

SmartPlant Instrumentation Technical User Forum P2C2 (Houston SPI TUF) Meeting		August 12, 2014 8:00 am Fluor Engineering
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Attendees	44 Members in attendance 20 Online Connections	Copied To	Houston SPI LTUF Website
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Called By	John Dressel	Prepared By	Betty Alexander, Andrew Kunev & John Dressel
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Item	Topic	Notes	Action/Due
1	Welcome	Welcome to Fluor & Safety Moment Jim Vollmar, Fluor	
2	Chairman's Notes	John Dressel, Fluor <ul style="list-style-type: none"> Announced HxGN 2014 and Global TUF meetings in Las Vegas Minutes from prior meeting were approved. Introductions were done. 	
3	Presentation	Product Update & Vendor Interfaces Guy Masin, Intergraph SPI Version 2013 <ul style="list-style-type: none"> Integration Enhancements <ul style="list-style-type: none"> Publish of large SPI dataset Capability to publish instruments from plant level (not only unit) Improve performance when publishing / retrieve documents Revise multiple Spec Sheets in SPI in integrated environment Eliminate the creation of meaningless "update" tasks in the To Do List Approving Inconsistencies in the To Do List Add Ability to Customize, Sort and filtering Data in the To Do List. Access Rights <ul style="list-style-type: none"> Added separate access rights to most Instrument Index supporting tables P&ID table excluded from access rights Units of Measure <ul style="list-style-type: none"> User created new Units of Measure New Units of Measure can be used in Calculations and Spec Sheets Intergraph will only be responsible for existing UOM accuracy General Enhancements New As-Built O/O mode interface SPI 2013 will support Oracle 11 but not Oracle 10g Verbal comment from Guy suggests that Intergraph Does Listen to LTUF requests. - "LTUF inputs will be taken very seriously." SPI Version 2015 <ul style="list-style-type: none"> To be released Q4 of 2014 	

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		<ul style="list-style-type: none"> • As-Built Module has been totally revamped <ul style="list-style-type: none"> ○ Changed To-Do List, more user-friendly ○ All calming and merging is done from within SPI with users in the database ○ Improve the visibility and the management of the Items that are copied to / from a Project. ○ Remove the constraint of multi users operations when data is merged. • The SPI Query Builder <ul style="list-style-type: none"> ○ Enables users to create Queries without SQL knowledge ○ It is simple to use and provides engineering and design context ○ Users can save queries to libraries in the Reference Explorer ○ The Queries are used as templates that will be used in order to create reports in the EDE views by retrieving data from the database (instead of Custom Views). ○ Query templates will support: <ul style="list-style-type: none"> ▪ Searches ▪ Integration ▪ Spec forms ▪ PD forms ○ There is no need for 3rd party software (Infomaker) to create new queries. • SPI Engineering Data Editor (EDE) <ul style="list-style-type: none"> ○ EDE is replacing browsers in all SP applications ○ Includes Predefined Views ○ Allows cross module Views ○ Views can be in a floating window ○ Views can be sorted, filtered, grouped and searched ○ Cut and Paste functions can be single or multi cell ○ Supporting Tables can be edited from the EDE view ○ All EDE views adhere with user rights ○ Right Click menus work in EDE as in Browsers <p>Q: What software are you using to view P&ID in SPI A: SmartPlant P&ID</p> <p>Q: What version of SPF is compatible with SPI 2015? A: No changes to compatibility to SPF, only changes to SPI</p> <p>Q: How does query builder work? A: Graphical or Option of SQL commands</p> <p>Vendor integration</p> <ul style="list-style-type: none"> • Vendor integration is improved in 2015 • Vendor Interface to be normalized across tools • Easer data mapping • Intergraph is working with several vendors to develop interfaces like DCS interfaces • Instrument Vendor interfaces at the Spec level <p>Q: Any specific vendors? A: Guy is already working with a few vendors, and future</p> 	

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		<p>ones are welcome</p> <p>Comments: LTUF happy with idea and new direction for SPI 2015 and Instrumentation Vendor interfaces.</p>	
4	Presentation	<p>SPI @ HxGN LIVE 2014 John Dressel, Fluor</p> <p>HxGN LIVE PP&M Global TUF 2014</p> <ul style="list-style-type: none"> • SmartPlant Instrumentation, Electrical & P&ID Combined TUF <ul style="list-style-type: none"> ○ 8:00 Intro (John Dressel, Scott Hendrickson and Joe Lawrence) ○ 8:15 Smart Cable Management – Luther Walke, Intergraph ○ 8:45 Smart Support Introduction – Rick Simmons, Intergraph ○ 9:00 Intergraph Smart Cloud Overview – John Kellett, Intergraph ○ 9:15 LinkedIn Technical User Forums – Nicole Brlek, Intergraph ○ 9:30 SmartPlant CR Ranking Website – Dennis Cooley, Cooleycore ○ 10:00 SmartPlant Brain Storming Round Table ○ 12:00 Lunch & Networking <p>SmartPlant Instrumentation Global TUF</p> <ul style="list-style-type: none"> • Sun 06/01/2014 PP&M Breakout Sessions • SmartPlant Instrumentation Global TUF • 1:00 Opening remarks (John Dressel, SPI TUF chair) • 1:15 SmartPlant Instrumentation Owner Perspective (Guy Masin) <ul style="list-style-type: none"> ○ SmartPlant Instrumentation Then – 2009 support ○ SmartPlant Instrumentation Now – 2013 and 2015 ○ SmartPlant Instrumentation Future – 2016 and beyond • 2:00 SPI Operations Perspective (Dennis Cooley) <ul style="list-style-type: none"> ○ Introduced BeaconSuite Software • 2:45 SmartPlant Integration Perspective (John Dressel, Fluor) • 3:15 SPI 2015 Beta Perspective (Ahmed Esaklul, CB&I) • 3:45 Forum discussion on Specific SPI Topics <ul style="list-style-type: none"> ○ Toward SmartPlant Instrumentation 2015 ○ SPI and other Intergraph Smart Tools ○ SmartPlant Foundation Integration ○ Owner Operator SPI Experiences <p>Intergraph @ HxGN LIVE 2014</p> <ul style="list-style-type: none"> • Mon 06/02/2014 <ul style="list-style-type: none"> ○ 7:00 - Conference Registration Opened ○ 8:00 - 12:00 Morning Paid Training - by Intergraph ○ 1:00 - 5:00 Cable Management & Integration with SP3D ○ 5:30 - 8:00 Press Play Reception @ MGM Pool • Tue 06/03/2014 <ul style="list-style-type: none"> ○ 8:00 - 9:00 HxGN Hexagon Keynote ○ 11:00 - 12:00 SmartPlant Cloud Update ○ 4:00 - 4:30 SmartPlant Instrumentation: ESL Symbols ○ 4:30 - 5:00 Supporting the Owner/Operator Mode ○ 5:30 - 8:00 Reception in the Zone Expo or Speakeasy 2015 Rollout Party 	

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		<ul style="list-style-type: none"> • Wed 06/04/2014 <ul style="list-style-type: none"> ○ 8:00 - 9:00 HxGN Intergraph Keynote ○ 11:00 - 12:00 SmartPlant Construction: Integration at Fluor ○ 1:00 - 1:30 SmartPlant P&ID: Integration at Fluor Canada ○ 1:30 - 2:00 SP Engineering Implementation at INELECTRA ○ 4:00 - 3:00 SPI 2015: User Experience CB&I • Thu 06/05/2014 <ul style="list-style-type: none"> ○ 11:00 - 11:30 Integration of SmartPlant P&ID with SPI ○ 11:30 - 12:00 SmartPlant Instrumentation Work share ○ 1:30 - 3:00 SmartPlant E&S Product Update • HxGN 2015 Next Year - Las Vegas June 1-4 	
5	Presentation	<p>SPI Brainstorming Session John Dressel, Fluor</p> <p>Smarter Cable Management</p> <ul style="list-style-type: none"> • Cable management is undergoing some major changes in the new versions of SmartPlant Electrical, Instrumentation and 3D. What direction should cable management be taking? <ul style="list-style-type: none"> ○ What applications should most Cable Management be done? <ul style="list-style-type: none"> ▪ SmartPlant Electrical (5%) ▪ SmartPlant Instrumentation (75%) ▪ SmartPlant 3D (10%) ○ From what applications should Cable integration be provided? <ul style="list-style-type: none"> ▪ SmartPlant Electrical (5%) ▪ SmartPlant Instrumentation (50%) ▪ SmartPlant 3D (5%) ○ To what applications should raceway data be published from SP3D? <ul style="list-style-type: none"> ▪ SmartPlant Electrical (10%) ▪ SmartPlant Instrumentation (25%) ▪ Both SPI and SPEL (50%) <p>Smarter Vendor Data Content</p> <ul style="list-style-type: none"> • The handling of Vendor Data and other external documents by SmartPlant is an ongoing issue. What direction should Intergraph take in the management of SPI Vendor Data? <ul style="list-style-type: none"> ○ What is your preferred method for receiving Vendor data? <ul style="list-style-type: none"> ▪ Electronic Documents (5%) ▪ Electronic Data (75%) ▪ ISO15926 Compliant Data (5%) ○ What type of Vendor Data should be integrated with SPI? 	

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		<ul style="list-style-type: none"> ▪ Sizing & Selection Data (15%) ▪ Dimensional Data (25%) ▪ Certified Vendor Data (25%) ○ What is your preferred source for Vendor Data? <ul style="list-style-type: none"> ▪ Vendors Standard Delivery Method (1%) ▪ SmartPlant Material or Foundation (5%) ▪ Single Source Provider (Thomas.net) (20%) <p>Smarter Automation</p> <ul style="list-style-type: none"> • The ability of SPI to introduce a level of Automation to the Engineering and Data management work processes adds value to the software. What SPI Automation functions are important? <ul style="list-style-type: none"> ○ Besides Integration, What is the most important Automation function? <ul style="list-style-type: none"> ▪ Speed up Data entry (10%) ▪ Import / Export of Data (25%) ▪ Rule based Data Validation (25%) ○ Does your company use any of the following Rule Managers? <ul style="list-style-type: none"> ▪ SmartPlant Instrumentation Instrument Type Profile (75%) ▪ SmartPlant Instrumentation Rule Manager (5%) ▪ SmartPlant P&ID Rule Manager (10%) ○ What should Intergraph's focus be for future Automation? <ul style="list-style-type: none"> ▪ Data Integrity (15%) ▪ Data Integration (25%) ▪ Data Editing and Loading (25%) <p>Viewing Engineering Data</p> <ul style="list-style-type: none"> • Intergraph has several tools with which to view and report on the Engineering Data – What tools would you like to see enhanced <ul style="list-style-type: none"> ○ What format would you like to view engineering data? <ul style="list-style-type: none"> ▪ Table or Browser Interface View (20%) ▪ Graphical Interface View (10%) ▪ Combination View (50%) ○ What platform would you like to use to view engineering data? <ul style="list-style-type: none"> ▪ Secure Networked Computer Connections (15%) ▪ Web Based Computer Connections (50%) ▪ Mobile Devices (5%) ▪ (All of the above 90%) ○ What tools do you use to view or report engineering data? 	

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		<ul style="list-style-type: none"> ▪ SmartPlant Instrumentation (95%) ▪ Database Query (25%) ▪ Database Export (25%) <p>Smarter User Interfaces</p> <ul style="list-style-type: none"> • The Editing capabilities of the SPI is important to the user when to use the tool effectively - What are your thoughts about the existing and upcoming Editing Interfaces? <ul style="list-style-type: none"> ○ What is your preferred User Interface for editing SPI data? <ul style="list-style-type: none"> ▪ Excel Type Browser (35%) ▪ Dialog Screen (WYSIWYG) (0%) ▪ Query Builder (15%) ○ What should Intergraph's path forward be for SPI User Interfaces? <ul style="list-style-type: none"> ▪ Explorer Based (5%) ▪ Browser Based (25%) ▪ Common User Interface (25%) ○ What Functions should be part of an Editing SPI User Interface? <ul style="list-style-type: none"> ▪ Import - Export Tools (5%) ▪ Report Generation (25%) ▪ Management of Change (45%) 	
6	Presentation	<p>New Functions of SPInspector Louis Trujillo & Nezar Faitouri, Mangan</p> <ul style="list-style-type: none"> • SPInspector <ul style="list-style-type: none"> ○ A software empowerment tool designed to provide a full, real-time assessment of the SPI database; allowing for an efficient approach to validate your data. ○ The software allows for the connection to an SPI Domain, and the location and file-format of result files (MS Excel or CSV). ○ Database Connections are Oracle 10, and 11 or MS-SQL 2005 and 2008. ○ Compatible with SPI 2007, 2009, and 2013 ○ The SPI schema name and password could be the overall SPI schema name and password or a project schema name and password. ○ Output Format is CSV or Excel: <ul style="list-style-type: none"> ▪ CSV: Each query will have an individual file ▪ Excel: Sub-Group queries are saved in one file with multiple sheets • SPInspector Benefits <ul style="list-style-type: none"> ○ Automate Process ○ Streamline Inspection Method ○ Faster & More Accurate ○ Reduces Workload ○ Improves Quality 	

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		<ul style="list-style-type: none"> ○ GUI Interface Simplifies Access for Continuous Inspections ○ Protect DB Integrity & Avoid Corrupting Existing Data ○ Standardized Approaches ○ Gain Capability ○ Over 250 Inspection Criteria ○ Automation Extends Inspection Volume ○ Custom Module allows Customization ○ Constantly Evolving Product <ul style="list-style-type: none"> ● Validate & Trust your Data <ul style="list-style-type: none"> ○ Keep your SPI Database Synchronized with your plant ○ Maximize Engineering Value ○ IDENTIFIES: <ul style="list-style-type: none"> ▪ Duplicate Data ▪ Wiring Functionality ▪ Missing Required Fields ▪ PAU Inconsistencies ▪ Project Data Status ▪ SPI Report-Data Accuracy ▪ Unsynchronized SPI ESL ID's ○ Inspect project work prior to merge to ensure Data meets As-Built standards ○ Avoid problematic troubleshooting that come with bad merges ○ Gain the quick access to know the condition of project data real-time <p>Q: Tool focused on O/O, how does it help E&C's A: Wiring rules</p> <p>Q: Do you have MOC in place? A: Working on it</p> <p>Q: What happened to the "Percent Complete" initiative? A: Still working on it</p>	
7	Presentation	<p>Populating the DDP Default Library Ron Jackson, Fluor</p> <ul style="list-style-type: none"> ● Engineering Data Re-use <ul style="list-style-type: none"> ● Previous project information sufficient as "Preliminary". ● Library built from past projects. Kept in Excel. ● Less data entry by designers. ● Quicker transfer to piping for preliminary iso's. ● Default Dimensional Data <ul style="list-style-type: none"> ● "This feature enables you to store and manage preliminary dimensional data for your instrumentation design. You can use standard (default) dimensions of known manufacturers who are likely to supply the instruments. This Default data is stored in the Default Library which allows you browse through the data, modify it, and copy it to the Working data as needed. Once sufficient Default data is available, the DDP designer can provide this data to the piping designers for their preliminary design. The Default data will then be replaced or modified according to the actual dimensional 	

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		<p>data received from the manufacturers.</p> <ul style="list-style-type: none"> • Note that you must first define the appropriate dimensional group, the process connection data, and the manufacturer before you can start entering default data. Remember that only one set of default dimensional data can exist for a domain.” • Default vs. Vendor Libraries <ul style="list-style-type: none"> • Default Library - Store and manage preliminary dimensional data for your instrumentation design. You can use standard (default) dimensions of known manufacturers who are likely to supply the instruments. • Vendor Library - Store and manage certified vendor dimensional data. Vendor data is used for data validation and verification purposes of dimensional data for piping design. You use Vendor data to certify the Working data prior to its release to piping. • Building MS Excel Libraries <ul style="list-style-type: none"> • Previous project information saved as MS Excel. • Dump added to library MS Excel file. • Separate tabs for Imperial and Metric. • Separate files for each Group. • Importing to Default Library <ul style="list-style-type: none"> • Creating the import link • Mapping the import fields • Some “tweaking” may be necessary • Clearing of Default library recommended at EOP <p>Q: Does DDP require an additional license? A: Intergraph has no plans to make it free</p> <p>Q: Relief Valve problems? A: Need to switch inlet and outlet dimensions, so valves can be placed in the model in the proper direction.</p>	
8	Presentation	<p>SPI Backup via Remote Terminal Mitch Fortey, Fluor</p> <ul style="list-style-type: none"> • Data Backup 101 – Why do we backup data? <ul style="list-style-type: none"> • Computer systems can fail (hardware, power, com links, etc.) • Users make mistakes or inadvertently annihilate data...OMG!! • Clients want watcoms for import, statusing or progress payments. • SPI world vs. the IT world <ul style="list-style-type: none"> • Most companies have an IT network system policy that requires scheduled data backup with offsite storage for catastrophic failures, legal requirements, information security and because “it makes sense”. This backup would occur at the server level (Oracle, SQL Server, etc.) • The SPI Administrator may have similar concerns as the IT department but specific to SPI and to a particular project. 	

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		<p>Therefore, we use the backup functions which reside in the SPI Admin Module. A backup can also be used to “reset” a DB when a user has corrupted or over-written valuable data in SPI.</p> <ul style="list-style-type: none"> • Remember there is no “UNDO” command in SPI (not yet anyway). • SPI offers 3 backup models OOTB (see SmartPlant Instrumentation Administration User’s Guide – Section 4): <ul style="list-style-type: none"> • Backup a Domain – Backup an existing domain (one at a time) on the Oracle or SQL server and then backup to the repository (a stand alone file) called Intools_backup.db which is a Sybase Adaptive Server Anywhere DB. To open the DB stand alone you need a full version of SASA software and you need to rebuild Stored Procedures & Triggers. • Backup a Domain from the Command Line – Does not utilize the SPI Admin module. Works via batch file from a “DOS like” command prompt. See SPI Admin User’s guide for unique requirements and features. • Backup a Domain in Thin Client Mode (Citrix) - Does not utilize the SPI Admin module. Works via batch file from a “DOS like” command prompt (on the Citrix server). Can require a copy of the Intools.ini file on the host server. This method can be slow based on the connection. See SPI Admin User’s guide for unique requirements and features. • We will look at the first method - but using a Remote PC Terminal. <ul style="list-style-type: none"> • Important basic backup criteria to be aware of for SPI: <ul style="list-style-type: none"> ○ Make several copies of the OOTB Intools_Backup.db file. Backups are a “one shot” deal. You cannot overwrite a file. ○ Backups are SPI version AND Service Pack specific. ○ The domain backup name, the Domain schema name and the password are all “Intools_backup.” This cannot be changed. ○ In the target DB, the Domain TYPE is the same as the Source DB. ○ Trim Audit Trails before you backup the DB to backup Audit Trail data. ○ SPI creates an error log file (InitLog.txt) in the SPI home folder. ○ You cannot backup a domain in Window Vista/Windows 7 if the User Account control is set to “ON”. Temporarily set the control to “OFF” to do the backup. • Remote Desktop Connection <ul style="list-style-type: none"> • Remote Desktop Connection (formerly Microsoft Terminal Services Client) is a technology that allows you to sit at a computer (sometimes called the client computer) and connect to a remote computer (sometimes called the host computer) in a different location. This technology come installed as a component of MS Windows and is located under the Start button > All Programs > Accessories > Remote Desktop Connection. See Microsoft Helps for more information and/or see this excellent video link 	

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		<p>http://windows.microsoft.com/en-us/windows7/help/videos/remote-desktop-connection#tab=networking</p> <ul style="list-style-type: none"> • Other remote connectivity methods are available. • Basic requirements for Remote Desktop connectivity: <ul style="list-style-type: none"> • The remote (host) machine must be enabled (configured for remote access). • The (client) Windows user's profile (RAS) must be in the Admin Group on the host machine (see graphic next slide). • The remote machine cannot go to "sleep" and must remain on at all times for client access - or the user cannot login. • The SPI Admin module must be installed on the host machine. • You need to know the "name" of the host machine. • Double click on the Remote Desktop connection icon. • Confirm login data and machine name. Use your normal network User ID and password to login. • Sometimes the PC's Identity cannot be validated by the installed certificate. Click Yes to proceed and permit the login to continue. • A Firewall security screen may appear. Click OK to continue. • Next you see the desktop of the remote (host) PC on your screen. Run the SPI Admin Module AS the Administrator. • Login to the Admin module as the DBA administrator then Login as the System Administrator. Select the File > Backup pull down. <p style="margin-left: 40px;">Note: this menu option is only available once per session for selection. If for some reason you select Backup... and then cancel out of the box you will need to Close the System Administration session and open it again (do not log completely out of SPI). Command unavailability is indicated by Backup... being grayed out.</p> • In the backup Repository window click on the Browse... button to access the existing default backup file DB. • Navigate to the location of the master Intools_backup.db file (here it is under the "Backups" folder shown below (left – not highlighted). Copy the file to a new location (here "Current Backups" folder). • Connect to the DB. After a moment the Backup Domain window opens. • The Server: and Database name: populate automatically. Select the proper Domain and if needed check appropriate boxes for additional functions. Select OK to continue...The Backup Information window opens... • Backup times vary. When the backup is complete (100%) select the Close button. • Exit the SPI Admin Module. • The Intools_backup.db file is on the host server C: drive. • Copy and move the file to a network transfer folder. Zipping the file will speed the process. Leave the original file on the host machine and copy and extract the .zip file to the network share. Then rename the files. 	
9	Presentation	SPI MOV Profile Wiring Tricks	Mitch Fortey, Fluor

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		<ul style="list-style-type: none"> • MOV's (Motor Operated Valves) have always posed a unique problem for wiring in SPI from a signal origination stand point. As a "multiplexed" signal source MOV's require multiple I/O type terminations and cannot be generated by conventional Profile builds in SPI. • Following is one method for creating a wiring Profile to overcome this issue. • Start with a simple "raw" MOV build and work within the Domain Explorer. • Duplicate apparatus under the Group and add/delete and name terminals and apparatus headers as required. • Experiment with the naming and view it in the Connections window to make sure it is legible and fits properly. • Apparatus strips have a character limit of about 10 characters before the text starts to overrun the Report Layout. In Connections view the text is truncated. • Experiment with the presentation. If dealing with many connections on one apparatus, start small. Example - a 4-pr cable was used with miscellaneous terminals configured) • Signal propagation was assigned to all the wires but a device panel only has ONE signal to offer. You cannot assign multiple signals to a single device panel. • Do not create ant device panels or cables for any other tags in the MOV loop (ZSO, EYC, Etc...) - If they exist, delete them. • Getting the cables to land on the correct terminal • Work from the perspective of the first terminal on the strip • It may be necessary to flip the order on some signals so (-) WH connects then (+) BK • The final profile build w/ device panel and 12-pr cable. Note: There is NO signal propagation. Signals for each tag will need to be assigned manually. 	
10	Forum Topics	<p style="text-align: center;">Forum Topics All Attendees</p> <ul style="list-style-type: none"> • SmartPlant Instrumentation Version 2015 <ul style="list-style-type: none"> ○ How many are beta testers? Fluor had issues installing Beta Test and still has issues finding license server. ○ EDE will need upgrade training for all users as it is a complete change in User Interface ○ Will require Roll-out on new projects and upgrade on existing projects • SmartPlant Instrumentation Integration <ul style="list-style-type: none"> ○ How many do integration? - 5% show of hands ○ How many want integration? - 50% show of hands ○ SPI Integration has issues: ○ Out of the Box does not work ○ IntoolsEf.db seed has Instrument Type profiles that do not work with SPI ○ P&ID is the source database bur abbreviated symbology and drafting short cuts cripple data integration ○ True integration is data in one place and referenced from other tools - not moving data from one tool to another ○ Foundation is getting better. 	

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		<ul style="list-style-type: none"> • SmartPlant Instrumentation Vendor Interfaces <ul style="list-style-type: none"> ○ Emerson has a lot of interfaces compared to other vendors. ○ SPI External Editor is used extensively by Fluor and sent to vendors with detailed instructions. ○ Mult-tag datasheets can't be imported back through External Editor. ○ SPEC DD has to be set-up properly for External Editor to work. • SmartPlant Instrumentation Cable Management <ul style="list-style-type: none"> ○ SPI requires a lot of manual entry for cable management to work, ○ Currently Fluor passes cable requirement to Electrical Dept for cable management. ○ SPI 2015 should have same capability for cable management as SPEL and SP3D. • Other SmartPlant Instrumentation Topics <ul style="list-style-type: none"> ○ SmartPlant Construction is being rolled out at Fluor for Pilot projects. ○ SPC requires a lot of data from all the Engineering tools, including Process Safety and Hazops. 	
11	Close	<ul style="list-style-type: none"> • Next meeting will be on November 12, 2014 • John Dressel closed meeting 	