

SmartPlant Instrumentation Technical User Forum P2C2 (Houston SPI TUF) Meeting		February 10, 2015 8:00 am Jacobs Engineering
---	--	---

Attendees	34 Members in attendance 27 Online Connections	Copied To	Houston SPI LTUF Website
------------------	---	------------------	--------------------------

Called By	John Dressel	Prepared By	Betty Alexander, Andrew Kunev & John Dressel
------------------	--------------	--------------------	--

Item	Topic	Notes	Action/Due
1	Welcome	<p>Welcome & Safety Moment John Bolmanski, Jacobs</p> <p>Jacobs Safety Presentation</p> <ul style="list-style-type: none"> • Health and Safety Policy • Visitor Arrival and Departure • Emergency Contact Numbers • Non-Emergency Contact Number • Evacuation Routes • Parking Garage • Safety Reminders 	
2	Chairman's Notes	<p><u>John Dressel, Fluor</u></p> <ul style="list-style-type: none"> • GTUF May 30, 2015 @ MGM in Las Vegas • HxGN 2015 June 1-4, 2015 @ MGM in Las Vegas <p><u>Officers Reelected</u></p> <ul style="list-style-type: none"> • John Dressel, Chairman • Gene Haney, Vice Chair • Betty Alexander, Secretary <p><u>Minutes from prior meeting were approved.</u></p> <p><u>Introductions</u></p> <ul style="list-style-type: none"> • Companies represented: Intergraph, Parsons, Fluor, EDG, S&C FW, Invista, AMEC/FW, Bechtel CB&I, Technip, Magan, EDG, Worley Parsons, Honeywell, Invista, Woodgroup Mustang, Overload Services Inc. • We had 27 online connections 	
3	Presentation	<p>SPI 2015 Product Update Blake Biernacki, Intergraph</p> <ul style="list-style-type: none"> • SPI2015 Presentation quoted to be same (mostly) to the one given in November 2014 (see previous minutes & online copy of ppt at Website: http://spi-ltuf.org) • New UDF/UDT Editor • User Defined Tables are defined in the Administration Module • User Defined Tables content can be edited in SPI • User Defined Fields are defined in the Administration Module • A new Field Type now allows a Select List to be defined to a User Defined Field edited in the Administration Module • The User Defined Field Select List can be used as an attribute in the Query Builder for EDE 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> ▪ Query Builder - allows users to create personalized queries from SPI <ul style="list-style-type: none"> – Replaces the need for Infomaker – In future plans to expand beyond the platform to other modules of SPI, as well for other SmartPlant applications ▪ Item Type Explorer allows selection of tables to build a query from ▪ Relationships are automatically created between Item Types ▪ The Attribute Explorer allows the selection of properties of columns in the query ▪ The Query Attributes area of the Query Builder screen shows the Browser Columns ▪ Enhanced Data Editor (EDE (Browser)) module <ul style="list-style-type: none"> – Enhanced editing Functionality – Ease of use for Users – Full access to all SPI tables ▪ EDE Browser window opens from the EDE Explorer ▪ The EDE Explorer selects the EDE View to browse ▪ The user can Float Tab a EDE View to another window ▪ The Filter Icon above each Column will allow users to build complex multi column filters ▪ The Find (Search) panel searches all columns and is dynamic (searches as you type) ▪ The Sort (Group) panel allows users to drag column headers to the panel to create a sort statement ▪ EDE Actions area saves Layout history and allows users to save the current layout for recall ▪ EDE Actions allows users to add additional properties as columns ▪ EDE Actions allows users to Open EDE Definition to edit the Query Attributes in the Query Builder ▪ The EDE Default View Properties box allows the user to select “User Default View” (Default Views are Unique to each user!) ▪ EDE Instrument Index view Right Click opens All Index Menu Options ▪ Index Menu Options “Available Documents” allows users to select associated documents for viewing • Projects/ As Build • From the As-Built Domain Explorer users can select a Scope Table View and check out items to a project buffer • Users can also see a Scope Tree View of the project buffer • Users also see a Graphic View of the project buffer • All As-Built functionality (Check out and merge) is available from within SPI • Comments: • Added conversation about SQL editor to EDE (as view only, unless moved to Query Builder - which breaks Table Relations, but it is quoted to be easy to rebuild relationships thru the Query Builder GUI) • Change = Expression function for Logic Builds in EDE (not Query Builder) 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> • Browser Button will be eliminated (replaced with EDE) • Spec form browser Button will be moved to Spec Module and somewhat hidden • Default View will finally be set PER USER (instead of old way for everyone) • Entire Merge/Claim function will be Dot.NET - great new Graphic Component to view the Signal Path. Back End Table Structure has been Rewritten, New Tables and Merge-Claim HISTORY • Room Request: • History to be Moved-off, Saved elsewhere and Purged from database to avoid the database size problems of old SPI. Blake Biernacki will escalate the issue within his Intergraph • SPI 2015 still quoted Release End of June 2015 • R1 release in Dec or Jan 2016 • Room Questions: • Is UPGRADE Testing is being done? Blake Biernacki answered with related work being addressed. • Why RI instead of HotFixes? Moving to same Format of R-Releases for all SmartPlant software. • Will Separate Seed be needed for SPF? (SPI seed for 2013 did not mesh with SPF due to Instrument Types) • Is Online Video training being created? No answer as far as in-house instructor-led training. • Issues raised & Training materials questions suggest that there may be Bug-Concerns. John D. replied that the Help-Documentation is being worked on by a separate group (from the Intergraph Development folk) 	
4	Presentation	<p>SmartPlant Instrumentation Work Sharing John Dressel, Fluor</p> <ul style="list-style-type: none"> • Introduction to Work Sharing SPI • This Presentation will address the use of SmartPlant Instrumentation (SPI) in a work sharing environment by discussing the following topics: <ul style="list-style-type: none"> ○ Types of SPI Work Sharing ○ How other SP Software Work Share ○ Methods of SPI Work Share ○ Configuring Citrix and SPI ○ Issues with SPI Work Sharing ○ Successes with SPI Work Sharing • Most projects today are large and complex requiring contractors to share the work between different offices or even with other companies • SmartPlant Instrumentation has some unique requirements when used in a Work Sharing environment • Types of SPI Work Sharing • Splitting Work Within a Company <ul style="list-style-type: none"> ○ Usually involves multiple offices in different hemispheres ○ Offers 24 – 7 work hour software and hardware utilization ○ Reduces costs by utilizing high value work centers ○ May involve different technologies for remote connections 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> ○ The location of the SPI Database Hosting center is an important consideration when work sharing between offices ● Splitting Work between Multiple Companies <ul style="list-style-type: none"> ○ Involves multiple contractors sharing a common project ○ Utilize capabilities of several companies on one project ○ Conflicting work processes and capabilities are a factor ○ May involve different technologies for remote connections ○ Database hosting and software configuration should be done by the main contractor with the SPI database close to the servers ● Defining Projects in an SPI As-Built <ul style="list-style-type: none"> ○ Claiming data for a project enables contractors to work without disturbing ongoing maintenance operations ○ The data actually stays in the SPI database it is simply isolated ○ The Project data is merged into As-Built after completion ○ This is usually done when the SPI database is being hosted by an Owner Operator and Project work is performed over Citrix ● Splitting the SPI Database and Merging back together <ul style="list-style-type: none"> ○ The database configuration must not change while split ○ No modifications to primary tables or forms can be made ○ This should only be done as a last resort as it is very difficult and time consuming to MIGRATE the data back together ○ Never actually split or copy an SPI database without locking and expect to merge the two databases ● Splitting Work Vertically <ul style="list-style-type: none"> ○ Dividing work between contractors by physical Units ○ Using Unit Rights to regulate contractor access ○ Most effective on large multi-contractor projects ○ Only main prime contractor has administrative capabilities ○ The SPI Database is hosted in one location usually by the main contractor or owner operator ● Splitting Work Horizontally <ul style="list-style-type: none"> ○ Dividing work between contractors or offices by tasks ○ Using Task Rights to regulate contractor or office access ○ Most effective on projects involving multiple offices ○ Only one main office must have administrative capabilities ○ The SPI Database is hosted in one location usually at the main office or engineering center ● Other SmartPlant Work Share 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> • SmartPlant Foundation Work Share <ul style="list-style-type: none"> ○ Only one instance of SPF can be used for integration per project ○ Each application Publishes and Retrieves shared data to SPF ○ Work processes and data mapping are controlled by integrator ○ Each contractor maintains their own licenses in the SPLM farm • Smart 3D Work Share <ul style="list-style-type: none"> ○ S3D is initialized from a “SEED” in local and remote locations ○ As the Model is developed – Reference copies are exchanged between the local and remote locations for update ○ Each contractor maintains their own licenses in the SPLM farm • SmartPlant P&ID Work Share <ul style="list-style-type: none"> ○ P&IDs are Data generated documents over Citrix Server ○ Reference data libraries are maintained by the lead contractor ○ P&ID Drawings are checked out and in as needed for update ○ The SP-P&ID database is located in the primary users location ○ Each contractor maintains their own licenses in the SPLM farm • SmartPlant Electrical Work Share <ul style="list-style-type: none"> ○ Data generated documents are created over Citrix Server ○ Reference data libraries are maintained by the lead contractor ○ The SPEL database is located in the primary user location ○ Each contractor maintains their own licenses in the SPLM farm • SmartPlant Instrumentation Work Share Issues <ul style="list-style-type: none"> ○ The SPI database is very large and complex with over 600 tables ○ SPI needs individual user INI files and temporary folders ○ When saving a spec sheet or process data sheet, SPI could write to as many as 8 different data tables at the same time ○ Citrix and SPI must be configured carefully for work sharing • Methods of SPI Work Share • Thick or Fat Client Work Share via WAN or LAN (SPI client software resides on each user PC workstation) <ul style="list-style-type: none"> ○ Using Local Area Network (LAN) for Local SPI Users ○ Using Wide Area Network (WAN) for Remote SPI Users ○ Connections never leave the company network or exit Firewall 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> ○ Remote reading and writing to the SPI Database can be slow depending on the distance and configuration of the software ● Thick or Fat Client Work Share via B2B (SPI client software resides on each user PC workstation) <ul style="list-style-type: none"> ○ Using Business to Business Connections (B2B) ○ Open Port in Firewall allows secure connection over WAN ○ Most corporate IT security agents do not like open ports ○ Reading and Writing to the SPI Database is slow because of distance, bandwidth, ISP stability and software configuration ● Thick or Fat Client Work Share via VPN TCP/IP (SPI client software resides on each user PC workstation) <ul style="list-style-type: none"> ○ Using Virtual Privet Network (VPN) ○ Dedicated IP address allows secure connection over Internet ○ Connections ported through Firewall only to secure server ○ Reading and Writing to the SPI Database could be slow depending on the distance, bandwidth, ISP stability and configuration of the software ● Thin Client Server or Terminal Services Work Share (SPI client software resides on server, users on dumb terminals) <ul style="list-style-type: none"> ○ Using Citrix XenApp or other Terminal Server software ○ Connections over the Internet or LAN and via Firewalls ○ SmartPlant Instrumentation software runs on Citrix Server ○ Very dependent on continuous connection to the Citrix Server ○ Speed issues due to firewall data validation, distance, bandwidth, and configuration of the Citrix Server and SPI ● Thin Client Server Work Share via VPN TCP/IP (SPI client software resides on server, users on dumb terminals) <ul style="list-style-type: none"> ○ Using Citrix XenApp or other Terminal Server software ○ Connection over Internet using Virtual Privet Network (VPN) ○ SmartPlant Instrumentation Software runs on Citrix Server ○ Dependant on continuous connection to the Citrix Server ○ Speed issues due to distance, bandwidth, and configuration of the Citrix Server and SPI Software ● Remote Connections (bypasses Citrix using Local Client Terminal accessed remotely) <ul style="list-style-type: none"> ○ Used for SPI administration and drawing generation ○ Using two computers per user to bypass Citrix Server ○ Connections over WAN and LAN for optimal 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> ○ performance ○ SmartPlant Instrumentation Software runs on local client ○ Dependant on good Workstation connection to the Local Client ○ Speed issues due to distance and configuration of the software ● Configuring Citrix and SPI ● Working in Thin Client Mode (Citrix) “CAUTIONS” <ul style="list-style-type: none"> ○ Do not perform administration functions over Citrix: <ul style="list-style-type: none"> ▪ initializing or upgrading a domain ▪ claiming or merging items ▪ rebuilding stored procedures and triggers ○ Intellectual property is shared when using Thin Client ○ To enable SPI in Thin Client mode for multiple users, you must load a separate Intools.ini file for each user ● Tuning SPI and Citrix for Thin Client Mode <ul style="list-style-type: none"> ○ Intergraph’s “Working in Thin Client Mode” should be followed <ul style="list-style-type: none"> ▪ Publish the SmartPlant Applications on the Citrix Server ▪ Configuring the Citrix Presentation Server ▪ Create Individual INtools.ini Files for Each User ▪ Create the MKIntools.cmd File ▪ Modify the Registry Path Key ▪ Tune Citrix for Seamless Mode ▪ Terminal Server Logon Sequence ● Creating SPI User Groups <ul style="list-style-type: none"> ○ Create User Groups for each entity accessing SPI over Citrix: <ul style="list-style-type: none"> ▪ Rights will be assigned to each User Group depending on their access requirements to do their work ▪ Only the Administration Group should have rights to change the configuration, Primary Tables or Forms ▪ Assign Users to the specific User Group that fits their access requirements ● Creating SPI Group Access Rights <ul style="list-style-type: none"> ○ Each User Group has three levels of Access Rights: <ul style="list-style-type: none"> ▪ Domain Level, Plant Level and Unit Level ○ Each Activity in a Level can be assigned a different access mode <ul style="list-style-type: none"> ▪ Full (add / delete / Update), Modify (Add / Update), View Only or Access Denied ○ Rights control the User Group capabilities according to the Work Split (Vertical or Horizontal) ● Issues with SPI Work Sharing ● Speed Issues when Work Sharing <ul style="list-style-type: none"> ○ Distance is the most important factor involving remote users ○ Lockups occur more often when using MS-SQL 	

Item	Topic	Notes	Action/Due
		<p>than Oracle</p> <ul style="list-style-type: none"> ○ Bandwidth is an issue when using thick client ○ Firewalls affect speed and can cause connection timeouts ○ Remote connections will slow down with more internet users ○ Multiple server locations will have a dramatic affect on speed <ul style="list-style-type: none"> ● Licensing Issues when Work Sharing <ul style="list-style-type: none"> ○ Intergraph does not allow companies to share licenses ○ Each company involved in work sharing must purchase or lease their own licenses for SPI from Intergraph ○ A separate SPLM server must be provided for each companies SPI license and must be addressed by the SPI client computers ○ Multiple SPLM server locations and distance to SPI client computers will have a dramatic affect on speed ● Printing Issues when Work Sharing <ul style="list-style-type: none"> ○ Constant connections to local Printers are an issue when working remotely over VPN or Citrix ○ In many cases it is necessary to have additional printer drivers installed on the Servers ○ Generic printer drivers (Screw Drivers) can help ○ Printing to Adobe PDF requires server folder access and FTP capabilities as well as robust PDF creator software ● Integration Issues when Work Sharing <ul style="list-style-type: none"> ○ Publishing and Retrieving data between application servers is necessary when work sharing in an Integrated Environment ○ When SPI is hosted by an Owner Operator, Integration requires special handling to access data from the remote database: <ul style="list-style-type: none"> ▪ DDP "Ghost" Databases for inline tags to integrate to S3D ▪ Legacy software needs B2B access or export/import must be used ▪ Other SmartPlant applications will need to use export/import ● File Handling Issues when Work Sharing <ul style="list-style-type: none"> ○ SPI uses ESL, AutoCAD or Microstation when generating drawings and must be able to call these executables (UAC) ○ Exporting and Importing Excel files are normal work processes ○ Large quantities of Adobe PDF files are also created ○ Users will need to have a read-write work area on the SPI server to facilitate file manipulation ○ Writing files locally will drastically slowdown the SPI application ● Successes with SPI Work Sharing <ul style="list-style-type: none"> ○ Fluor has work shared over 150 SPI projects out of 	

Item	Topic	Notes	Action/Due
		<p>25 offices in 22 countries involving 16 other EPC or Owner Operators</p> <ul style="list-style-type: none"> ○ Fluor has launched its first Cloud Hosted Project <ul style="list-style-type: none"> ▪ All users from 4 contractors are working together in one SPI instance using Unit rights with good productivity ▪ Hosted outside of the Fluor Firewalls and off of Fluor's WAN ▪ All database and Citrix servers are located in one server farm ▪ SPI is configured mostly per Intergraph Recommendations ● Intergraph® SmartPlant® Cloud <ul style="list-style-type: none"> ○ Leverage all Data-centric SmartPlant Enterprise Software ○ Speed Up Project Execution activities and Work Sharing ○ Reduce Costs by utilizing Intergraph's hardware infrastructure ○ Improve Engineering and Operating Plant Performance ● Intergraph's Software as a Service solution allows users global access and provides them with 24/7 support and pay-per-use service ● "People have been known to achieve more as a result of working WITH others than AGAINST them" ~ Dr. Allan Fromme ● Room Questions: ● Room poll - Most folk using Citrix (with issues & some success). Only one attendee using MS RDP ● Similar presentation on "Workshare Challenges" was previously given by Dee Dee Honea, May 13, 2014 and is online at Website: http://spi-Ituf.org ● Question about Intergraph CLOUD having potential limitation that some Cloud agreements currently quoted do not allow Administration Access. Answer – Domain Administration to remain with the user but System Administration is done by ● Citrix environment suggestion from Intergraph - Launch the ESL/ERU before Launching SPI due to Microsoft Security issues - Users may have to Launch ESL/ERU prior to SPI in Some Windows environments. Must be done each time users login. There is a CR issued on this 	
5	Presentation	<p>SmartPlant Cloud Overview Trent Pope, Intergraph</p> <ul style="list-style-type: none"> ● Skipped from morning time-slot due to Trent's inability to Login Remotely ● Room Audio connection issues ... Solved mid-presentation ● Why SmartPlant Cloud? <ul style="list-style-type: none"> ○ Better Communication to meet Schedule and Budget ○ Standardization improves Quality and reduces Risk ○ Safety with robust security protects Reputations 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> ○ Industry Investments expected to reach \$38 trillion by 2035 ○ Diverse project locations around the globe ○ Energy Demand is increasing ○ New technologies will need to be addressed ● Capital Project Performance <ul style="list-style-type: none"> ○ 45% of Projects beat or meet schedule deadlines ○ 28% of projects meet or come in less than budgets ○ SmartPlant Cloud will improve performance ● Home Page Navigation <ul style="list-style-type: none"> ○ Graphical Interface for all available applications e.g.: <ul style="list-style-type: none"> ▪ Tools for Export/Import ▪ Office 365 ▪ User profile ▪ SmartPlant Applications ● Life Cycle Experience <ul style="list-style-type: none"> ○ User Friendly Portal ○ Multiple Data Centers ○ Disaster Recovery ○ 24/7/365 Support ○ Intergraph Service Supplier for EPCs ○ Intergraph Service Supplier for O/Os ○ Flexible Pricing to fit your needs ● User Connection Network <ul style="list-style-type: none"> ○ Data centers in Japan, Ireland & USA (NYC) ○ More under consideration as market requires ● Hypercare <ul style="list-style-type: none"> ○ Customer Care Manager assigned to each account ○ Readiness Preparation Recognizes and addresses issues early ○ Production User access to Onsite and Offsite support ○ Ongoing Intergraph Support ● External Reporting <ul style="list-style-type: none"> ○ Reporting is part of the contract ○ Monthly Technical Support ○ Usage Statistics ○ Application Usage ○ Disk Space ○ Uptime and Downtime monitoring ○ Services Available ○ Service Incidents ● Stronger Links <ul style="list-style-type: none"> ○ Cloud to Ground and Cloud to Cloud APIs ○ Internal Automation and Integration ○ Web Services ○ Foreign cloud Access ○ Mobile Access ● Increased Automation <ul style="list-style-type: none"> ○ Estate Builds ○ Project based Automation tools ○ Apps and APIs ○ Partner Applications ○ User Applications ○ User Reporting ● Fit to purpose computing <ul style="list-style-type: none"> ○ Joint Venture Projects 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> ○ EPC Projects ○ O/O Projects ○ PMC Projects ○ Internal Skill Capacity <ul style="list-style-type: none"> ● Questions: ● Phone Question - Bundling of Licenses/services makes the Cost of Cloud seem expensive ● What about Cyber Security? - Professional Hackers are hired by Intergraph to do Highest-Level of Ongoing Security certification. Customers will be informed immediately and to the level of breach if one occurs. ● Concern about customer desired software Administration Access. Answer - Site creation, Initialization must be by Intergraph. Many Domain Administration activities are expected to be done by the customer. NO database access will be allowed Online, and our interpretation is that INTSetup Utility may or may not be allowed, but speaker confident that all related modules and tools we can now use. ● ODBC connections will not be allowed. Customization profiles can be created and tested by Intergraph to run Some Customer software. ● Import tools will not be run by users. Import must be assigned thru Intergraph staff. Import Interface may be minimally accessible. ● SAP, DeltaV and other Interfaces like Honeywell EPKS can be provided within the tool. ● Are there Thin-Client issues considered @ Claim/Merge issues of connection - since Citrix usually disallows High Level functions. ● Custom Forms can be provided to staff to be loaded onto the SPI Project database ● AutoDesk - CAD, Bentley - Microstation, Aveva and Documentum plus other competitor tools might be able to be loaded into the Cloud, if proper licensing is assured to allow 24/7 access to Intergraph ● APIs for 3rd party applications ... How will Intergraph maintain the stability of the 'other' applications. Intergraph will Help, but not certify other manufacturer's tools. 	
6	Presentation	<p>Optimizing SPI Citrix Delivery Omied Sadeghi, Fluor</p> <ul style="list-style-type: none"> ● Fluor Cloud Systems Architecture <ul style="list-style-type: none"> ○ Host area contains all the SmartPlant Enterprise solutions with Citrix and Database Servers ○ Contractors areas contain Licenses Server s, EDMS Servers, S3D Servers and File managers ○ Client area for SAP Plant Maintenance and Material Management Modules with SPF & MOC ○ Fluor area contains Material Manager (MatMan) and Document Manager (POL) databases ○ Integration layers for SmartPlant Enterprise, Material, EDMS, SAP and Primavera Data 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> • Cloud Advanced Monitoring <ul style="list-style-type: none"> ○ Advanced Monitoring logs each users: <ul style="list-style-type: none"> ▪ Initial Software, login time, Computer ID and Idle Time ▪ System Stress, CPU, Memory and Processor usage ▪ Independent Computing Architecture (ICA) Latency to track each users Citrix packet transfer rates and identify Citrix performance issues ▪ I/O read Operations Per Second (IOPS) to determine volume of meta data over Citrix to identify Virtual Privet Network (VPN) throughput issues ▪ Performance Graphs show the number of users per SmartPlant Application at any given time • Optimizing SmartPlant Instrumentation Citrix Delivery • Business Factors affecting the use of a cloud environment for software distribution (The 5 C's) <ul style="list-style-type: none"> ○ Client – the client requirement for a completely integrated environment ○ Contracts – all parties had to sign contracts defining their agreement to use cloud services ○ Cost – hardware costs were minimal compared to software Licensing costs ○ Contractors – the unique needs of each contractor had to be considered ○ Confidentiality – the internet distribution had to meet ridged security requirements • Design Factors affecting the use of a cloud environment for software distribution (The P C's) <ul style="list-style-type: none"> ○ Performance – the issues of speed and connections over Citrix had to be addressed ○ Printing – the ability of the users to print and save files was optimized ○ Process – hardware costs were minimal compared to software Licensing costs ○ PBS/PAU – the unique needs of each contractor had to be considered ○ Productivity – configuration of SPI and Citrix were per Intergraph's Thin Client instructions • Comments: <ul style="list-style-type: none"> ○ 6 months deliberation was made before Fluor committed to Hosting an Integrated architecture. ○ 14 locations across globe are contacting one example system with SPF as foundation, with tie-ins to separate non-SmartPlant software (SAP, EDMS, Primavera, etc) ○ Omied provides similar User Stats Monitoring as 	

Item	Topic	Notes	Action/Due
		<p>Intergraph provided in Cloud presentation.</p> <ul style="list-style-type: none"> ○ Graphical image of Staffing & SPI use ... aids advisory team to deal with system and connection challenges. ○ SPI specific = Hybrid Cloud environment: scalability plus local access + admin staging ○ Work process considerations are a large part of Design Factors ○ Printing is a surprisingly complex issue (including PDFs) ○ White Paper will be provided for Thought-provocation ○ A Painful issue is Bulk PDF Converters & inability to Write to Local directories or folders - temp-files sent back and forth - 150 documents printing cut from 8 hrs to 15 minutes by modifying processes. <p>NOTE: ICA local policies CAN be written to restrict or disallow connectivity disruption</p> <ul style="list-style-type: none"> ● Questions ● What About Licensing issues? - Intergraph has assisted somewhat, Contracts must meet & provide their internal specifics, some management of licenses is distributed ● What type of DashBoard used? - Internally (Citrix Storefront etc) not SOLD, so currently tailored for internal use ... but not display-driven like Intergraph's Cloud tile. ● How is Integration Done? Publish/Retrieval handled thru Gate keeping team of 12 folk to do Higher level work ● What type of Support? Internal SR tool used for communication of changes and adjustments during project ● Added Note from Ron Jackson: Customer will receive the full hardware/Software configuration that has been built as a deliverable. 	
7	Forum Topics	<p>Forum Topics</p> <p style="text-align: right;">All Attendees</p> <ul style="list-style-type: none"> ● SPI O/O As-Built mode - previous SPI versions were Inadequate - but SPI2015 may solve many issues (based on beta-testing) ● SPI Interoffice Work Share SPI Multi EPC Work Share SPI Version 2015 ~ Work-Sharing & Integration are Key Topics for our future ● Other SPI Topics ● SPI 2009 SP4 has problems in FFB package - doubles tags (Hot Fix 14 may fix it, and SPI 2013 also may have it fixed). ● Low Cost Centers may have pros & cons (low technical acumen possible, but high data entry capabilities) ● Citrix Gurus asked about - Fluor uses external Citrix folk. Some room folk companies have IT folk that vary the level of access 	

Item	Topic	Notes	Action/Due
		<ul style="list-style-type: none"> • Multi EPC sharing. Challenges of different work processes and data/access sharing. Standards and guides must be very widely encompassing. Constant communication is needed. • SPI calculation modules are not always as precise as Vendor Calculations, sometimes a valve size-off, etc. • New Set of APIs are being created by Intergraph to assist Vendor Interfaces, which passes thru To Do List to allow Users to Pick and Chose what level of data is brought back into SPI from Vendor. • SPI2015 exciting to some - as it'll solve major issues (data export, Claim/Merge, O/O mode) Major amount of Training will be needed • Contact Blake Biernacki, Intergraph (blake.biernacki@intergraph.com 832.540.8465) for SPI 2015 Personal (hands-on?) Demos. • SPI 2013 Test Drive online for Intergraph now - LTUF folk HOPE that Intergraph will put SPI 2015 on that Test Drive. Room humor that most customers won't actually use the new SPI 2015 until SPI 2017 is released. • Old Watcoms questioned - Old levels can be upgraded in Watcom-Only environment ... and OSI reports they will maintain a hardware availability to do it as contracted service. 	
8	Close	<ul style="list-style-type: none"> • Next meeting will be April 29, 2015 at Intergraph (see http://spi-ltuf.org for address and Map) • John Dressel closed meeting and thanked Jacobs for Hosting 	