

## What is PODS Next Generation (“Next Gen”)?

The PODS Association is committed to continual modernization and transformation of pipeline standards and related implementation services. The PODS Association is re-designing and modernizing its standard and implementation guidance to be more agile, transparent, easy to use and to support interoperability – Next Generation, or “Next Gen”. PODS Next Gen will include a new core set of tables, modules to extend the core, a new data exchange specification, more robust documentation to guide implementation and guidance for migrating data to the new standard. The new PODS standard will support use of Esri technology including the ArcGIS Pipeline Referencing (APR) solution as well as other relational database (RDBMS) and mapping/geographic information system (GIS) technologies. The PODS Association started development of its Next Gen standard in 2016 and plans to fully complete the effort in 2018, with incremental deployment to facilitate early adoption.

## Why is Next Gen Necessary?

The PODS Association is investing in Next Gen for several reasons. First, PODS Association members have shared lessons learned and recommendations for improvement based on their use of prior versions of the standard. Second, the Association must ensure its standards fully support expanded regulatory reporting requirements from the Federal Energy Regulatory Commission (FERC) and the Pipeline and Hazardous Materials Safety Administration (PHMSA). Third, PODS standards are being updated to reflect changes and advances in technology. Fourth, PODS standards require enhancements to support new goals and objectives as defined in the Association’s 2016 – 2019 Strategic Plan, including support for international users outside North America. ([www.pods.org](http://www.pods.org) “About/The Association”)

## What are the benefits of Next Gen?

Pipeline operators, services providers and regulatory agencies will all benefit from enhancements to PODS standard. Next Gen will result in a simplified data model with enhanced capabilities resulting in cost savings and enabling increased effectiveness in pipeline data management and reporting activities. PODS Association members will **achieve greater agility** to build and extend the core data model in order to **better respond to new business requirements**, realize **improved ability to**

**share data** within and between organizations using a well-defined data exchange specification, **optimize performance** for management of bulk loading, analysis, re-route, inspection and history data, efficiently **satisfy regulatory reporting requirements** and better **ensure consistent implementation** of pipeline standards for **enhanced interoperability**.

## Who is developing the PODS Next Gen standard?

The Association has established a Next Generation Working Group (Next Gen WG) to lead Next Gen standards development efforts, comprised of representatives from pipeline operators and service providers (PODS Association members) as well as contractors. This group may also charter sub-groups to focus on specific Next Gen development topics. The PODS Association is seeking volunteers to actively participate in and contribute to upcoming/future Next Gen development activities. The PODS Association Board of Directors is directing and guiding Next Gen development and deployment activities.

## Will Next Gen replace the current PODS Relational and PODS Spatial data models?

Yes. However, PODS Association members may continue to use current versions (4.x, 6.x etc.). PODS Next Gen will result in a completely new data model, replacing the existing PODS versions 4, 5 and 6 Relational and Spatial models. Both “implementation patterns” – relational and spatial – will be supported in the Next Gen standard. Guidance will be provided to migrate data managed in current versions of the PODS standard to Next Gen standards.

## On what platforms will Next Gen be implemented?

The PODS Next Gen standard will be implemented on several different platforms and technologies: relational database management systems (RDBMS) including SQL Server, Oracle and open source databases such as PostgreSQL and GIS platforms including Esri (geodatabase) and open source GIS formats as well. PODS Next Gen will support several different **implementation patterns**. Each implementation pattern is a unique combination of RDBMS platform, spatial data storage type and data editing paradigm (versioned, native SQL, other).

### Will the PODS Next Gen Standard work with Esri's ArcGIS Pipeline Referencing (APR) Solution?

Yes. Esri's APR solution can work with any data model as long as that model meets certain requirements and includes a small number of elements. The PODS Next Gen data model will meet these requirements and therefore PODS Association members will be able to use Esri's APR solution with the Next Gen model to create and manage pipeline data.

### How will PODS Next Gen Standard work with APR?

The PODS Next Gen data model will include the core APR tables including Calibration Points, Centerlines and Route Networks and will support the same methods for linear measurement including continuous measure, engineering stationing and inspection odometer or KP values. These are the core requirements of the APR data model and by including these APR elements in the PODS Next Gen data model, PODS Association members may use Esri's APR tools for pipeline data management.

### If the PODS Next Gen standard is implemented in an Esri geodatabase format, must I use APR to manage data?

No. PODS Association members will be able to implement the PODS Next Gen standard in an Esri GIS geodatabase and the Esri ArcGIS Platform. Data may then be managed in a geodatabase format using the Esri APR solution or using other vendor or custom-developed solutions other than APR.

### Will Next Gen include elements of the current PODS standard?

Yes. The current PODS standard includes core tables as well as modules. This construct will be present in the Next Gen standard as well. However, there will be some changes – the new PODS “Core” will be restructured with new content, logical relationships and new approaches that ensure consistency across all PODS implementations. This core will be extendable with “Modules”, similar to current version of the standard. Current modules including in-line inspection (ILI), North American regulatory reporting and others will be present in PODS Next Gen. However, the approach to module definition and governance may be revised.

### What will be fundamentally new in the PODS Next Gen standard?

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.

### What will the new Next Gen data model “Core” look like?

The core tables within the PODS data model are being completely re-evaluated and re-designed in Next Gen. The Next Gen core will act as a system of record for pipeline centerlines for pressurized containment assets for transport of product, for safe operation of the pipeline and to mitigate the potential consequence of failure. As a result, the Next Gen core will also include tables to manage maximum allowable operating pressure (MAOP) and high consequence areas (HCA). The tables in the new Next Gen core will be grouped logically into one of the following categories: **Assets and Conditions, Linear Referencing, Pipeline Hierarchy and Metadata**. The Next Gen conceptual and logical data models (and associated diagrams) illustrate the new core – these will be posted on the PODS Association web site soon following the September 2016 Pipeline Week.

### How will modules be managed in PODS Next Gen?

The PODS Next Gen standard will include modules, including current/existing modules as well as additional modules not available at the current time. Just like in the current PODS standard, modules will be the mechanism to “extend” the core to manage data for defined work streams, business processes and reporting requirements. The Next Gen WG is working to define enhanced governance procedures for module management. These procedures will be used to guide development of new modules and module change management processes. Currently the PODS Association is considering three types of modules – **PODS Approved and Sanctioned** (i.e., modules developed and offered by the Association),

**PODS Reviewed** (submitted by Association members or vendors and validated by the PODS Association as being properly structured in accordance with Next Gen standards) and **organization specific** modules (developed by Association members for their own use with no review or approval from the PODS Association).

### **What will the process be for migrating from current/prior PODS versions to Next Gen?**

PODS Next Gen will include a Data Exchange Specification that will act as the primary means to exchange data and to migrate from existing versions to the new Next Gen version of the standard. The PODS Association will provide documentation and guidance on how to use the Data Exchange specification for migration. In time, tools may be available from the vendor/service provider community to automate the process.

### **Will there be a requirement to migrate to the Next Gen standard?**

No. Association members may elect to continue using existing versions of the PODS standard (version 6.0 and earlier). The PODS Association will continue to offer existing versions of the standard. However, once the Next Gen core is established and released, new work (new modules, documentation, guidance, etc.) will be focused on the new Next Gen standard only.

### **Will there be additional releases of the current PODS standard prior to release of a new Next Gen standard?**

Yes. The PODS Association will be releasing an update to the current standard version 6.0. PODS standard version 6.1, scheduled for release in 1Q 2017, will include bug fixes and new modules for External Corrosion Direct Assessment (ECDA) and Offshore Asset/Data Management. An additional release, version 6.2, is scheduled to include a new module for New Construction. A release date for Version 6.2 is not yet established (development of the New Construction module is underway). Following the 6.2 release, future development will align with the new Next Gen standard.

### **Will PODS Next Gen include code lookup tables (domains)?**

Yes. The PODS Next Gen standard will include standard code lookup tables for North American and international pipeline systems. PODS Association members will be able to extend those tables to include additional organization-specific valid values. The Next Gen WG is considering technical alternatives for domain storage and management, conditional domains and how domains can be validated to ensure standardization and interoperability.

### **What tools (software) are being used to create and maintain the Next Gen standard?**

The Next Gen standard is being modeled using Sparx Systems Enterprise Architect (EA). Sparx Systems EA is being used to manage the Next Gen logical data model, data dictionary and Data Exchange Specification. An open source software product called ShapeChange is being used to create physical data models and templates for implementation (SQL DDL for implementation in Oracle, SQL Server and PostgreSQL), Esri geodatabase and XML schemas. These tools will be used by the PODS Association to create, maintain and publish (deliver) the Next Gen standards. Any PODS Association members wishing to extend the Next Gen data model as provided by the Association (e.g., to create new modules), can use these tools to extend the data model.

### **What's next for Next Gen development and rollout?**

Next Gen will be developed and deployed (made available to Association members) in an iterative fashion starting in early 2017. A formal set of milestones and release dates, as well as roadmap for version migration, are being finalized. The Association anticipates the Next Gen development to be fully completed in 2018. The Next Gen WG will be forming sub-groups to address and finalize specific Next Gen design issues.