

SmartPlant Instrumentation Technical User Forum P2C2 (Houston SPI TUF) Meeting		April 29, 2015 8:00 am Intergraph
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Attendees	16 Members in attendance 18 Online Connections	Copied To	Houston SPI LTUF Website
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Called By	John Dressel	Prepared By	Andrew Kunev & John Dressel
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Item	Topic	Notes	Action/Due
1	Welcome	Welcome & Safety Moment David Kaiser, Intergraph	
2	Chairman's Notes	<p>John Dressel, Fluor</p> <ul style="list-style-type: none"> GTUF May 30, 2015 @ MGM in Las Vegas GTUF agenda will be integration tools (morning Intergraph interfaces, afternoon = Vendor interfaces) HxGN 2015 June 1-4, 2015 @ MGM in Las Vegas Minutes from prior meeting were approved. <p>Introductions (attendance was low dur to short notice)</p> <ul style="list-style-type: none"> Intergraph, Fluor, ExxonMobile, WP, Mangan, KBR, Chart (only 10 people in 'on-time' attendance) Online dozen: Bayer, Lubrisol, Chevron, +more. Many more joined meeting in progress. 	
3	Presentation	<p>Update on SPI 2015 Status David Kaiser, Intergraph</p> <ul style="list-style-type: none"> SPI 2015 Release date Q3 (September) this year <p>David requested Feedback on 2015 beta testers:</p> <ul style="list-style-type: none"> Fluor (John Dressel) EDE and Query Builder - Very good. Claim/Merge good, removed from Administration Module. Access Rights closed many back doors. Added more To-Do Lists for new functions (Vendor imports will be multi-phased APIs). Projects in Owner/Operator mode are Fixes for MAC interfaces <p>Question: Will SP I2016 work with Oracle12? – Answer Is Yes, and it may no longer work with Oracle11</p> <ul style="list-style-type: none"> Reminder given to Intergraph: MACs, EPCs AND Owners Want the Instrument Component ID to become available in EDE. John Dressel and many in room agreed, and mentioned that this has been asked of Intergraph since last year's conference (and before). David volunteered that he will follow-thru w/ Intergraph on the request-update. 	
4	Presentation	<p>Populating DDP Default Library Ron Jackson, Fluor</p> <ul style="list-style-type: none"> Topics <ul style="list-style-type: none"> Dimensional Data Re-use Purpose of Default Library Default vs. Vendor DDP Information Structure Importing into a Master Default Library 	

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		<ul style="list-style-type: none"> ○ Importing into a Project Default Library ○ What's the next step? <ul style="list-style-type: none"> ● Dimensional Data Re-use ● Previous project "Certified" information sufficient as new project "Preliminary" information.. ● Less data entry by designers. ● Quicker transfer to piping for preliminary iso's. ● Kept in dedicated SPI database <ul style="list-style-type: none"> ● Default Dimensional Data ● "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 data received from the manufacturers. <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." <ul style="list-style-type: none"> ● Default vs. Vendor Libraries ● 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 <ul style="list-style-type: none"> ● Importing into a Master Default Library ● Import Module used to link to other databases. ● Three imports needed per database. ● PROCESS_CONNECTION_END_PREP (table) ● PROCESS_CONNECTION_CLASS (table) ● DDP_EXPORT_VIEW (view)(delivered with database) ● Information captured from component dimensional information. ● Import Module validates data to prevent duplicates <ul style="list-style-type: none"> ● Importing into a Project Default Library ● Preload Groups and Forms via Domain Admin Module ● Currently all or nothing from Master Default Library ● Similar process to importing to Master Default Library ● PROCESS_CONNECTION_END_PREP (table) ● PROCESS_CONNECTION_CLASS (table) ● DDP_TRANSFER (view)(custom added to database) 	

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		<ul style="list-style-type: none"> • Save import links to reuse on future projects • What's The Next Step? • Develop "user friendly" interface • Automate import for supporting tables • Enable filters to support project Approved Vendors List • Questions & Comments • Slides to be online (Today's viewing is dry-run of final presentation of what will be given at conference) <ul style="list-style-type: none"> ◦ Note: DDP_Export_View works Very well as delivered by Intergraph! • Suggestion from room: Consider Version Migration (accommodate upgrades, etc.) Answer= DDP table structure and Queries are not version dependant - Good from SPI2007Sp5 to SPI2015 (since the new table builds & PDS info). This should hold valid for good future. • Question @ PDS symbols, Integrated P&ID thru SPI and into 3d - has anyone else noticed input/outlet flipping sides. Answer = Yes. Also Line sizes are often imported mixed-up. 3d symbols downloaded from site have different codes and variations behind variances of symbols (zip file from SP3D site) and SR has been opened, multiple teams at Intergraph involved including SPF folk. • Should WE try to escalate this via LTUF to highlight more focus to Intergraph? EPCs (Fluor+KBR use Now, WP will when it's fixed) find that DDP is very important for integrated environment. • David offered to help Intergraph follow-up. 	
5	Presentation	<p>SPI to SPEL Interface Now and Future John Dressel, Fluor</p> <ul style="list-style-type: none"> • SmartPlant Instrumentation Integration • SmartPlant Instrumentation correlates Instrument tag Numbers with SP-P&ID for MOC • Instrument Power requirements and Signal cross references are Published to SPEL • Dimensional Data for Piping and Inline Instrument tags are published to SP-3D • Fluor Integration SmartPlant Instrumentation with other Intergraph products and 3rd party. • They publish a lot of SPI data, but do not import much. • They control the quality of input carefully & use internal discrepancy tools to manage the data. • Cabinet info from SPEL is brought in. • Some data is Retrieved into SPI (Electrical, P&ID limited, Instrument datasheets.) • Data sets are relatively small between SPEL & SPI (Great Slide with data fields & showing SPF in middle) • SmartPlant Electrical Integration • SmartPlant Electrical Retrieves Instrument Power Requirements and Signals from SPI and Electrical Equipment Numbers from SP-P&ID and Tray Data from SP-3D 	

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		<ul style="list-style-type: none"> • SmartPlant Electrical Publishes Cables requirements to SP-3D and Instrument circuiting with Electrical Signals to SPI • Publish and Retrieving Power Requirements • Types of Instruments requiring Power: <ul style="list-style-type: none"> ○ 4 wire non loop powered instruments ○ Electrical traced tubing bundles ○ Electrical traced instruments ○ Electrical heated enclosures ○ Field Analyzer cabinets ○ Motor Operated Valves • From the Domain Explorer or Index Browser open the Tag Properties • Check the “Requires power supply” check box • Fill in the power requirement elements in the “Power Supply” tab • Open the “Electrical Power Element Browser” View • Print a and preview a report from the “Electrical Power Element Browser” • Assign a revision to the “Electrical Power Element Browser” report • In the SmartPlant module “Publish” the Power Element report to SPF • Notify Electrical that the power requirements a ready for Retrieval • After Electrical assigns the circuits to the Power Elements they will Publish the data back to SPF and notify Control Systems • Control Systems will “Retrieve” the Power data to the “To Do List” • Publish and Retrieving Electrical Signals • Types of Instrument Electrical Signals: <ul style="list-style-type: none"> ○ Interlocks between SPI and SPEL ○ Motor Control Station Signals ○ Status Signals of Electrical Systems ○ Electrical Trip Signals ○ Voltage and Current Signals ○ Speed Control Signals • From the Domain Explorer “Electrical Tags” or Index Browser • Add a Tag with the Tag Class “Electrical” • Fill in Tag Number, Service Description, I/O Type and Loop if Required • Open the “Electrical Tag Browser” View • Print a and preview a report from the “Electrical Tag Browser” • Assign a revision to the “Electrical Tag Browser” report • In the SmartPlant module “Publish” the Electrical Tag Report to SPF • Notify Electrical that the SPI Electrical Signals are ready for Retrieval • After Electrical assigns the signals to the Schematics and associate them to Equipment they will Publish the data back to SPF and notify Control Systems • Control Systems will “Retrieve” the Electrical Tag Signals 	

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		<p>data to the "To Do List"</p> <ul style="list-style-type: none"> • Retrieving Electrical Power and Signals • Electrical Power distribution board data from "To Do List" • Shows in the "Power Supply" tab of the Tag Number Properties • Contains PDB, Cell or Circuits assigned by Electrical and Phase if applicable • Electrical Signal data from "To Do List" • Shows on the "Electrical" tab of the Tag Number Properties • Contains Electrical Reference Tag, Schematic, Circuit data • Electrical Data can be shown on Loop Diagrams for Reference <ul style="list-style-type: none"> • SmartPlant Instrumentation 2013 Cable Management • Current SmartPlant Instrumentation Cable Management • SPI exports instrument cable requirements to SPEL • SPEL can then Publish both Electrical and Instrument Cable requirements to SP3D for Tray Loading • Cable Tray Routing and Loading done in SP3D will Provide Lengths and Routing Data • The SP3D Cable Lengths and Routing is Published Back to SPEL • Cable Schedules can be Published from SPEL for Electrical and Instrument Cables or • Instrument Cable Data may be Exported from SPEL and Imported into SPI for Instrument Cable Schedules <ul style="list-style-type: none"> • SmartPlant Instrumentation 2015 Cable Management • Future SmartPlant Instrumentation Cable Management • SPI to Publish and Retrieve Instrument cable data through Foundation to SPEL • SPEL can then Publish both Electrical and Instrument Cable requirements to S3D for Tray Loading • Cable Tray Routing and Loading done in S3D will Provide Lengths and Routing Data • The S3D Cable Lengths and Routing is Published Back to SPEL • Cable Schedules can be Published from SPEL for Electrical and Instrument Cables or • Instrument Cable Data may be Exported from SPEL and Imported into SPI for Instrument Cable Schedules <ul style="list-style-type: none"> • Future SmartPlant Instrumentation Cable Management • SPI to Publish and Retrieve Instrument cable data through Foundation to S3D • Cable Tray Routing and Loading done in S3D will Provide Lengths and Routing Data • The S3D Instrument Cable Lengths and Routing is Published Back to SPI • Instrument Cable Schedules can be Published directly from SPI <ul style="list-style-type: none"> • Questions and Comments: 	

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		<ul style="list-style-type: none"> • Retrieving 3D model info into SPEL, as well as P&ID & SPI (instruments requiring power supplies + Enhanced Loop Reports). • Another Great slide of Data Exchange from SPEL > SPF > SPI (details back into SPI) • SPI2013 image shown for optimal publish/retrieve Power & Electrical Signal data via Electrical Power Element Browser & Electrical Tag Browser (these will be in SPI 2015 EDE and even further enhanced and map able) • SPEL electrical info can be mapped via Macros into SPI Loop drawings • New tag class of Electrical (available since SPI2007) assists interface between SPI/SPEL • Impressive Loop shown with further electrical • SPI Cable Management (&SPEL) was pretty rudimentary in SPI2013 & before. WILL be Fixed in SPI 2015 <ul style="list-style-type: none"> ○ currently manual with little management-of-change, • WP commented that current manual method is unworkable with projects (choose to keep in only one tool). Fluor/KBR finds agreement, but with much Communication and frequent updates the SPI/SPEL data can be validated (manually) to maintain correct duplication of data. • SPI2015 shall have a better solution for Cable Management with new mechanisms (not yet tested hands-on). Cable management thru SPF, and will be able to integrate with SP3D. • Phone question: Can other cables (Telecom, fiber optics, FFB segments etc) be handled between SPI/SPEL - Answer Yes • Personnel with VERY specific Skill-Sets needed for SPF mapping and Integration. <ul style="list-style-type: none"> ○ Hinted Note: SPI2016 will have User Defined Picklists! • SPI 2013/SPI2015 has much more compatible Units of Measure, and this is a good progress for playing field. • WP mentioned UDF/UDT integration is a big problem. • Fluor recommended Intergraph Focus suggested 1st on Matching (normalized) list of Instrument Types - to be propelled to all customers • Strong discussion that data entry could be moved forward into Smart P&ID - to improve integration later to SPI • David added Intergraph is focused on assisting, but multiple customers are following different paths. • WP: wants SPI to have a mapping cross-reference (template?) type of option (not restricting the users on a predefined List of Instrument types). Intergraph asked to consider • Standard Library symbol idea proposed. Difficulty in multiple types per symbols. • KBR has approached the Instrument Types cross-referencing issue with different paths. • Room comment: P&ID has to be a lifecycle management tool. Symbol driven is ok, but drives multiple data. Cross-reference. • Request made to have the person giving HxGn P&ID-input presentation - to be given to our LTUF after the HxGn 	

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		conference (August?)	
6	Presentation	<p>Emerging Technologies and SmartPlant John Dressel, Fluor</p> <ul style="list-style-type: none"> • SmartPlant Enterprise Tools • SmartPlant P&ID Process and Instrument Diagrams (SP-P&ID) <ul style="list-style-type: none"> ○ SmartPlant P&ID contains both Graphic and Data Information ○ Use new P&ID symbols to support Emerging Technologies ○ New work processes to enter data in the SP-P&ID database • Computer Aided Engineering with SmartPlant Instrumentation (SPI) <ul style="list-style-type: none"> ○ Instrument Indexing Emerging Technologies in SPI ○ Specifications and Datasheets for Emerging Technologies ○ Wiring Systems Design and Documentation of Emerging Technologies • Emerging Technologies effecting SmartPlant Electrical (SPEL) <ul style="list-style-type: none"> ○ Documents Emerging Intelligent Electrical System requirements ○ Shares Cable management and Bus Architectures with SPI • Placing Emerging Technologies in Smart 3D (S3D) <ul style="list-style-type: none"> ○ Contains all physical Elements for Emerging Instrument Technologies ○ Contains material requirements for hookup and mounting • Integrating Emerging Technologies using SmartPlant Foundation (SPF) <ul style="list-style-type: none"> ○ Contains all physical Control Systems Elements ○ Contains material requirements for hookup and mounting • Emerging Instrumentation & Wiring Systems • Emerging Instrumentation Systems <ul style="list-style-type: none"> ○ Basic Process Control Systems (BPCS) ○ Safety Instrumented Systems (SIS) ○ Equipment Protection Systems (EPS) ○ Burner Management Systems (BMS) ○ Asset Management Systems (AMS) ○ Fire and Gas Systems (F&G) • Emerging Wiring Systems 	

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		<ul style="list-style-type: none"> ○ Conventional 4-20 ma Instruments ○ Smart Digital Instrument Systems ○ Communications Wiring Systems ○ Bus Based Instrument Wiring systems ○ Wireless Instrument Systems ○ Field I/O and Electronic Marshalling ○ Other Emerging Wiring Networks <ul style="list-style-type: none"> ● Process and Instrument Diagrams Issues ● Quality of SmartPlant P&ID Data <ul style="list-style-type: none"> ○ The P&ID's are developed by Process Graphics users who are focusing on the graphic and visual content of the P&ID without regard to the underlying Data so the quality of underlying data is suspect ● Methods for Improving the Quality of SmartPlant P&ID Data <ul style="list-style-type: none"> ○ Show every instrument on the P&ID to provide Smart Data Properties ○ Allow discipline engineers to edit P&ID Data before Integration ○ Generate reports and the check the data integrity before Integration ● Showing New or Emerging Technology on P&IDs <ul style="list-style-type: none"> ○ The Symbols used on most P&IDs do not properly convey Data such as Device Type, Signal Type, Measurement Technology or System Type ○ The use of outdated or abbreviated symbols results in Data gaps when Integrating, Reading or Interpreting P&IDs ● Current Symbol Standard ANSI/ISA-5.1-2009 <ul style="list-style-type: none"> ○ Defines Symbols for BPCS, DCS, PLC & SIS ○ Defines Symbols for Hardware and Software ○ Added Signal Type Symbols for Wireless, Fieldbus, Smart Digital or Serial signals ○ Added New Measurement Technology Symbols ○ Added Valves with Positioners and Controllers ○ Added Function modifier "Z" for SIS Instruments ○ Defines Naming Conventions for Loops and Tags ○ Defines Over 1000 Instrument Type Identifiers ● Combined Technology Instrument Systems ● Most engineering projects today use a combination of Conventional, Bus wiring and Wireless technology selected for best fit to project and system requirements ● Finding the right balance between system requirements and applied technology are day-to-day choices facing engineers working in both large and small engineering companies 	

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		<ul style="list-style-type: none"> • Smart Digital Instrumentation wiring systems • Additional Index Data for HART Digital wiring systems: <ul style="list-style-type: none"> ○ It is not just an 4-20 mA analog signal anymore! It's Digital DATA ○ Process, Alarm and Trip data now reside in the Off Line Instruments • May require HART Enabled I/O, Multiplexer and Interface devices • Wiring HART Digital wiring systems: <ul style="list-style-type: none"> ○ Wires much like conventional 4-20 mA instrument systems • Foundation Fieldbus wiring systems • Additional Index Data for Fieldbus wiring systems: <ul style="list-style-type: none"> ○ Segment or Homerun cables carry multiple signals on one pair • Some Issues with Fieldbus wiring systems <ul style="list-style-type: none"> ○ Virtual Field Devices (Function Blocks) add records to the Index ○ Left and right wiring on bricks makes segment diagrams awkward ○ Conservative Global Parameters are more effective than validation reports • Wireless Instrument Systems • Additional Data when engineering wireless networks <ul style="list-style-type: none"> ○ Scan rate ○ Gateway names ○ Wireless adapter numbers ○ Plan Drawing numbers • Define additional Wireless device instrument types • Develop Spec Sheets and symbols for Wireless transmitters and gateways • Safety Instrumented Systems • Maintain Physical Separation between SIS and BPCS wiring • Minimize terminals and connections as points of failure • Special Colors, Markings and Labels for Safety Systems • Additional Index Data for Safety Instrumented Systems: <ul style="list-style-type: none"> ○ SIL Ratings ○ Interlock Numbers ○ Maintenance Cycles ○ Certifications and Approvals 	

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		<ul style="list-style-type: none"> ○ Instrument System Identifiers ○ Unique Identifiers ○ Redundancy Requirements ○ Partial Stroke Testing (for Valves) ● Equipment Protection Systems ● Additional Data for Equipment Protection Systems : <ul style="list-style-type: none"> ○ Interlock Numbers ○ Instrument System Identifiers ○ Custom Specification Data for monitors and sensors ● Issues When Wiring Equipment Protection Systems: <ul style="list-style-type: none"> ○ Dedicated Vibration or Temperature Monitor systems ○ Redundant Equipment Trip Logic and I/O ● Burner Management Systems ● Additional Index Data for Burner Management Systems: <ul style="list-style-type: none"> ○ Interlock Numbers ○ Instrument System Identifiers ● Additional Spec Sheets for Burner Management Instruments ● Issues When Wiring Burner Management Instruments: <ul style="list-style-type: none"> ○ Furnished controllers and instruments with isolated control system ○ Special Colors, Markings and Labels for Burner Management System ● Asset Management Systems ● Additional Instrument Data for Asset Management Systems: <ul style="list-style-type: none"> ○ Functional Location for SAP Unique Identifier ○ Asset Management System Identifiers ● May require SAP Interface for Data Transfer ● Asset Management Instruments Data requirements: <ul style="list-style-type: none"> ○ Interface with HART Data, DCS Configuration and Field Calibration Databases ○ Generally defined by Owner Operator requirements ● Fire and Gas Systems ● Additional Index Data for Fire & Gas Systems: <ul style="list-style-type: none"> ○ Additional Instrument Types for Fire and Gas Instruments ○ Instrument System Identifiers ○ Instrument Location drawing or zone definitions ○ Additional Spec Sheets for Fire and Gas 	

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		<p style="text-align: center;">Instruments</p> <ul style="list-style-type: none"> • Issues with Wiring Fire and Gas Instruments : <ul style="list-style-type: none"> ○ Mixed wiring topographies generally prohibit automated wiring • Communications Wiring Systems • Special Telecom data may need to be defined: <ul style="list-style-type: none"> ○ Build and Index all Communication Devices ○ Fiber Optic and Network wiring definitions • Need for SPI Specification Library for Communication Devices • Communications Wiring Systems: <ul style="list-style-type: none"> ○ Special symbols and graphics for telecommunication equipment ○ Telecom Systems use Block Diagrams or Point to Point Diagrams • Emerging I/O Technology • The Input Output Technology is changing the way we connect to Instruments <ul style="list-style-type: none"> ○ Electronic Marshalling removes multiple connection points from the I/O ○ Remote I/O moves the connection to the DCS closer to the field instruments ○ Universal I/O allows different types of signals to share a common connection ○ Programmable I/O can be reconfigured without hardware changes ○ Bus architecture for network connectivity • Each of these I/O technologies require different documentation and data sets to be properly documented by the SmartPlant Enterprise tools • Emerging Instrument Networks • Ethernet - Many Instruments now have Ethernet connectors and will configure as Plug and Play with IP Adapters into control networks • Modbus has been around a long time but is experiencing a resurgence as manufactures are bypassing conventional I/O to tie directly to the computer networks • Profibus DP (Decentralized Peripherals) and As-I bus are automation buses used primarily in the manufacturing industries to connect to Programmable Logic Controllers • Profibus PA (Process Automation) and Foundation Fieldbus are used for process control and share the same physical layer but have different data protocols 	

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		<ul style="list-style-type: none"> • Emerging SmartPlant Electrical Systems • Intelligent Motor Protection Relays (IMPR) <ul style="list-style-type: none"> ○ Are microprocessor controlled and share monitoring, alarming and communications with Instrument Systems • Intelligent Power Motor Control Centers (IPMCC) <ul style="list-style-type: none"> ○ Share Human Machine Interfaces with Instrument Systems via Bus or Serial interfaces and interface with other Data Centric Automation Tools • Intelligent Electrical Switchgear <ul style="list-style-type: none"> ○ Perform System Diagnostics and Power Demand Prediction • Intelligent Electrical systems have different network protocols <ul style="list-style-type: none"> ○ Modbus ○ Profibus ○ CANopen ○ DeviceNet ○ Ethernet TCP/IP ○ Serial Interface • SPEL and SPI share cable management, networks and interlocks as defined by the use of Intelligent Electrical switchgear and motor control centers • Meeting the Challenge with SmartPlant Suite • Advantage of using SmartPlant Enterprise for Emerging Technology <ul style="list-style-type: none"> ○ SmartPlant is a flexible data management system that control data for an array of new and emerging instrument and control technologies. ○ Intergraph constantly updates the enterprise software to provide capabilities for the requirements of new and emerging instrument systems ○ It uses standard integration methods with other automation tools and other SmartPlant software on different platforms and vendor specific software ○ P&ID automation software can be called upon to create system layouts or cause and effect diagrams to define the emerging technology and systems ○ P&ID developers can handle each emerging systems data requirements and develop the proper data fields and symbols to address them ○ As more emerging instrument systems are developed SmartPlant Enterprise will handle the need to model and manage their materials in S3D and SPM ○ The SmartPlant Enterprise has the flexibility to exchange model elements and data with other 	

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		<p style="text-align: center;">DBMS, CAD and 3D Platforms to facilitate integration</p> <ul style="list-style-type: none"> • Questions and Comments: • Instrument technologies as well as the entire SUITE of Smart Plant tools discussed • Emerging technologies: <ul style="list-style-type: none"> ○ Ones not mentioned on slide: from remote caller > Flex I/O (Emerson Charms & Honeywell Universal I/O) ○ Discussion on Human-in-field-Tracking ID technology, as well as other new hardware carried into field • ANSI/ISA 5.1-2009 provided well for Safety, Serial & Bus systems (Not yet shipped with P&ID standard) <ul style="list-style-type: none"> ○ Intergraph concern over new revision to ISA coming soon. Room proposes that new revision will not change the current 5.1 standard. Overall comment is that the standard from ISA is a proposal not a requirement. ○ Caller comment that ISA does not include Offshore API RP14C ○ Much more data is currently being Farmed from the field, and data must be moved/process further than before in the instrument systems. ○ Caller comment: Also Valves being built with monitoring Devices • Issues for Bus systems delved into (examples spoken of like different customers in TE>TT scenarios, some wanting to see the TT in Control system, others wishing to see the multiple TEs.) • Wireless (joined with issues of Security system information) <ul style="list-style-type: none"> ○ 3D model to plan the devices for Wireless transmitters / Hubs, etc ○ More Wireless is being installed, examples = Straight Monitoring, as well as Temperature control • Unique Identifiers provided for Safety Instrumented Systems, with Additional Index Data <ul style="list-style-type: none"> ○ Room Comment about Process Safety (ISA 80) Interlock great, ○ Bypass Management important, SIS systems, SIL calcs (hardware dependant & dynamic), ○ Functional Safety assessment on Installed system critical ~ Honeywell Remote I/O example of solution toward limiting number of connections between Field and Control(www.honeywellprocess.com/.../control-monitoring-and-safety-systems/...)> ○ Mangan tools mentioned to assist quality checking ProSys SLM Safety Analysis (www.prosyslm.com). 	

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		<ul style="list-style-type: none"> ○ Responsibility and Ownership for SAFETY is being brought to forefront. ○ Osha Guidelines are pushing, but many plants follow other shut-down scenarios. ● In some cases: We do need to document the mechanical safety management systems in SPI ● SPI SAP interface mentioned - works well but much mapping needed due to Client Tailored SAP configurations. <ul style="list-style-type: none"> ○ Measurable metrics are required by law under OSHA, regarding Asset Management Instruments data ○ Caller comment: other tools like Zenator need to be incorporated or linked into SPI ● Fire & Gas System index data needed (monitoring with SPI can be a chore - with more resources than conventional Control System) ● Telecom Systems' elements in SPI are nice, but many EPCs/MACs who have tested it, haven't used it yet due to personnel-skill sets (Telecommunication is being integrated into Control Systems n many projects) ● Great slide went further in describing Input/Output Technology changing the way WE connect to instruments (and Control them). ● Concern over TUNING the instruments & process optimization from EPCs ● Caller concern that Flex I/O such that cards in SPI are not dynamically handled (Honeywell responded that within SPI Wiring Users can assign different I/Os to the Mixed Universal Cards ... and when updates are made if new I/O type is landed the SPI assignment change is captured at the Channel Level (where the I/O is changed from delivered MIXED to specific -USE -case I/O Type.) ● Modbus scenarios are still discussed (even in recent vendor presentations.) ● Intelligent Motor Protection Relays are new directions for fading Relays 	
7	Forum Topics	<p>Forum Topics</p> <p style="text-align: right;">All Attendees</p> <ul style="list-style-type: none"> ● SPI Version 2015 <ul style="list-style-type: none"> ○ As-Built Claim&Merge, Query Builder, Engineering Data Editor, To Do List ○ As-Built has been re-written from scratch and removed from Admin, new user interface and graphically represented Q3 push back by Intergraph has been specifically done to revisit old bugs and breaks to ensure Best Quality SPI2015 ○ QB works like Access tying Tables together, Graphically based (Removing InfoMaker!) all coded toward DotNet (Spec module and Process module Calculation will still be in PowerBuilder 	

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		<p>for hopefully only one more version). After all have gone DotNet ... 64 bit migration will be enabled</p> <ul style="list-style-type: none"> ○ EDE cutting and pasting more Excel-like, Dynamic and intuitive - Very nice Feel. ○ Room Question (request) for Math Functions in EDE fields ○ Many ToDo Lists to come ... <ul style="list-style-type: none"> ● SPI Special Functions: <ul style="list-style-type: none"> ○ Hook-Ups ○ Calibration ○ Process Data ○ Loop Diagrams ○ Dimensional Data ○ Sizing Calculations ● PAS Integrity tool (aka Doc 4000) mentioned, especially as solution for burden of having Soft Tags and control info 'duplicated' in the SPI db. ● Caller comment on TW calculation - Intergraph answered Yes the code HAS been updated in an SPI2013 hotfix (may be HF4) See Readme files ● SPI Beyond Special Functions: <ul style="list-style-type: none"> ○ Telecommunications ○ External Data Editors ○ Instrumentation Rule Manager ○ Instrument Spec Sheet Editing ○ Instrument Cable Management ○ Instrument CAD Loop Generation ○ Instrument Maintenance Activities ● Trick/Tip on Data Sheet Editors, the Data Dictionary Templates must be set well. Plus Vendors are having problems using the Instrument Data Editors. ● Room Comment: Process Data Editor LIST of tags should/could be incorporated to Spec Editors. David mentioned: Not much time/effort will be committed to fix them now, since by NEX TSPI we hope to have Specs etc re-written - so Intergraph May be re-writing the Data Editors as well as the Spec Module! ● Rule Manager limitations mentioned _ more exposure, experience needed (although now significant work needed to customize.) David Offered = SPI2015 To Do List will be easier and more graphically customizable ● SPI 2015 Spec Forms will allow customizable Pull Down Lists. <ul style="list-style-type: none"> ○ Beyond SPI Functions: <ul style="list-style-type: none"> ○ Data Auditing ○ Data Validation ○ Vendor Interfaces ○ Engineering Reuse ○ Data Synchronization ● SmartPlant Enterprise Integration ● Viable tools are out there, catching data corruption early is Important ● Engineering Re-Use discussed much-ly. 	

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		<ul style="list-style-type: none"> • Dangers of IMPORTS drummed in, needing highly experienced & detailed workflows, and EDE will not be a magic solution ... Intergraph agrees we will still need Import, even with the RISK • Final request (reminder to David) made for Intergraph to provide SPI2015 on the Online Test Drive, especially while having 'installed' the several MAC interfaced I/O Catalogues in the Reference Explorer. See http://www.intergraph.com/ppm/testdrive.aspx 	
8	Close	<ul style="list-style-type: none"> • Next meeting will be August 5, 2015 at Fluor (see http://spi-ltuf.org for address and Map) • John Dressel closed meeting and thanked Intergraph for Hosting 	