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ESRI UC 2008/Extending ISAT to an ArcSDE Event-Driven Model

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Leading Natural Gas Pipeline Franchise

El Paso Pipeline Group

- 19% of total U.S. interstate pipeline mileage
- 24 Bcf/d capacity (16% of total U.S.)
- 17 Bcf/d throughput (28% of gas delivered to U.S. consumers)

Source: El Paso Corporation based on 2007 data
Note: Includes El Paso Corporation and El Paso Pipeline Partners, L.P.
Extending ISAT to an Event-Driven Model
The objective of this project is to identify and implement subsets of the El Paso ISAT model in an ESRI SDE environment.

- Provides users with access to the ArcGIS tool-sets and analysis tools
- Increase opportunities to utilize commercial off-the-shelf products
- Broaden resource pool
- Will not affect Legacy Applications
- Low Risk
Benefits of extending ISAT

- Enhanced capabilities to visualize our data
- Enhanced QA/QC abilities
- Efficiencies in performance and usability
- Extension and introduction of a spatial integration platform
- Platform for further enhancements and improvements
- Online real time GIS analysis
- Version managed, long transition supported environment
- High quality map production
- Future access to horizontal applications
Moving to an Object Relational System

Data Mgmt
- Manage pipeline asset and integrity data.
  - PipeView
  - SheetGen
  - Integrity Data Mgr

Extended Environment
- Extend Current Environment to Support Centerline Edits and Batch Attribute Edits.
  - No Impact to current applications
  - Enhanced Efficiency
  - Integration Platform Leverage GIS Data

APDM Compliance
- APDM Compliance – COTS Applications
  - Shelf Software
  - Industry Standard
  - Still Does not Impact Current Applications.

Decision Support
- Fully Compliant System using best of breed
  - Fully Integrated with Identified Business Systems.
  - Performance Measurement
PROJECT STRATEGY
Feature Manipulation Engine (FME)

What is FME?
“FME Desktop is a flexible and powerful spatial ETL toolset”
- www.safe.com

FME Roles
- Centerline Update – Legacy applications to ESRI geometry
- Domain Synchronization – ISAT system domains to GDB Domains

Advantages
- “On the fly” data validation
- Scripting of weekly synchronization
- Multiple data formats
- Field type manipulation
E-ISAT to Arc Project
Implementation Process Overview

1. Assumptions and Prerequisites

2. Centerline Build Maintenance

3. Register Objects

4. Import Relationships

5. Create Domains

6. Triggers/Views

7. Database Tuning

8. MXD Layouts

9. Testing
PROJECT PROCESS AND RESULTS
Team created for testing performance and workflows in three operating offices

Versioning Scheme established
Process to Production

- Extensive testing
  - Legacy Applications
  - Project Workflows
- Manual with procedure guidelines created outlining functionality
- Training of key personnel
Current Editing Functions

- Out-of-the-box ArcGIS Desktop functionality
- In-house generated attribute editing tools
  - Created utilizing ArcObjects with .Net
- Commercial editing tools for specialized functions
Realized Benefits

- Improved data management
- Improved decision making through better visualization
- Versioned editing provides safety net for work in progress
- Find and resolve errors faster
- Quality map production utilizing real-time data
- Enhanced Morale
PHASE 2 AND BEYOND
Next Steps

- Continue toward APDM
- Leverage ESRI technologies for Alignment Sheet generation
- Upgrade Legacy Web and Mobile applications
- Maximo integration
- Environmental data integration
QUESTIONS?