



# SmartPlant Foundation Issues

**FLUOR**

**SmartPlant** ©

**Implementation Team**

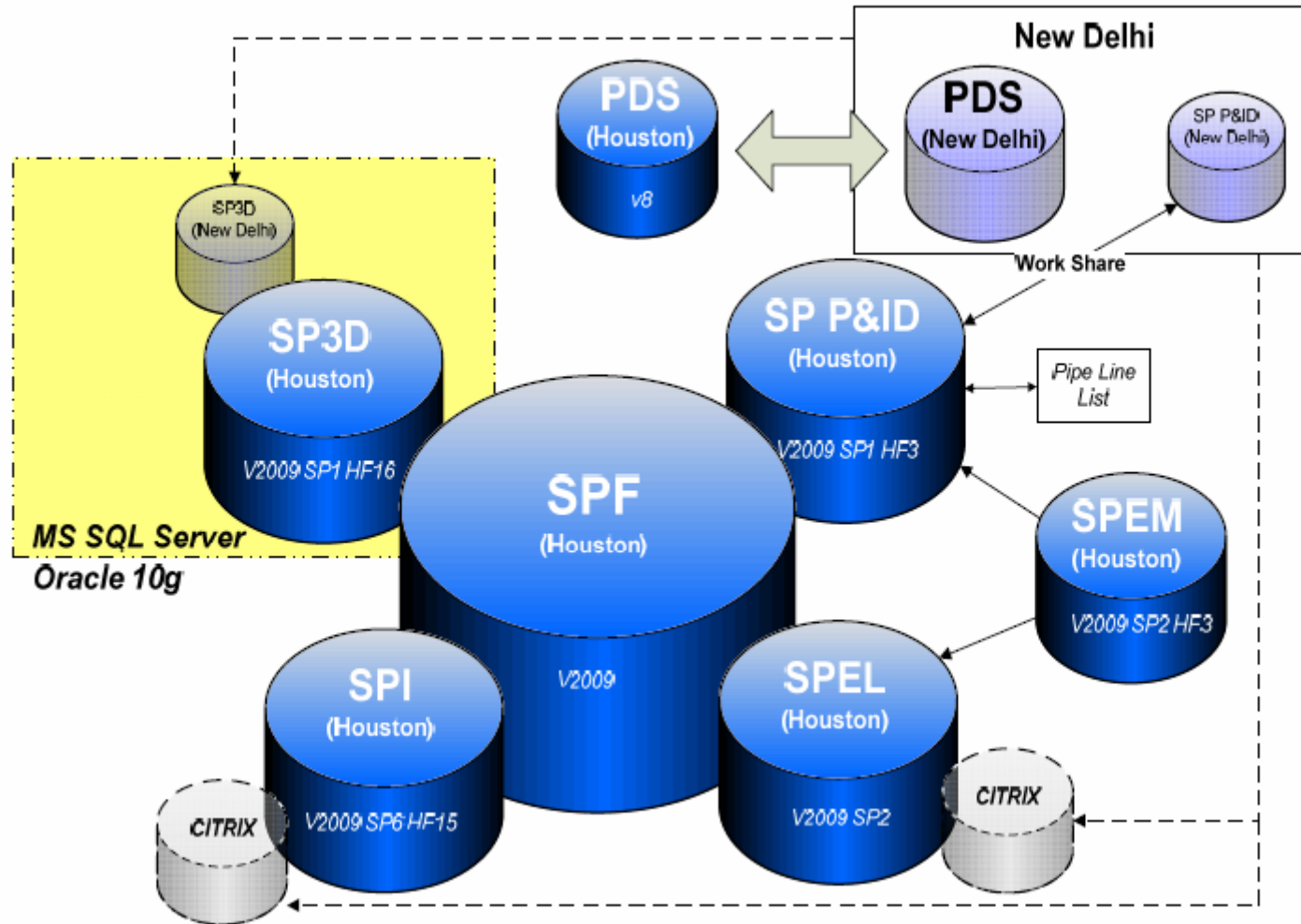


**FLUOR**®

**INTERGRAPH**



# SmartPlant Foundation Configuration



# JBOG Integration



## Plant Breakdown Structure

### Plant

name J3BG\_305

Area(s)	
name	08 56
description	Offsites (OSBL) Central Compression Area (ISBL)
Unit(s)	
name	37 37
description	JBOG Project Scope JBOG Project Scope
code	0837 5637
name	83 83
description	Utility - Firewater Utility - Firewater
code	0883 5683
name	94 94
description	Utility - Service (Fresh) Utility - Service (Fresh)

## Integration Targets

- SP P&ID Integration
  - To SPI
  - To SP3D
- SPI Integration
  - To SP3D
  - To SPEL
  - From SP P&ID
  - From SPEL
- SPEL Integration
  - To SPI
  - To SP3D
  - From SPI
  - From SP3D
- SP3D Integration
  - To SPEL
  - From SPI
  - From SP P&ID

Implemented in project 'test' database

Implemented in project 'test' database

# Key Topics

- ◆ SP3D Experiences
- ◆ Integration Experiences
- ◆ SPI Integration
- ◆ SP3D Integration



## ◆ Object Ownership Transfer

### – Pipe Runs (w/ nested objects)

- Transfer of ownership not always complete for all 'nested' objects
- Different behavior depending on method to access properties dialogue

(‘right-mouse-click’ Menu versus Edit drop-down)

- ◆ Project recovery via consolidation of all piping object ownerships back to HOST and then re-transfer to site.

# SP3D Development

- ◆ UN-DELETABLE (corrupted) Objects
  - Resolved – (for now)... still not sure what caused it.
- ◆ Clash Items showing up in To-do list
  - “Error Deleteing....”Open SR# 1-120098044
- ◆ Drawing Update Process
  - 5~30 min’s per dwg to update depending on time of day
  - Batch server not viable due to ‘instability’
    - **NEED THIS OPTION!**
  - Broken ‘linkages’ between dwgs and volumes
  - Growing concerns by project leaders over automated dimensions and annotation behavior
- ◆ Generally- Extreme slowness with SP3D
  - Up to 2 hours to generate SPR session for CCA unit



- ◆ Instrument data sheet dependency on SPF for revisions
  - Client / project document revisions based on major / minor method
  - SPI does not recognize “minor” revision value in data sheet title block
  - Custom revision scheme created just for processing of SPI data sheets.
  - Some data sheet forms did not work with SPF correctly.
    - Forms received from client / previous project data set required re-creation from scratch. This cause rework for the affected instruments to rebuild the data sheets.

# SPI Integration

- ◆ To-do list management requires specific knowledge – not easy to learn
- ◆ Inconsistent tag naming
  - Legacy ItemTag.dll versus naming utility
  - ‘plug & play’ of designers from a core pool
- ◆ We DO NOT allow any instrument tags to be created via the To-do list tasks.
  - Incorrect name rule applied (not registered to correct ItemTag.dll??)
  - Naming properties applied to incorrect object class in SPPID



# SPI Integration

- ◆ “Create” tasks in SPI To-do list that would create duplicate instrument tags in SPI
  - Method of making edits in SP P&ID impacted SPI To- do list entries
  - Delete to stockpile versus database delete for instrument objects
  - Object relationships based on OID resulting in “orphaned” relationships with correlated item in other tools.
  - Re-establishing ‘same-as’ relationship requires manual editing of SPI’s database tables containing the affected object OIDs.

# SPI Integration

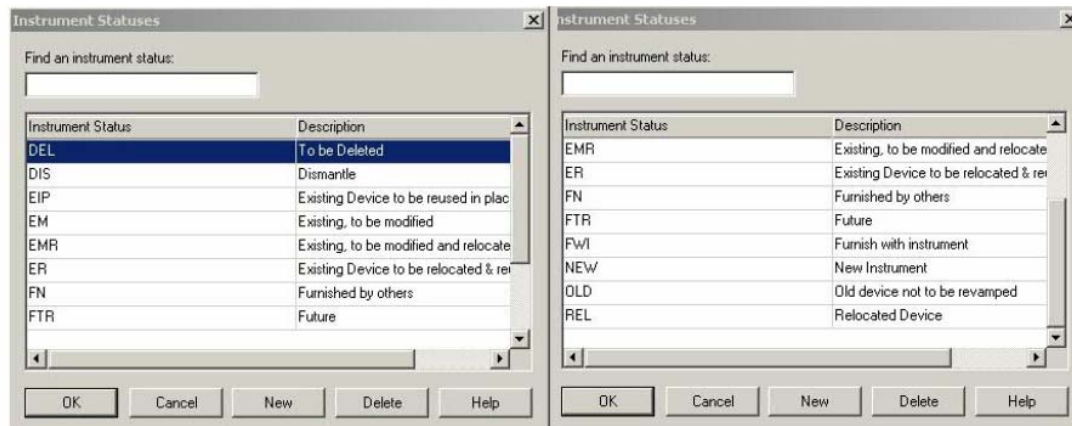


- ◆ Incorrect temperature UOM on retrieved data in SPI
  - SP P&ID Format Manager impacted UOM conversion of temperatures on publish to SPF
  - 2 different formats configured for display of temperature in SPPID depending on label being used
    - Example of -150 Celsius
      - -150 (line number labels for insulated lines only)
      - -150.0 C (for equipment data blocks only)
  - The location of a “space” in one of the two custom format style names caused a conflict with SPF’s ability to process the temperature at the baseline UOM of C (celsius) and converted it to K (kelvin)
    - SPI does not convert temperature on retrieval and sees all these incorrectly as K.
    - Not able to resolve without replacing all associated labels in SP P&ID.
  - Project proceeding by UNMAPPING process conditions into SPI.

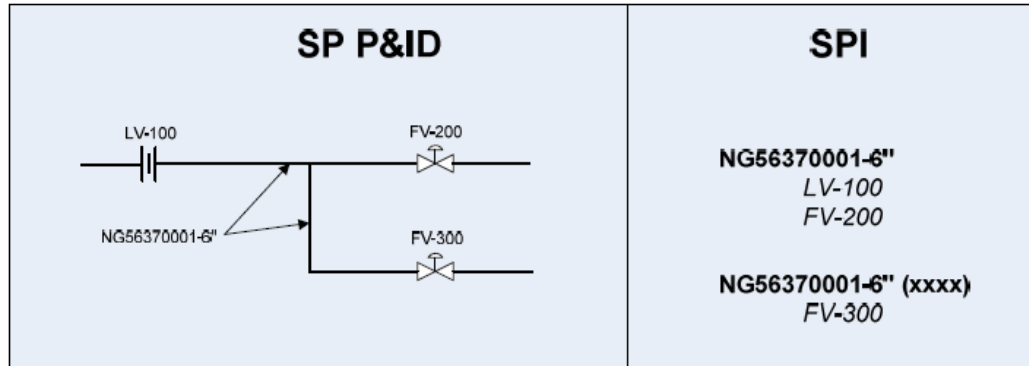
# SPI Integration

## ◆ Construction Status

- Removed from SPI retrieval mapping on JBOG
  - Not aligned between SPPID and SPI
  - SPPID = default (OOTB)
  - SPI = customized by project for detailed scope management of each instrument
- Un-realistic to expect SP P&ID designers to know what value to apply to each instrument.



# SPI Integration



- ◆ Not acceptable for segment ID to show on deliverables
  - Instrument Index
  - Instrument Data Sheets
- ◆ Removing requires manual editing in SPI to re-assign instruments (i.e. FV-300) to primary line.
- ◆ Future retrievals of P&ID trigger 'Update' To-do list tasks that must be ignored.



- ◆ DDP Data Sheets with incorrect NPD UOM
  - Random / inconsistent occurrence
  - Open SR – cause still unknown
  - Visible on Fluor custom instrument report and in SPI publish xml file
  - Requires re-toggle of end standard select list item in SPI and then re-publish and retrieve of affected DDP data sheets

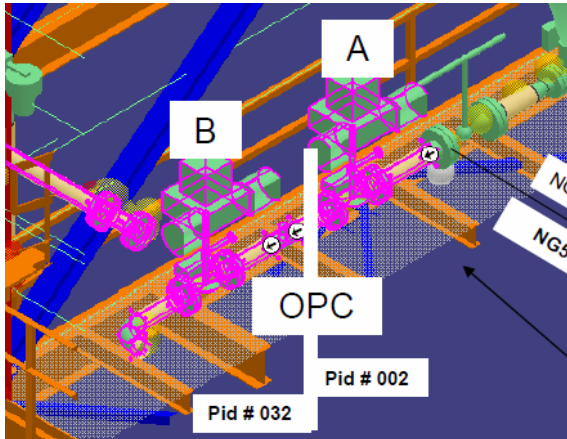


## ◆ SP P&ID correlation

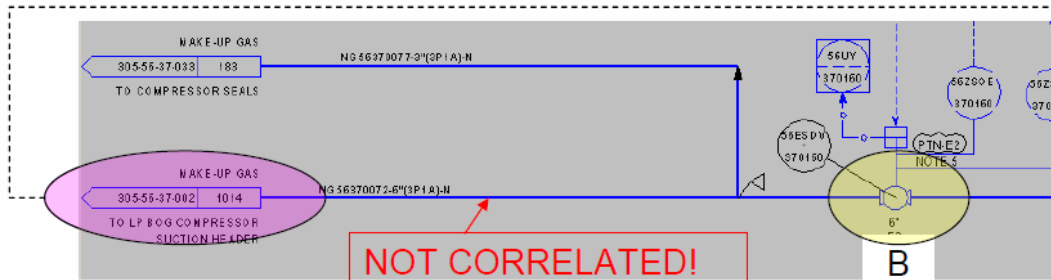
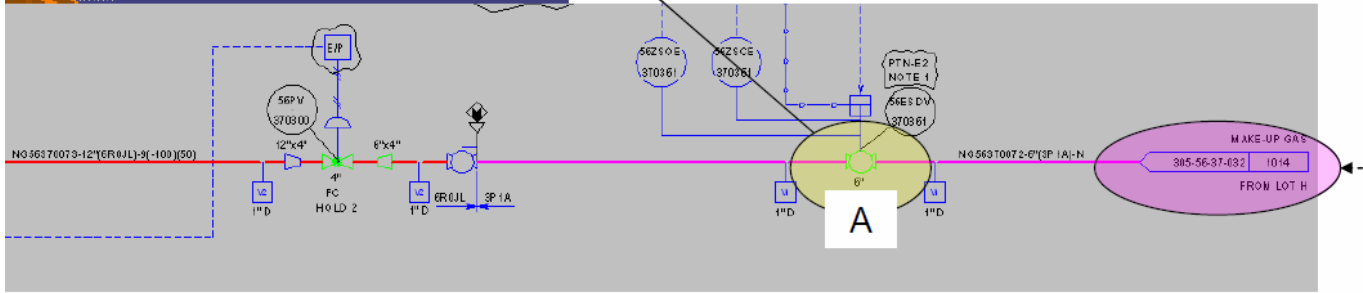
- Complicates pipeline/pipe run hierarchy
- Correlation of pipe runs does not capture all objects (i.e. reducers, flanges, etc...)
- Topology is not related to actual sequencing of objects on the P&ID
- Struggling with identifying value to project



# SP3D Integration



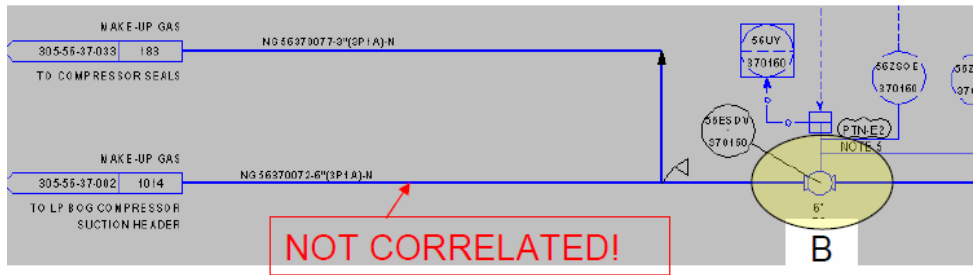
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BETWEEN 2 PIDS**





# SP3D Integration

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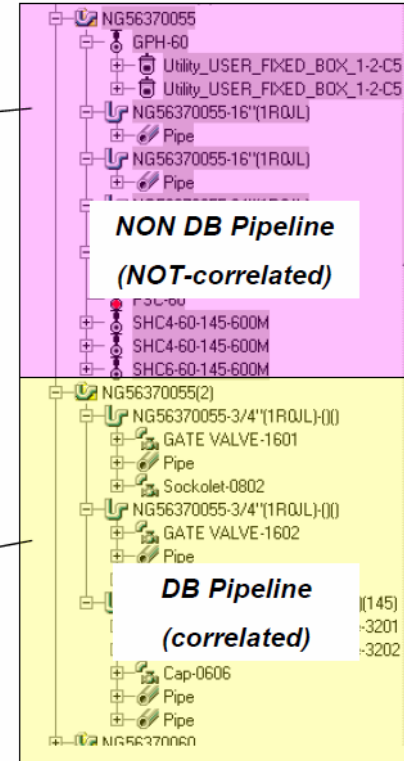
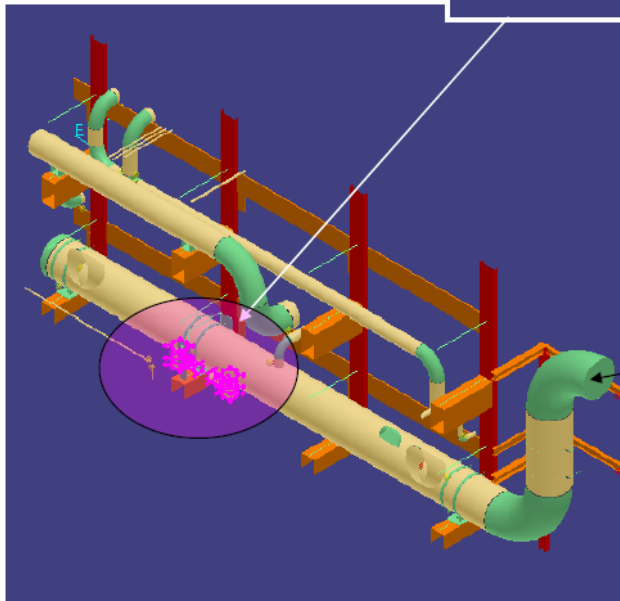
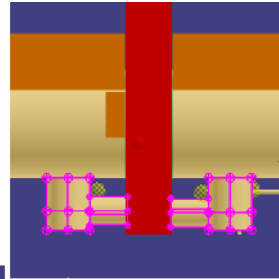
**UNABLE TO CORRELATE  
INSTRUMENT FEATURE UNTIL  
RUN IS CORRELATED FIRST**





# SP3D Integration

Custom detailed support assembly – built from components



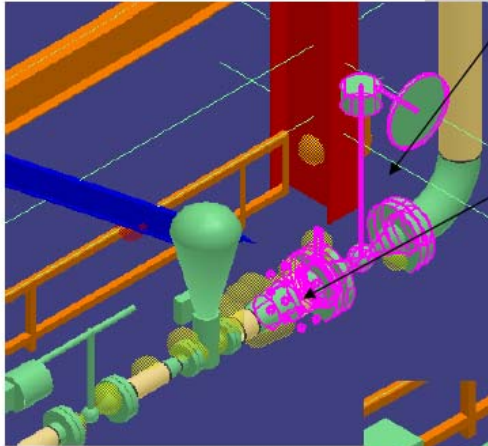
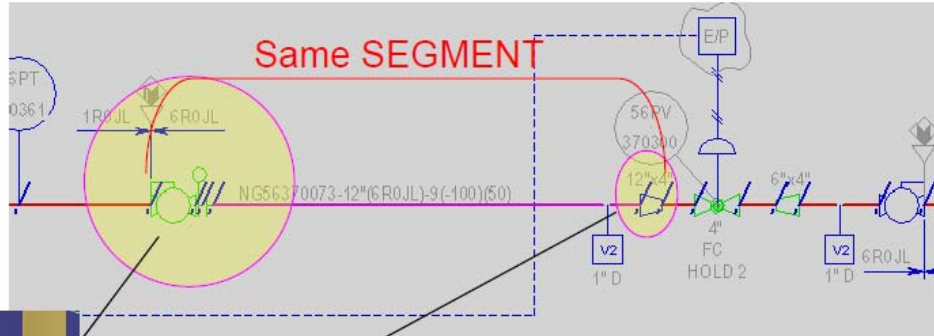
Requires manual reassignment of items from NON DB Pipeline to the DB Pipeline

- Pipe Runs
- Hangers & Supports

Switch Tasks and set select filter for correct component level – OR – can set select filter to ALL from one task



# SP3D Integration



Some features Valve, blind, reducers, and flanges are not always correlated with pipe run.

Requires manual correlation at the FEATURE level of each component

Property	Value
Name	FLANGE-4207
NameRule	DefaultNameRule
Short Material Description	FLG W/M BDR HF 304L SS 405 BDR
Long Material Description	
Pipe Run	NG56370073-12\"/>

Manual edit PARTS from MATING part to BASE part.

Required to manually break up 3D model pipe runs to match PID segments



# Questions