

Owner Operator Concerns Using Smart Instrumentation



Owner Operator Acceptance of Data Centricity

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Owner Operator Concerns Using Smart Instrumentation

- Smart Instrumentation Database Setup and Administration
- Initializing Smart Instrumentation in an Existing Plant
- Integration of Smart Instrumentation with other Plant Systems
- Utilizing Owner Operator Smart Instrumentation Functions
- Smart Instrumentation Access by Contractors and Licensees
- Upgrading Smart Instrumentation by Owner Operators
- Owner Operator Smart Instrumentation Technical Support
- Smart Instrumentation Guidelines for Owner Operators
- Owner Operator Acceptance of Smart Instrumentation

Smart Instrumentation Setup and Administration

- **Smart Instrumentation Hosting Concerns**
 - Who will Host the Smart Instrumentation Database
 - Owner Hosted
 - Third Party
 - Main Engineering Contractor
 - Location of the Smart Instrumentation Database
 - Local Server
 - Remote Server
 - Cloud Based Server
 - Remote User Access to the Smart Instrumentation Database
 - Citrix
 - Terminal Services
 - What Technology will be used for Smart Instrumentation Database
 - Oracle
 - Microsoft SQL Server



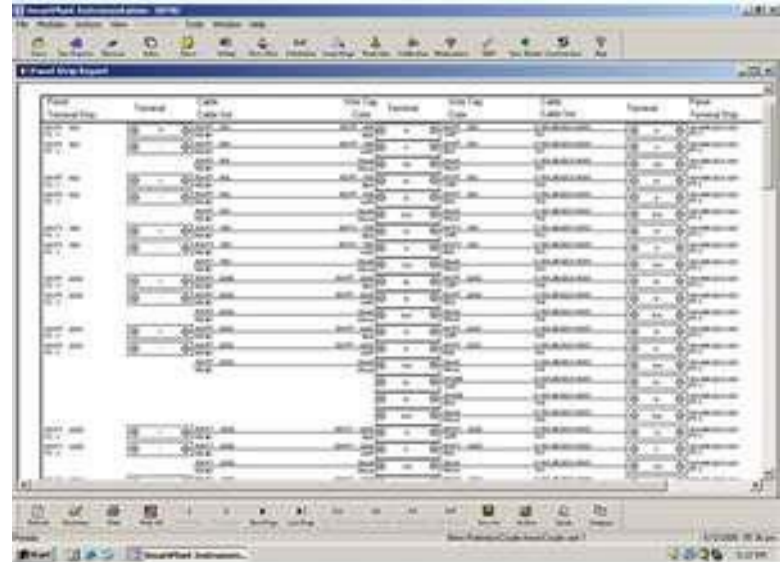
Smart Instrumentation Setup and Administration

- **Smart Instrumentation Administration and User base**
 - IT Administration
 - Experience with Oracle or Microsoft SQL Server
 - Experience with Citrix or Terminal Services
 - Domain Administrator
 - Full time – Part Time – Training
 - System Administrator
 - Full time – Part Time – Experience
 - Technical Support
 - In House
 - Intergraph
 - Third Party
 - Smart Instrumentation User base
 - Training – Experience



Smart Instrumentation Setup and Administration

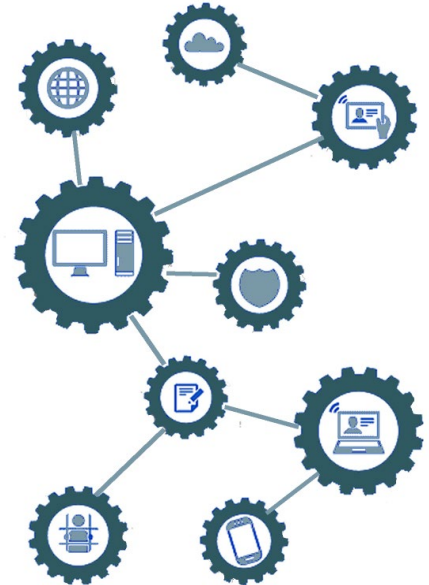
- **Operational Scope of SPI**
 - Interfacing with Other Plant Systems
 - Maintaining Instrument Index
 - Maintaining Spec Sheets
 - Maintaining Wiring
 - Maintaining Loops
- **Develop Initializing Standards**
 - Implementation Standard
 - Standard Forms and Reports
- **Initial Loading of SPI Data**
 - In-house Staff
 - Contractor
 - As part of a Project



The screenshot displays the SmartPlant Instrumentation software interface. The main window shows a table with columns for Instrument ID, Name, Type, and various status indicators. The table contains multiple rows of instrument data, including details like 'I-1001', 'I-1002', etc., and their corresponding specifications and locations. The interface includes a standard Windows-style menu bar and toolbar at the top, and a status bar at the bottom.

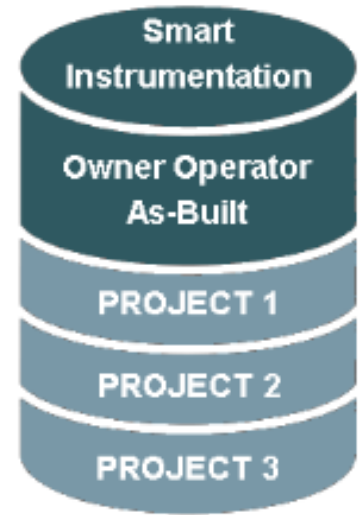
Integration of Smart Instrumentation with Plant Systems

- **Integration of Plant Instrument and Control Systems**
 - Basic Process Control Systems
 - Safety Instrumented Systems
 - Equipment Protection Systems
 - Fire and Gas Monitoring Systems
- **Integration of Plant Digital Data Management Systems**
 - Plant Asset Management Systems
 - Process Data Historian Systems
 - Energy Management Systems
 - Preventative Maintenance Systems
- **Integration of Emerging Plant Infrastructure Systems**
 - Bus Instrument Networks
 - Wireless Instrument Networks



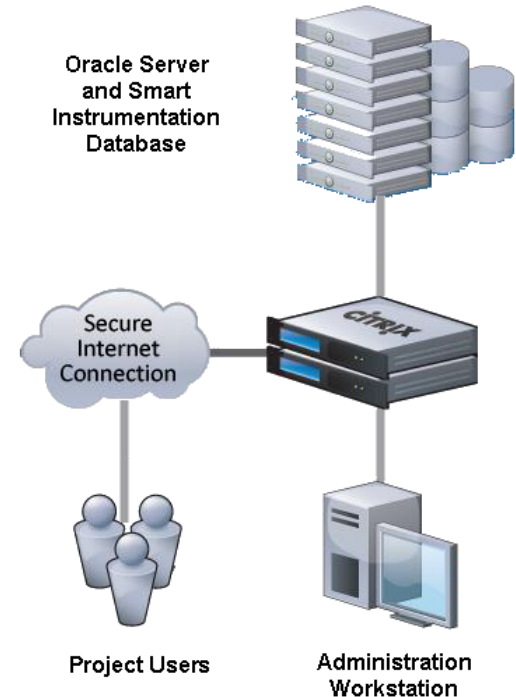
Utilizing Owner Operator Smart Instrumentation Functions

- **Smart Instrumentation As-Built Project Functionality**
 - An As-Built Project Is automatically created when initializing Smart Instrumentation as an Owner Operator Domain
 - The Owner Operator As-Built database is the source for all the Engineering Project Schemas
 - The As-Built is the Master and contains all Formatting for all Projects.
 - New Schemas for each Engineering Project are created
 - As-Built Data can then be Claimed to each Engineering Project
 - Claimed Data is Modified or Added in the Engineering Projects
 - The Engineering Project data can be Merged into the As-Built
 - Upon completion and merging of a project to the As-Built, the project can be deleted



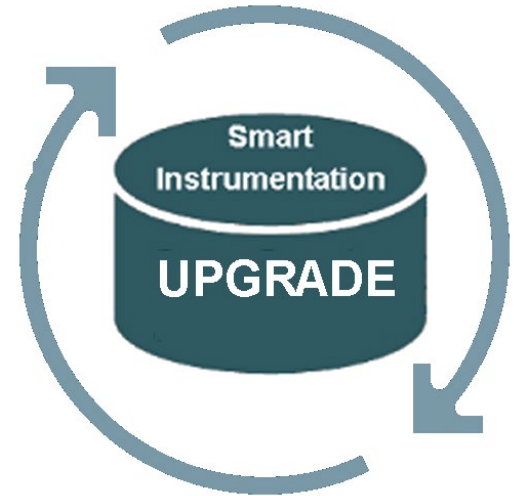
Smart Instrumentation Access by Contractor Project Users

- **Contractor Project Users access Smart Instrumentation using Citrix Server through a Secure Internet Connection**
 - Citrix allows Smart Instrumentation users access from anywhere on any device via the internet
 - Smart Instrumentation Administration can be performed through Citrix or a direct connection to the Oracle Server
- **Smart Instrumentation Implementation Specification**
 - Define Contractors Scope in SI Implementation Specification
 - Require any changes it Standard tables to be approved
- **Keeping contract users from changing Standard Data**
 - Smart Instrumentation As-Built Functionality isolates Project users and prevents them from accessing standard tables
 - Restricting user Access Rights offers another level of security



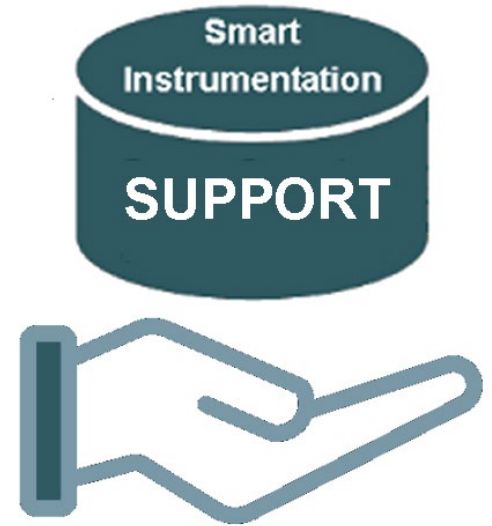
Upgrading Smart Instrumentation by Owner Operators

- **Types of Smart Instrumentation Upgrades**
 - **Version** – A full version Upgrade is necessary when the current Version is no longer supported by Hexagon
 - **Hot Fixes** – Need to be applied if they repair known issues in the database, they may also keep your current version up to date longer
- **Procedure for Smart Instrumentation Upgrade**
 - Backup current Smart Instrumentation Database
 - Timing Considerations:
 - All Users must be out of Database
 - Best done between major Projects
 - Wait until Current Versions or Service Packs have been updated by others
 - After Upgrade - Check all functions (Index – Specs – Wiring)



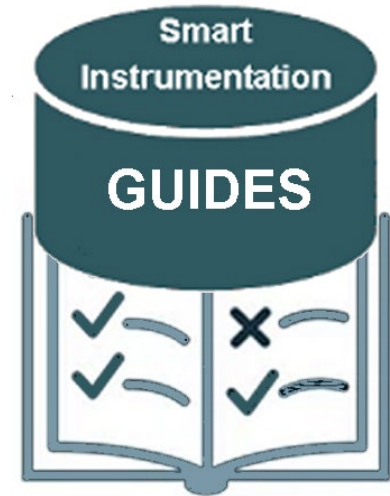
Owner Operator Smart Instrumentation Technical Support

- Don't go it alone – Sign a technical support contract with Hexagon or qualified Support Provider.
- Owner Operator In-house Technical Support needs to be a Full Time dedicated Smart Instrumentation Administrator
- Keep the Smart Instrumentation Administrator and Users Training current by taking advantage of Hexagon and outside training programs.
- Cross train Information Technology and Smart Instrumentation specialists for best optimization of manpower
- Take advantage of Hexagon Conferences, Webinars and SI-LTUF functions to keep the Smart Instrumentation Administrators up to date on latest advances in applications



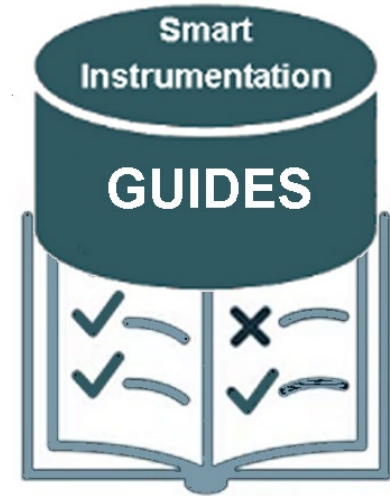
Smart Instrumentation Guidelines for Owner Operators

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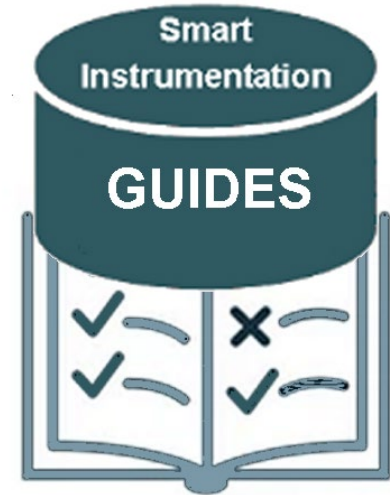
Smart Instrumentation Guidelines for Owner Operators

- Never Delete the “DEFAULT” Plant Area and Unit. You can hide the “DEFAULT” Plant by un-checking the “Default plant use” checkbox in the Domain Definition.
- Keep or Return to the Administrator “DBA” Username and Password when issuing an SPI Seed File when you deliver copies
- It is important that IT initializes the Oracle or MS SQL server properly and provide IT with: “Schem SPI Server Installation Guide.pdf” and providing the expected table space needed
- When adding new tags for instruments, cables, or Junction Boxed, users must be in the current working "UNIT" so tag numbers
- For problems printing or viewing, Specs Sheets or Reports, or even speed problems with Citrix, check the "User Preferences / General / Temporary Path” and reset the Temporary Path to a folder that all users can read and write to.



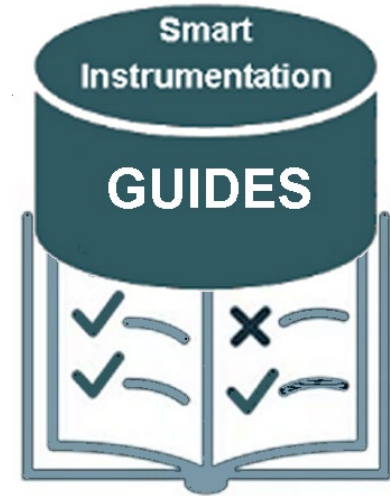
Smart Instrumentation Guidelines for Owner Operators

- When working with the Line data table; you need only to enter the Size and Spec instead of the entire line number. This saves time, shortens line table selection and users still have all required line information to do sizing calculations
- If the Instrument Type profiles are not set properly before you start adding tags to the database, De-activate the Profile options in the “Preferences / Instrument Index / Profile”. Then launch each option as needed from the “Index/ Action” menu when needed
- Be concise and conservative with Instrument Types. Don’t create an Instrument Type for every minor variation. Keeping Instrument Type profiles to a minimum will result in less chance for error.
- Use Global Revisions dialog box for Specifications, Process Data, Calculations, Loops, Hook-Ups, or Wiring to make revisions more consistent and better use of time.



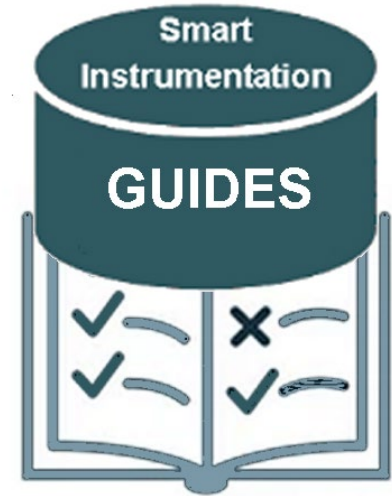
Smart Instrumentation Guidelines for Owner Operators

- When moving tags from one unit to another, Use the Loop Move command or drag and drop the Loops in the Domain Explorer to move all the tags associated to a loop at one time. **NEVER DELETE AND REBUILD TAGS!**
- Do not allow tag creation in the Spec, Process or Calculation Modules. Adding Tags from Modules other than the Instrument Index will allow tags to be created without complete data
- In the System I/O Type table – Do Not change the standard “AI”, “AO”, “DI”, “DO” or “FieldbusFF” I/O Types. If reference to System is needed then define a "User Defined Field for System association.
- Create a generic Notes Page for Spec forms and add it to each form that will need to have notes on a second page. A modified title box will not show up on the second notes page if the "Print notes on second page" is checked in the Spec Preferences. .



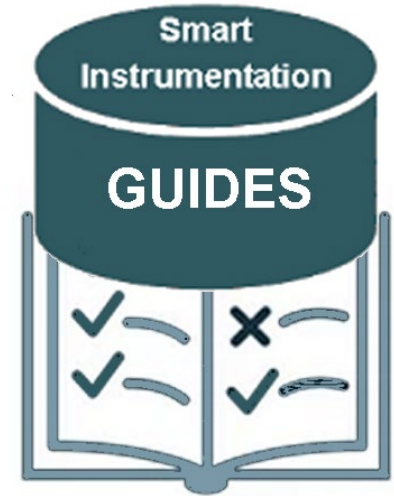
Smart Instrumentation Guides for Owner Operators

- **TRAIN YOUR USERS!** - The investment you have made in Smart Instrumentation can only be realized with users who are trained to use the tools well and get the most out of it
- **KEEP IT SIMPLE!** - Use the minimum amount of data in Smart Instrumentation to support the deliverables you are creating. The data in Smart Instrumentation will be maintained for the life of the Project and/or Plant in an As-built configuration
- **PLAN AHEAD!** - Smart Instrumentation depends on Instrument Types, Profiles and Support Tables being configured correctly. Every minute you spend properly configuring Smart Instrumentation at the beginning of a Job or Project, will save hours in rework
- **USE SMART INSTRUMENTATION!** - Use the tool as it is designed to be used. Don't try to make the software fit your work processes, change your work processes to fit the software.



Owner Operator Acceptance of Smart Instrumentation

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Smart Instrumentation Training

QUESTIONS?



“Tell me and I forget. Teach me and I remember. Involve me and I learn.”

~ Benjamin Franklin