

SLC Corner



Next Generation

PODS: A Data Model Developed By Industry Experts

As database technologies and the volume of data being produced continue to expand on a daily basis (this is a good thing), many challenges in database management have been revealed. Among the problems that have arisen as a result of this exciting technological trend are: establishing a comprehensive yet flexible data management framework and creating a holistic management system that supports not only the pipeline industry, but any industry. The pipeline industry approached these challenges head-on in the late 1990's with the formation of the PODS Association (Pipeline Open Data Standard), a non-profit Association made up of seasoned pipeline industry professionals, which continually evolves and adapts to technologies, regulations and operational trends and has done so since its inception.

Most recently, the PODS Association has undertaken an initiative to transform the data model, completely redesigning it in order to reshape the standard into an easy-to-understand, simplified, and rigorously documented database model that utilizes current technologies. The deliverables from this Next Generation ("PODS Next Gen") initiative will result in a significant step forward for pipeline industry data management and drastically expand on the already strong value proposition for active participation in the PODS Association and for implementation and/or upgrades to this latest iteration of the PODS data model.

PODS ASSOCIATION STRUCTURE

Established in 1998 the PODS Association is a non-profit vendor-neutral pipeline industry association that is member driven and volunteer run. The Association, led by Kathy Mayo,

the executive director, is governed by a 12-member Board of Directors, a Technical Committee on Governance and supported through the Technical Committee On Data Modeling, a Communications Committee, and formalized Work Groups that spearhead various initiatives. The Board of Directors and each of these Committees and workgroups are comprised of a healthy distribution of personnel from both pipeline operator as well as industry vendors. This structure, supported by the Association's 170+ member organizations, provides a strong and well-versed knowledgebase and skillset that spans across all facets of the pipeline industry and has allowed the Association to support and improve upon standardization and data management improvements throughout the pipeline industry.

VALUE – WHAT'S IN IT FOR YOU?

The value of the PODS Association to industry operators, vendors, government entities and organizations is derived through networking opportunities among Member organizations and vendors as well as through the creation of a robust and pertinent Data Model Standard that involves:

1. **Shared purpose and powerful collaboration** among member organizations in developing and maintaining the data model.
2. **Development of tools** to analyze and manage assets.
3. **Improved interoperability** across the industry gained by leveraging a standardized data model that is viewed as the benchmark for pipeline data management.

VALUE #1) SHARED PURPOSE AND POWERFUL COLLABORATION VIA NETWORKING AND KNOWLEDGE SHARING OPPORTUNITIES

As with many industry organizations, membership in the PODS Association provides an inherent value to its members through networking and knowledge sharing opportunities with its extensive network of industry professionals. The PODS Association accomplishes this open communication through:

- **Annual member Forums** (in-person and teleconference).
- **Pipeline Week Conference** (an annual industry conference with global recognition).
- **Webinars** (at least six per year).
- **Newly redesigned interactive Member Portal website** (includes, among other things, a 'Community Forum' for text-based discussions and support).
- **Newsletters.**

The development of this data model incorporates decades of combined operator and vendor experience and provides the most comprehensive starting point for pipeline data management that any company could ask for. The model is flexible enough to incorporate organization-specific requirements, resulting in the need to develop an extensive proprietary data model for managing asset data becoming a thing of the past.

Implementation of the PODS data model provides vendors the ability to leverage their decades of experience and technical prowess for tailoring this data model to a given organization's specific requirements in order to implement an organization-specific model.

VALUE #2) TOOLS TO ANALYZE AND MANAGE ASSETS

To be fully leveraged, a data model (propriety or standardized) requires tools to extract and analyze the data within it to convey information and knowledge about the contents. In this case, PODS Association vendor members have provided the industry with a wide set of data management, analysis and reporting tools that are largely plug-and-play when paired with a PODS data model. Each PODS Association Vendor member has created their own, unique set of tools that leverage the standardized PODS model to execute various tasks:

- **pure data management** (read/write/modify/delete the database),
- **advanced spatial analysis** that supports integrity, compliance or any number of other use cases within the industry, and,
- **generating scheduled or ad-hoc reporting tools** that again provide simple to use and reliable methods to a wide variety of use-cases.

Vendor development and operator implementation of these broad sets of tools is made possible by the PODS Association's commitment to standardization and the members' commitment to advancing the pipeline industry as a whole.

VALUE #3) INTEROPERABILITY - SAVES MONEY AND TIME

In an industry that undergoes a continuous cycle of acquisition and divestitures, the value of interoperability, in any aspect of the transaction, becomes a marketable financial and time advantage for both entities executing a deal. When both entities are PODS Association members and have implemented a PODS data model, there is an immediate known synergy between the entities that provides the operations teams confidence in their ability to quickly transfer/integrate the pipeline to the respective system and begin executing their operational activities, reporting and analysis. While data integration activates aren't eliminated altogether,

PODS NEXT GENERATION DESIGN PRINCIPLES

Design for the Future – The next PODS Pipeline Data Model will be transformational not an incremental update to the existing standard.

A Solid Core Coupled with Agility and Flexibility – The Data Model will allow for independent extension of the model in a flexible fashion yet in alignment with core modeling and design principles.

Support Time and History – The Data Model will support time-based events and track asset lifecycle history.

Support Location and Spatial Representation – The Data Model will provide flexibility to include or exclude spatial representation of assets and events.

Support Interoperability – The Data Model will support data exchanges between systems and work streams within an organization as well as data exchanges between organizations.

Easy to Understand – The Data Model will be easy to understand, implement, extend and use.

data integrations between two PODS Association members tend to focus more on the standards, processes and workflows used to collect and manage the data rather than focusing on the complex and timely processes of transferring data between two dissimilar systems and evaluating the raw data. This benefit expedites the overall integration process and provides both entities advantages during acquisitions and divestiture processes.

This broad structure to development, support, and enhancement the PODS data model, comprised of both operators and vendors, provides a strong foundation for any pipeline operator to be able to execute best in class data management without the timely and costly burden of internally developing proprietary solutions in-house.

PODS NEXT GEN – THE NEXT GENERATION DATA MODEL

As with any technology (which data models most certainly are) it is important to remain proactive in the assessment of innovative solutions, which expand on the technology and more importantly to act when said innovations become proven, accessible and provide a return on investment.

The PODS Association has done just this with technologies such as improved data exchange protocols, system integrations via service-oriented approaches, and compatibility with Esri's ArcGIS Pipeline Referencing (APR). This redesigned data model will truly standardize and modernize data management and reporting across the pipeline industry.

The PODS Association's Next Generation or "Next Gen" initiative is focused on a complete transformation of the PODS Pipeline Data Model and is driven by PODS Association Strategy objectives as defined in its 2016-2019 Strategic Plan, as well as from nearly 20 years of PODS Pipeline Data Model implementation experience and lessons learned. It's slated for completion in 2018 with the formal release of a new data model – the PODS Pipeline Data Model Version 7.0 – as well as a Data Exchange Specification and migration and implementation guidance and instructions. The Next Gen Data Exchange Specification will facilitate data translations between the PODS Pipeline Data Model Versions 7.0 and earlier as well as other data models and will also enable system integration via service-oriented approaches.

NEXT GEN DETAILS

The PODS Next Gen standard will include several new elements and capabilities not present in current PODS standards. This will include a business intelligence (BI) presentation layer for easier and more efficient queries and analysis of data in a PODS database, an XML-based data exchange specification for data interchange and migration, support for big data analysis, and implementation guidance and templates for open source platforms. Additionally, PODS Next Gen is adopting the Open Geospatial Consortium (OGC) Geographic Markup Language (GML) as core construct for logical modeling of the new standard.

The native compatibility with Esri's ArcGIS Pipeline Referencing extension within the PODS 7.0 Geodatabase implementation is an exciting advancement to the pipeline industry and has received broad support and excitement across the

industry. This enables operators to better define their asset hierarchy, manage the linear referencing system, and maintain asset data within the common and familiar Esri platform while still maintaining a standardized data model that adheres to the PODS data exchange specification and can leverage the broad industry tools and features that are readily available.

PODS LITE (A WORKING SUBSET OF NEXT GEN) AVAILABLE NOW!

The Next Gen initiative has already resulted in the release of the PODS 7.0 Lite model, an abbreviated version of the full PODS 7.0 data model, and allows both PODS members and non-member to explore how implementation of this recognized and established data model may improve their pipeline data management, integrity and risk management, operational and regulatory reporting activities.

PODS lite is available in an Oracle, MS SQL Server, PostgreSQL and Esri Geodatabase implementation pattern; the Esri Geodatabase pattern being compatible with the Esri' APR extension.

HOW YOU CAN BECOME INVOLVED

More information about the PODS Association and the Next Gen initiative can be found on the Association's website www.pods.org and through our many networking and communication channels. The Next Gen initiative is currently making calls for volunteers to support sub-work groups associated with the development of specific modules (data model extensions that support a specific use-case relevant across industry) such as 'In-Line Inspection' and 'Tracking Database History'. Contact Kathy Mayo, PODS Association Executive Director, at Kathy.mayo@pods.org or 907-347-3279 for more information about volunteer opportunities. 



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