Modernizing and Strengthening Pipeline GIS

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Agenda

Overview of ArcGIS for Pipeline  Tom Coolidge
Demo – System of Record  Jeff Allen & Anjali Bhangay
UPDM and the Utility Network  Tom Coolidge
System of Engagement  Jeff Allen & Vanessa Ramirez
Summary and Q&A  All
Pipelines

660' 660'

ROW 75'

Compressor

+/- 40 miles

n'

660'

Compressor

Pipeline Control

n'

ROW 75'+
Systems of Record
Organizations are Fully Leveraging Their Information Assets

Opening up, Integrating and Simplifying Everything

System of Engagement

Connected Identity Real-Time

Web GIS

Services

Apps

Systems of Record

Desktop

Server
Enabling the Platform Across the Pipeline Lifecycle

**Asset Development**
- Planning
- Rights of Way
- Engineering
- Design
- Construction

**Asset Management**
- GIS
- MAOP
- TVC

**Pipe Integrity**
- Risk
- ILI
- HCA
- Class

**Asset Operations**
- Inspection
- Maintenance
- Network Control
- Emergency Management

**Health, Safety & Environment**
- Health
- Safety
- Environmental Management

**Business Management**
- Tax Accounting
- Business Intelligence
- Revenue Protection
- Human Resources
- Legal

**Customers & Regulators**
- Marketing
- Sales
- Customer Service
- Regulatory Compliance

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**Enabling the Platform Across the Pipeline Lifecycle**
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  - Emergency Management
- Health, Safety & Environment
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  - Sales
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  - Regulatory Compliance
ArcGIS Capabilities

- Mapping
- 3D
- Real-Time
- Imagery
- Geocoding
- Network Analysis
- Analytics
  - ArcGIS Pipeline Referencing
  - Utility Network
- Data Management
  - Utility & Pipeline Data Model
ArcGIS

Abstracts and Organizes All Types of Geospatial Data

GeoInformation Model

Maps & Scenes
Layers
Analytics

GIS Maps & Data
Imagery
Enterprise Data
Real-Time (IoT)
Enterprise capabilities for location referencing & connectivity modeling

- **Desktop**: ArcMap
  - 32 Bit
  - Linear Referencing
  - Geometric Network
  - APDM – PODS Esri Spatial
- **Web**: ArcGIS Pro
  - 64 Bit
  - ArcGIS Pipeline Referencing
  - Utility Network
- **Device**: ArcGIS for Server
  - UPDM or “PODS APR”

APDM – PODS Esri Spatial

Spatial

UPDM or “PODS APR”
Demo – System of Record
Jeff Allen & Anjali Bhangay
System of Engagement
Transforming our Approach

System of Record

System of Engagement
“we can’t see ourselves for the lack of a common operating picture”
Silos within different business units and between job roles
The ArcGIS Platform

- **APIs & SDKs**
  - ArcGIS API for JavaScript
  - ArcGIS Runtime SDK for iOS

- **ArcGIS Desktop**
  - http:

- **ArcGIS for Server including Portal**
  - http:

- **ArcGIS Online**
  - http:

Touchpoints for System of Engagements

**Services**

- **Data**
  - Feature Layers
  - Scene Layers
  - Tile Layers
  - Image Layers
  - Analytics

**Maps**

- **Scenes**

**Apps**

- **Layers**

**Analytics**
UPDM and the Utility Network
Esri’s UPDM is a geodatabase data model template for operators of pipe networks in the gas and hazardous liquids industries. UPDM is a

- moderately normalized data model
- that explicitly represents each physical component of a pipe network from the wellhead to the customer meter, terminal or delivery point, in a single database table object.
Esri is collaborating with the PODS Association on development of a new data model that combines the best of latest version of PODS Relational and the tables needed to support the ArcGIS Pipeline Referencing extension.
Introducing the Network Management Project

Vision:
• Provide pipeline customers with the ability to model, edit, and analyze complex networks of facility infrastructure using all Esri platform clients.
• Enable key modeling concepts to better support a true representation of what is on the ground, while fostering an easy exchange of network information with other mission critical systems.
• Support highly responsive editing and analysis capabilities.
Introducing the Network Management Project

• New model to support utilities, pipelines and telcos for the next 10-15 years
  • Electric, gas, pipelines, water, wastewater, sewer, and telco

• Goals of the project:
  • Improve overall performance and scalability
  • Improve ArcGIS platform interoperability
  • Reduce cost of ownership
  • Improve efficiency and productivity
  • Improve data quality
Road Map

Incremental and Groundbreaking Advancements

Pro 1.1
Crowdsourcing
Real-time
Utility networks
Location awareness
Massive 3D
Vector tiles
Web raster analysis
Advanced navigation
Modeling
UAV/Drone
GeoAnalytics
Insights
Big data
Raster Analytics
Mobile
Distributed GIS
Analytic Engines
User Roles

10.3.1
Pro 1.1 Pro 1.2
10.4
Pro 1.3
10.4.1
10.5
Pro 1.4

2015
2016
2017

Incremental Software Release
Continuous Online Improvements

... Focused on Quality, User Needs, and Innovation
Thank you

Please remember to fill out a survey