      - Cold Bend
      - Miter Bend
      - Field Bend
      - Wrinkle Bend
      - Factory Bend
    - Tap
      - Unknown

- - - Cold Tap
    - Hot Tap
    - Full Encirclement
  - Added to lines
    - AC Mitigation Wire
      - Unknown
      - Mitigation Wire
    - CP Cable (renamed from Rectifier Cable)
      - CP Cable (renamed from Rectifier Cable)
    - Linear Anode
      - Unknown
      - Horizontal Anode
      - Ribbon
    - Storage Pipe
      - Bare Steel
      - Cast Iron
      - Coated Steel
      - Composite
      - Copper
      - Ductile Iron
      - Plastic ABS
      - Plastic Other
      - Plastic PE
      - Plastic PVC
      - Reconditioned Cast Iron
- Isolation
  - Added to devices
    - Decoupler
      - Unknown
      - AC Decoupler
      - DC Decoupler
    - Excess Flow Valve
      - Breakaway Fitting
    - Grounding Point
      - Unknown
      - Grounding Point
    - Relief Valve
      - Flare
      - Over Pressure Protection
      - Over Pressure and Vacuum Pressure Protection
      - Vacuum Pressure Protection
    - Line Stopper (renamed from Short Stop)
      - Line Stopper (renamed from Short Stop)
  - Added to junctions
    - Pipe Bend
      - Hot Bend

- Cold Bend
- Miter Bend
- Field Bend
- Wrinkle Bend
- Factory Bend
  - Tap
    - Unknown
    - Cold Tap
    - Hot Tap
    - Full Encirclement
- Added to lines
  - AC Mitigation Wire
    - Unknown
    - Mitigation Wire
  - CP Cable (renamed from Rectifier Cable)
    - CP Cable (renamed from Rectifier Cable)
  - Linear Anode
    - Unknown
    - Horizontal Anode
    - Ribbon
  - Storage Pipe
    - Bare Steel
    - Cast Iron
    - Coated Steel
    - Composite
    - Copper
    - Ductile Iron
    - Plastic ABS
    - Plastic Other
    - Plastic PE
    - Plastic PVC
    - Reconditioned Cast Iron
- Pressure
  - Added to devices
    - Decoupler
      - Unknown
      - AC Decoupler
      - DC Decoupler
    - Excess Flow Valve
      - Breakaway Fitting
    - Grounding Point
      - Unknown
      - Grounding Point
    - Relief Valve
      - Flare
      - Over Pressure Protection

- Over Pressure and Vacuum Pressure Protection
- Vacuum Pressure Protection
    - Line Stopper (renamed from Short Stop)
        - Line Stopper (renamed from Short Stop)
- Added to junctions
    - Pipe Bend
        - Hot Bend
        - Cold Bend
        - Miter Bend
        - Field Bend
        - Wrinkle Bend
        - Factory Bend
    - Tap
        - Unknown
        - Cold Tap
        - Hot Tap
        - Full Encirclement
- Added to lines
    - AC Mitigation Wire
        - Unknown
        - Mitigation Wire
    - CP Cable (renamed from Rectifier Cable)
        - CP Cable (renamed from Rectifier Cable)
    - Linear Anode
        - Unknown
        - Horizontal Anode
        - Ribbon
    - Storage Pipe
        - Bare Steel
        - Cast Iron
        - Coated Steel
        - Composite
        - Copper
        - Ductile Iron
        - Plastic ABS
        - Plastic Other
        - Plastic PE
        - Plastic PVC
        - Reconditioned Cast Iron
- System
    - Added to devices
        - Decoupler
            - Unknown
            - AC Decoupler
            - DC Decoupler
        - Excess Flow Valve

- - - Breakaway Fitting
  - - Grounding Point
    - - Unknown
    - - Grounding Point
  - - Relief Valve
    - - Flare
    - - Over Pressure Protection
    - - Over Pressure and Vacuum Pressure Protection
    - - Vacuum Pressure Protection
  - - Line Stopper (renamed from Short Stop)
    - - Line Stopper (renamed from Short Stop)
- o Added to junctions
  - - Pipe Bend
    - - Hot Bend
    - - Cold Bend
    - - Miter Bend
    - - Field Bend
    - - Wrinkle Bend
    - - Factory Bend
  - - Tap
    - - Unknown
    - - Cold Tap
    - - Hot Tap
    - - Full Encirclement
- o Added to lines
  - - AC Mitigation Wire
    - - Unknown
    - - Mitigation Wire
  - - CP Cable (renamed from Rectifier Cable)
    - - CP Cable (renamed from Rectifier Cable)
  - - Linear Anode
    - - Unknown
    - - Horizontal Anode
    - - Ribbon
  - - Storage Pipe
    - - Bare Steel
    - - Cast Iron
    - - Coated Steel
    - - Composite
    - - Copper
    - - Ductile Iron
    - - Plastic ABS
    - - Plastic Other
    - - Plastic PE
    - - Plastic PVC
    - - Reconditioned Cast Iron

Domains

- Added
  - Asset_Type_Pipeline_Device_Decoupler
    - Unknown (0)
    - AC Decoupler (921)
    - DC Decoupler (922)
  - AssetType_Pipeline_Junction_Tap
    - Unknown (0)
    - Cold Tap (841)
    - Hot Tap (842)
    - Full Encirclement (843)
  - Pipeline_Tee_DesignType
    - Unknown (0)
    - Barred (121)
  - Pipeline_Flange_DesignType
    - Unknown (0)
    - Weld Neck (161)
    - Slip On (162)
    - Blind (163)
    - Threaded (164)
    - Socket Welded (165)
    - Lap Joint (166)
  - Pipeline_ReliefValve_DesignType
    - Unknown (0)
    - Pilot Operated (301)
    - Pressure Relief (302)
    - Rupture Disk (303)
    - Spring Operated (304)
    - Vacuum Relief (305)
    - Vacuum Pressure Relief (306)
  - Pipeline_Junction_Pressure_Rating
    - Unknown (0)
    - 150 (150)
    - 300 (300)
    - 600 (600)
    - 900 (900)
    - 1500 (1500)
    - 2500 (2500)
  - Pipeline_Junction_Diameter_Specification
    - Unknown (Unknown)
    - ASTM A403 (ASTM A403)
    - ASME B16.9 (ASME B16.9)
    - ASME B16.11 (ASME B16.11)
    - ASME B16.5 (ASME B16.5)
    - ASME B16.47 (ASME B16.47)

- MSS SP-75 (MSS SP-75)
  - o Pipeline_Junction_Material_Specification
    - Unknown (Unknown)
    - ASTM A105 (ASTM A105)
    - ASTM A234 (ASTM A234)
  - o Pipeline_Junction_Angle
    - Range Data Type Double from 0 to 90
  - o Pipeline_Marker_Markertype
    - Unknown (0)
    - Aerial Marker (1)
    - Pipeline Marker (2)
  - o Pipeline_Device_Pressure_Rating
    - Unknown (0)
    - 150 (150)
    - 300 (300)
    - 600 (600)
    - 900 (900)
    - 1500 (1500)
    - 2500 (2500)
- Changed
  - o Pipeline_ASTM_Manufacturer
    - New
      - Hawkeye Industries Inc (HA)
      - Aliaxis Deutschland GmbH (FT)
      - Chicago Fittings Corp (CF)
      - BROEN Inc (BM)
      - Mueller Co. LLC (MU)
      - Poly-Cam Inc (PC)
      - US Steel Corp (US)
  - o Pipeline_Girth_Weld_Type
    - New
      - Automatic Electric Weld (3)
  - o Pipeline_Commodity_Type
    - New
      - Liquid Natural Gas (13)
      - Natural Gas Liquids (14)
  - o Pipeline_Leak_Method_Detected
    - New
      - Sight (Sight)
      - Sound (Sound)
  - o Pipeline_Pipe_Diameter_Transmission
    - New
      - Unknown (0)
      - 2" (2)
      - 2.5" (2.5)
      - 3" (3)

- 3.5" (3.5)
- 4" (4)
- 4.5" (4.5)
- 5" (5)
- 6" (6)
- 8" (8)
- 10" (10)
- o Asset_Type_Pipeline_Junction_Pipe_Bend
  - New
    - Hot Bend (51) - previously 'Pipe Bend'
    - Cold Bend (52)
    - Miter Bend (53)
    - Field Bend (54)
    - Wrinkle Bend (55)
    - Factory Bend (56)
- o Pipeline_Valve_Type renamed: Pipeline_Valve_DesignType
  - New
    - Ball (40) - previously (1)
    - Butterfly (41) - previously (2)
    - Gate (42) - previously (4)
    - Globe (43) - new
    - Needle (44) - previously (5)
    - Pop (45) - previously (6)
    - Plug (46) - previously (7)
    - Stop (47) - previously (8)
    - Stop Cock (48) - previously (9)
    - V-Ball (49) - previously (10)
    - Other (50) - previously (11)

Attribute Rules

- PipelineAssembly
- Generate IDs
  - o Individual rules replaced by Generate IDs for PipelineAssembly
- PipelineDevice
  - o Generate IDs
    - Individual rules replaced by Generate IDs for PipelineDevice
- PipelineJunction
  - o Generate IDs
    - Individual rules replaced by Generate IDs for PipelineJunction
- PipelineLine
  - o Generate IDs
    - Individual rules replaced by Generate IDs for PipelineLine
  - o Asset Type Material to Material Field
    - Added Asset Type = 8 to include Storage Pipe
  - o Cathodic Protection Traceability

- - - Added Asset Type = 8 to include Storage Pipe
    - o Constrain Contingent Values
      - - Added Asset Type = 8 to include Storage Pipe
      - - Updated expression logic
- StructureBoundary
  - o Generate IDs
    - - Individual rules replaced by Generate IDs for StructureBoundary
- StructureJunction
  - o Generate IDs
    - - Individual rules replaced by Generate IDs for StructureJunction
- StructureLine
  - o Generate IDs
    - - Individual rules replaced by Generate IDs for StructureLine