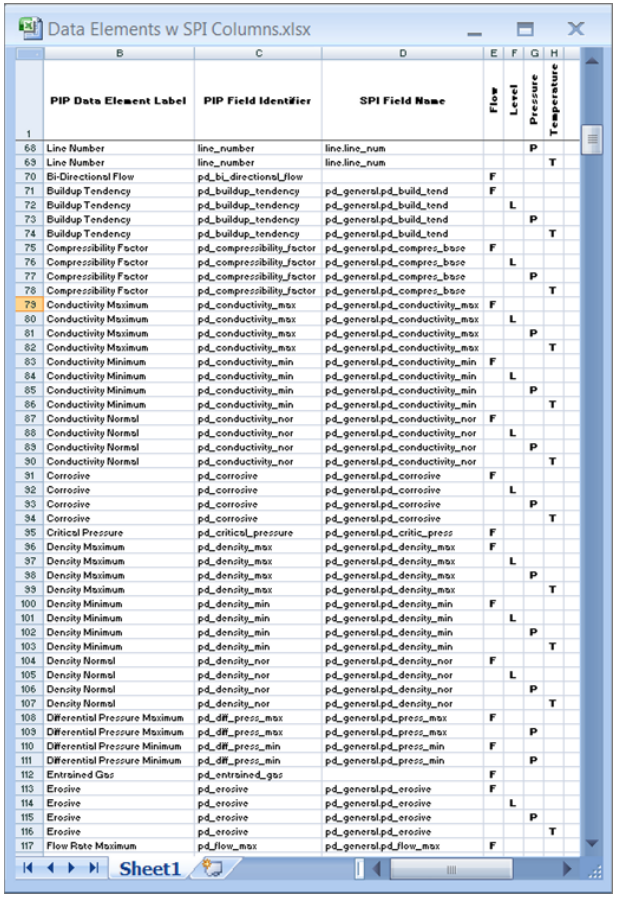
PIP DMDIM001
Instrumentation Metadata Requirements

Gene Haney, CB&I (SIG Chair)

PIP DMDIM001 Instrument Metadata Requirements

Instrument Design Tool Configuration (IDTC)

- Purpose and Method:
  - Facilitate Data Sharing
  - Create Generic Practice
  - Define a ‘Harmonized’ Mapping
  - Provide Autonomy to Each Data Contributor
  - Review industry standards (e.g., SPI, ISA, OSI, ISO, NE-100 Etc...) and incorporate instrument datasheets.
  - PIP IDTC Task Team has identified 500+ data elements associated with instrument specification data for instruments of the Flow, Level, Pressure and Temperature process functions
  - They are just now adding Control Valve data elements to the specification
  - Only 20% of theses data elements have a defined data field in the SPI schema.


Data Elements w SPI Columns.xlsx

	B	C	D	E	F	G	H
1	PIP Data Element Label	PIP Field Identifier	SPI Field Name	Flow	Level	Pressure	Temperature
68	Line Number	line_number	line.line_num			P	
69	Line Number	line_number	line.line_num				T
70	Bi-Directional Flow	pd_bi_directional_flow		F			
71	Buildup Tendency	pd_buildup_tendency	pd_general.pd_build_tend	F			
72	Buildup Tendency	pd_buildup_tendency	pd_general.pd_build_tend		L		
73	Buildup Tendency	pd_buildup_tendency	pd_general.pd_build_tend			P	
74	Buildup Tendency	pd_buildup_tendency	pd_general.pd_build_tend				T
75	Compressibility Factor	pd_compressibility_factor	pd_general.pd_compres_base	F			
76	Compressibility Factor	pd_compressibility_factor	pd_general.pd_compres_base		L		
77	Compressibility Factor	pd_compressibility_factor	pd_general.pd_compres_base			P	
78	Compressibility Factor	pd_compressibility_factor	pd_general.pd_compres_base				T
79	Conductivity Maximum	pd_conductivity_max	pd_general.pd_conductivity_max	F			
80	Conductivity Maximum	pd_conductivity_max	pd_general.pd_conductivity_max		L		
81	Conductivity Maximum	pd_conductivity_max	pd_general.pd_conductivity_max			P	
82	Conductivity Maximum	pd_conductivity_max	pd_general.pd_conductivity_max				T
83	Conductivity Minimum	pd_conductivity_min	pd_general.pd_conductivity_min	F			
84	Conductivity Minimum	pd_conductivity_min	pd_general.pd_conductivity_min		L		
85	Conductivity Minimum	pd_conductivity_min	pd_general.pd_conductivity_min			P	
86	Conductivity Minimum	pd_conductivity_min	pd_general.pd_conductivity_min				T
87	Conductivity Normal	pd_conductivity_nor	pd_general.pd_conductivity_nor	F			
88	Conductivity Normal	pd_conductivity_nor	pd_general.pd_conductivity_nor		L		
89	Conductivity Normal	pd_conductivity_nor	pd_general.pd_conductivity_nor			P	
90	Conductivity Normal	pd_conductivity_nor	pd_general.pd_conductivity_nor				T
91	Corrosive	pd_corrosive	pd_general.pd_corrosive	F			
92	Corrosive	pd_corrosive	pd_general.pd_corrosive		L		
93	Corrosive	pd_corrosive	pd_general.pd_corrosive			P	
94	Corrosive	pd_corrosive	pd_general.pd_corrosive				T
95	Critical Pressure	pd_critical_pressure	pd_general.pd_critic_press	F			
96	Density Maximum	pd_density_max	pd_general.pd_density_max	F			
97	Density Maximum	pd_density_max	pd_general.pd_density_max		L		
98	Density Maximum	pd_density_max	pd_general.pd_density_max			P	
99	Density Maximum	pd_density_max	pd_general.pd_density_max				T
100	Density Minimum	pd_density_min	pd_general.pd_density_min	F			
101	Density Minimum	pd_density_min	pd_general.pd_density_min		L		
102	Density Minimum	pd_density_min	pd_general.pd_density_min			P	
103	Density Minimum	pd_density_min	pd_general.pd_density_min				T
104	Density Normal	pd_density_nor	pd_general.pd_density_nor	F			
105	Density Normal	pd_density_nor	pd_general.pd_density_nor		L		
106	Density Normal	pd_density_nor	pd_general.pd_density_nor			P	
107	Density Normal	pd_density_nor	pd_general.pd_density_nor				T
108	Differential Pressure Maximum	pd_diff_press_max	pd_general.pd_press_max	F			
109	Differential Pressure Maximum	pd_diff_press_max	pd_general.pd_press_max			P	
110	Differential Pressure Minimum	pd_diff_press_min	pd_general.pd_press_min	F			
111	Differential Pressure Minimum	pd_diff_press_min	pd_general.pd_press_min			P	
112	Entrained Gas	pd_entrained_gas		F			
113	Erosive	pd_erosive	pd_general.pd_erosive	F			
114	Erosive	pd_erosive	pd_general.pd_erosive		L		
115	Erosive	pd_erosive	pd_general.pd_erosive			P	
116	Erosive	pd_erosive	pd_general.pd_erosive				T
117	Flow Rate Maximum	pd_flow_max	pd_general.pd_flow_max	F			

Sheet1

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- Houston SPI LTUF is conducting a IDTC Special Interest Group with the following plan of action:
  1. Identify data elements from list that exist in SPI
  2. Review, consolidate, expand list of data elements not in SPI
  3. Assist in developing the Control Valve data elements to the IDTC
  4. Provide feedback to the PIP DMDIM001 IDTC committee
  5. Provide recommended schema changes to Intergraph
- The Special Interest Group (SIG) was formed to review the 'missing' fields and make a recommendation to Intergraph pending rebuild of the Spec Module in SPI
- The SPI was introduced to Hexagon PPM at HxGN 2017 in Las Vegas and received with much interest:
  - The SmartPlant Instrumentation Spec Module is undergoing a major update to eliminate the need for Infomaker
  - Hexagon is driving an initiative to include WEB API's for external integration in all the tools and this requires a structured Data Dictionary as the bases of all Spec Sheets

PIP DMDIM001 Instrument Metadata Requirements

- Current Houston SPI LTUF SIG Members:
  - Gene Haney, CB&I (SIG Chair)
  - Bob Zerda, PIP
  - Alex Koifman, F.I.R.S.T. CONVAL
  - Betty Alexander, JGC
  - Chris Cordes, Covestro
  - Guillermo Vigna, Endress+Hauser
  - John Dressel, Fluor
  - Kory Johnson, Marathon
  - Nezar Faitouri, Mangan, Inc.

- The efforts of this SIG are ongoing and intended to bring more consistency to the SPI Spec Data Dictionary and PIP DMDIM001
- Gene Haney is seeking more members and participation in the SIG