5 Analysis of Pipeline Data
PODS Training – both PODS Basics and PODS Advanced – create a better understanding of PODS Standards and PODS implementations through geospatial and relational database applications.
5 PODS BASICS

An introduction to Analysis of Pipeline Data
Webinar Series Overview

- Unit 1 – PODS Basics
- Unit 2 – Linear Referencing Concepts and Terms
- Unit 3 – PODS Data Management Concepts and Terms
- Unit 4 – The PODS Data Model Components and Connections
- Unit 5 – Analysis of Pipeline Data
- Unit 6 – PODS Implementation
PODS improves:

• Data organization
• Data quality
• Data integration
• Data efficiency

But, what about data access, analysis, reporting, and other basic needs?

How does PODS help with these?
PODS Data Model

What can I do with my data once its in PODS?

Not Much...PODS is just the container for your data.

You’ll need additional 3rd party tools to convert data, load, maintain, map, analyze, update, and report.
PODS – The Container of choice for Pipeline Data

Data Quality
- Linear Referencing for All Features
- Tables for Material, Risk, Compliance, & Operational Data

Data Accessibility
- Custom Alignment Sheets
- Multiple Enhanced GIS Implementation Options
- Integration with SAP & Maximos

Data Analytics & Reporting
- MAOP Validation Calculators
- Risk and Integrity Analysis Tools
- HCA & Class Location Calculators
- Easy Compliance Reporting

Operational Integration
- Digital Construction As-Built
- Mobile Paperless Maintenance Integration
PODS facilitates many pipeline management activities – Data Quality

Linear Referencing

Tables
Data Accessibility – Alignment Sheets

Graphically depict the exact route of a pipeline and associated facilities.

Image Courtesy of New Century. Copyright 2020
Data Accessibility – Geographic Information System (GIS)

GIS enables users to view, manage, and analyze data spatially.
Data Accessibility – Asset Management

• Asset Management Integration
• Maximo, SAP, and others
Data Analytics & Reporting - MAOP

- Maximum Allowable Operating Pressure
- The maximum internal pressure at which a pipeline or pipeline segment may be operated.

2.5 million miles of pipelines in the U.S.

Why is this important?
1. Public safety
2. Operational efficiency
PODS helps operators to have a clear and constant understanding of a pipeline’s condition.
Operators must identify specific locales and areas where a pipeline leak or rupture could have the most significant adverse consequences.

- Populated places
- Drinking water sources
- Sensitive ecological areas
- Population density levels

*Image Courtesy of New Century. Copyright 2020*
Compliance data stored in PODS can be easily accessed for analysis and report generation.
As-builts are post construction drawings, maps, or alignment sheets displaying the pipeline with survey measurements along the route.
Operational Integration - Mobile Maintenance

1. Identify
2. Photograph
3. Add data
4. Transmit

Mobile devices enable data collection, validation, and update from the field. Collected data is used to update PODS.

Images Courtesy of SPOT. Copyright 2020
Analysis of PODS Data

Having your pipeline data in the PODS data model facilitates data quality, accessibility, and integration.

Asking questions of your data and getting answers is one of the most powerful benefits of PODS.

Images Courtesy of Rosen. Copyright 2020
What kinds of questions do PODS users ask of their data?

- How many One Call tickets did I get last month? Last year?
- Where do I have valves along this section of pipe?
- How much of our pipe is of a particular DOT class?
- What has been repaired/replaced since the last ILI run?
- How much pipe do I have of a certain status?
- When was maintenance last performed?
Software helps you perform analysis on PODS data tables.

Are there coating defects here? Which route is best?

Image Courtesy of ONG. Copyright 2020
Image Courtesy of Pivvolt. Copyright 2020
**Spatial analysis of PODS data**

PODS data is linearly referenced in a GIS making it accessible in maps and other GIS-powered applications.

1. Find the closest valves upstream and downstream to this location.
2. What types of valves are nearest to this location?

*Image Courtesy of Rosen. Copyright 2020*
What kinds of **spatial** questions do PODS users ask of their data?

Which facilities were impacted by the flood?
What kinds of spatial questions do PODS users ask of their data?

- What coating types are there along this route downstream from the valve?
- Where is the nearest control valve to this location?
- How long is the longest segment of class 2 coating?
What kinds of questions can you ask of this PODS data?

Here we have 2 GIS layers:

1. Pipeline MAOP symbolized as linear events
2. Valves on the pipelines symbolized by their pressure rating values

What questions can you ask?
Vendor Demonstration
In Summary

1. PODS is a container for pipeline system data. Third-party tools will be needed for visualization and analysis as well as reporting, managing, and updating PODS data.

2. Once implemented, PODS often becomes the “System of Record” or the authoritative source for an organization’s pipeline data. PODS becomes the hub of all pipeline-related data connecting to in-house applications as well as many third-party software.

3. Vendor provided solutions connected to PODS support data quality, accessibility, operational integration, and analysis and reporting.

4. Operators can perform both tabular and spatial analysis of PODS data with the help of vendor-supplied tools.
End of Unit 5

Any questions?
Resources for This Unit

PODS Association web site
https://www.pods.org

Rosen USA
https://www.rosen-group.com/global/company/explore/we-are/locations/north-america/rosen-houston.html

GIS Pipeline dictionary