Introduction

American Innovations (AI) is pleased to announce version 1.9 of our Pipeline Compliance System Axis® (PCS Axis®) software. This document identifies improvements available in PCS Axis 1.9. For questions or additional information, contact PCS Technical Support at pcstechservices@aiworldwide.com.

PCS Axis Improvements

The following information identifies software enhancements and fixes available in version 1.9 of the PCS Axis software.

Data Modification Utility

The Data Modification Utility is a new feature that allows you to permanently move facilities and facility records, including subfacility, inspection, and maintenance records, from one facility to another facility. Use this feature when splitting or combining pipeline segments.

Import and Export Routes

Existing routes in PCS Axis can now be exported to or imported from Excel or Comma Separated Values (CSV) files. Using the new import and export capabilities, routes can be exported to a file, modified in third party tools, and then re-imported into PCS Axis, replacing the original exported route.

Security

Updates to user roles and their permissions in PCS Axis were made to enhance the security options available in PCS Axis. The enhancements have been made to Role Customization, allowing for a more granular configuration of a role's accessibility. These roles can be customized to the desired access levels and access to menu items and grid levels can be granted or restricted based on specific user roles.

New Fields

A new *Repair Technician* field is now available for customized layout or sort themes in the *Maintenance* grid in *Edit CPDM Data*. This field can be found under the *Test Point Maintenance* group.

Mini-grids Dialogs

Add Record dialogs similar to those found in the *Facility Edit* data grid were introduced to the following mini-grids:

- Test Point Detail Information

- Rectifier Anode Information

- Rectifier Negative Information

Based on Icons

Icons now appear throughout PCS Axis to indicate which Based On mode is the currently active theme mode.

Shortcuts

New keyboard shortcuts are now available in the following locations:

- *Using Data Entry Grids*: The following keyboard shortcuts are available when adding a facility information, inspection, and maintenance record and when adding or deleting a record in a Continuous Survey:

  - Press **F4** to add a history record with an effective date for currently selected grid record

  - Press **F8** add record in grid

- *Working with Pipeline Records* (Edit ROW Detail): The following keyboard shortcuts are available when adding a pipeline information record or adding a pipeline maintenance record

  - Press **F4** or **F8** to add a history record with an effective date

- *Working with a Continuous Survey Folder*: The following keyboard shortcuts are available when adding a continuous survey folder:

  - Press **F4** or **F8** to add a record in survey folder maintenance

- *Using Any Date Field*: The following keyboard shortcuts are available in any date field:

  - Press **T** to fill in the current date and time

  - Press **+** or **-** to move the day forward or backward by one day

- *Using Any Numeric Field*: The following keyboard shortcuts are available in any numeric field:

  - Press **+** or **-** to reverse the polarity and negate the current positive or negative value.

Test Point Details Changes

CPDM Test Point Inspection Detail mini-grid fields that contain on/off behaviors now inherit the attribute values of the linked Inspection grid field. The inherited attribute values are based on the selected value of the mini-grid PCS Field field.

In addition, the following Test Point Detail fields have updated precision requirements:

- TestPointDetailInspection.OnReading: Size: 10 Decimals: 5

- TestPointDetailInspection.OffReading: Size: 10 Decimals: 5

- TestPointDetailInspection.UncompensatedOnReading: Size: 10 Decimals: 5

- TestPointDetailInspection.UncompensatedOffReading: Size: 10 Decimals: 5

- TestPointDetailInspection.OnReadingDelta: Size: 10 Decimals: 5

- TestPointDetailInspection.OffReadingDelta: Size: 10 Decimals: 5

PCS Axis v1.8 Release:

Software enhancements and fixes available in PCS Axis 1.8 include those described in the following paragraphs:

Telluric Compensation

Telluric Compensation is an optional feature set that provides support for compensating facility and close interval inspections with telluric current effects. Stationary data logger (SDL) files used in compensation runs are managed in Stationary Survey Maintenance. PCS Axis features enhanced for Telluric Compensation include the CPDM and ISM modules, Bridge Import, Field Computer, and Reports/Graphs.

NOTE: Customers with an existing PCS Axis license who want to use the optional *Telluric Compensation* feature will need a new PCS Axis license. Contact PCS Technical Services for more information.

System Options

- *Default Telluric Threshold*: This option only displays when running PCS Axis with a telluric-enabled license. The Default Telluric Threshold is in a range of 0.010 volts but can be changed to meet your business needs. PCS Axis calculates a baseline average for survey measurements in an SDL data set. If any survey measurement in the data set is above or below the baseline average by 0.010 volts, this indicates the data set exhibits telluric current effects.

- *Show Detail Inspection Entry Grid*: This option controls the display of CPDM Test Point Detail mini-grids. When using the optional Telluric Compensation feature, this option is enabled by default and cannot be disabled.

CPDM Test Point Detail mini-grids

Information and Inspection mini-grids display by default when using the optional Telluric Compensation feature and cannot be disabled.

IMPORTANT: To prevent adding duplicate subfacility records in the system, it is important to enter a unique subfacility name when adding multiple subfacility records for a test point record in the *Test Point Information* grid. Enter a unique subfacility name in the *Name* field of the *Test Point Detail Information* mini-grid. Do not use the default name for this field or leave it empty (blank). For more information, refer to Linking Multiple Subfacilities to a Parent Test Point Facility in online help or the *PCS Axis User and Administrator Guide* (page 315).

Job Service Viewer

- *Current Jobs*: When a job is in a *Waiting* or *Validated* state, clicking the *Suspended* button suspends processing of the selected job. Other jobs in the queue continue to process. Clicking the *Suspended* button for a suspended job resumes processing.

- *Job History / Detail Log*: Option labeled *ReSend* in the *Detail Log* for an Email Notification report allows you to resend the report.

Field Computer

- *Dynamic Picklist User-Defined Fields (UDFs):* Can now be included in prompts sent to the Allegro Field computer.

- *Mini-grid Fields*: ON/OFF subfacility fields in the *Test Point Detail Inspection* mini-grid can now be included in prompts sent to the Allegro Field Computer. The following criteria must first be met to include ON/OFF subfacilities in Allegro prompts:

  - Subfacilities must be set up as *Currently Active* in the *Test Point Detail Information* mini-grid.

  - The parent facility of ON/OFF subfactilities must also be included in prompts sent to the Allegro. For example, parent facilities include any of the following PCS fields: *AC P/S* and *AC IRF*; *Casing P/S* and *Casing IRF*; *Foreign P/S* and *Foreign IRF*; *Insulator P/S* and *Insulator IRF*; or *Structure P/S* and *Structure IRF*.

- *Field Computer Receive*: Pipeline *Series* and ROW can be applied to close interval (CI) survey readings received from the Allegro Field Computer.

Edit ISM Data / Survey Maintenance

Enhancements in *Survey Maintenance* allow you to select an existing facility when modifying a range of station numbers using *Shift* and *Rubber Band*.

Field and UDF Customizations

Optional property setting labeled *Show Time In Milliseconds* allows you to set date/time fields with millisecond resolution. The property setting applies to date/time fields in Bridge, Field Computer, Reports, and data entry grids.

PCS Axis v1.7 Release:

Software enhancements and fixes available in PCS Axis 1.7 include those described in the following paragraphs:

System Requirements

Microsoft .NET Framework v4.5 is required for PCS Axis v1.7. The PCS Axis installation automatically installs .NET Framework v4.5 if it is not installed on the target computer. An active Internet connection is also required to complete the installation of .NET Framework v4.5.

System Options

- *Date Carry Forward Enabled Option*: Enabling this option allows you to use the last entered survey date as the survey date for the next record when working in an *Inspection* grid or form.

- *Show Detail Inspection Entry Grid*: Enable this option to display the CPDM *Test Point Information and Inspection Detail* mini-grids.

Metric Measurements

The system option *Activate Metric Mode* has been replaced with setting metric measurements at the ROW level in *Edit ROW Detail*. The selection list for *Default Location Format* now includes the *Metric Milepost* option. This feature is typically used with a pipeline network that spans an area requiring both metric and U.S. Customary measurements.

Negative Milepost Locations

PCS Axis supports facility locations on a pipeline segment with negative milepost numbers.

Long Name Support

- The names of hierarchy folders as well as the fields labeled *ROW Code* and *ROW Name* support up to 100 characters. Names longer than 100 characters are shortened by truncating characters to the right.

- The names of routes support up to 100 characters when adding a new route in Define Routes (*Data Entry > Define Routes > Add*).

Pipeline Series

Enhancements in pipeline *Series* now calculate the relative milepost based on the previous Series. *Series Order* has been replaced with *Previous Series* to allow linking of multiple *Series* in a pipeline *Series* chain.

Replication/Reinitializing a Subscription

Subscribers are no longer able to reinitialize a subscription database. This functionality is now available only with the publication database.

CPDM Test Point Detail Mini-grids

Support for test points with multiple potential measurements is available using the Test Point Information Detail and Test Point Inspection Detail mini-grids. These mini-grids become available for use after enabling the system option *Show Detail Inspection Entry Grid*. The mini-grids function in a similar manner as the rectifier mini-grids when linking rectifier anodes and negatives.

Dynamic Picklist User Defined Field (UDF)

Field and UDF Customizations now support set up of dynamic picklists. A dynamic picklist is a dynamic drop-down list with data items that change based on a data item selected in another picklist. This dependency uses a cascading parent/child relationship. Selecting a data item in the drop-down list of picklist A (parent) determines which data items are available for selection in the drop-down list of picklist B (child).

NOTE: *Dynamic Picklist* UDFs are not currently supported on the Allegro Field Computer.

Custom Module Management (CMM)

PCS Axis supports up to ten (10) user defined modules with each module supporting up to ten (10) user defined facility types.

PCS Axis v1.6 Release:

Software enhancements and fixes available in PCS Axis 1.6 include those described in the following paragraphs:

PCS Axis Upgrade Installation

- The upgrade process now copies forward the existing connection settings file set up in *Connection Manager* when upgrading PCS Axis to v1.6 and higher. Manually copying the file to the desktop prior to upgrading PCS Axis is no longer required.

- The upgrade process for v1.5 to v1.6 and higher automatically uninstalls v1.5. Manually uninstalling v1.5 is no longer required. Upgrading a version previous to v1.5 does however require uninstalling the older version of PCS Axis.

Field and UDF Customizations

- *On/Off Pair UDF*: Type of UDF that allows you to set up a custom pair of on/off fields for recording inspection readings in a data grid or form. This type of UDF is available for both facility and continuous surveys.

- *Summation UDF*: Type of UDF that performs an aggregation on one or more fields set up as a filter in the *Summation* UDF. Aggregate functions include *Average*, *Count*, *Latest*, *Maximum*, *Minimum*, and *Sum*. This type of UDF is a *Permanent Information* field available for use in data grids, forms, reports, and as a filter in scheduling.

Bridge

- *Prevalidate*, *Run, Import, Export*: Clicking *Prevalidate* in the Bridge *Definition* window validates the Bridge definition is set up correctly. The validation process only validates data; it does not import or export data. Clicking *Run*, *Import*, or *Export* in the Bridge *Definition* window processes the definition by importing or exporting data based on the setup of Bridge definition.

- *Bridge Import*: Check boxes are no longer enabled by default for all "Activate" fields in a Bridge import.

Synchronization / Subscription

A message displays when starting a PCS Axis subscription that identifies the last time the subscription synchronized with the publication database.

CPDM Rectifier Data Grid

The following fields are no longer "read-only" and can be edited: shunt rating, resistance, factor, and rectifier rating.

- **Reindex Stored Procedure**: A stored procedure labeled *dbo.DefragmentIndexes* installs in the PCS Axis database during the v1.4.5 upgrade installation. The purpose of the stored procedure is to rebuild indexes in the PCS Axis database that have exceeded the "fill factor limit". To ensure optimum system performance, use the stored procedure to create a database maintenance job on the database server that runs daily or once a week during non-peak hours.

Product Support and Training

If you have a suggestion, question, feature request, or a bug to report, your feedback would be appreciated. Also, if you have a training need for your organization or would like to know more about upcoming PCS Axis training classes, use any of the following contact information to reach PCS Technical Services:

Support E-mail: pcstechservices@aiworldwide.com
Support Telephone: 1-800-229-3404 (select 1, then press 2)
American Innovations: http://www.aiworldwide.com