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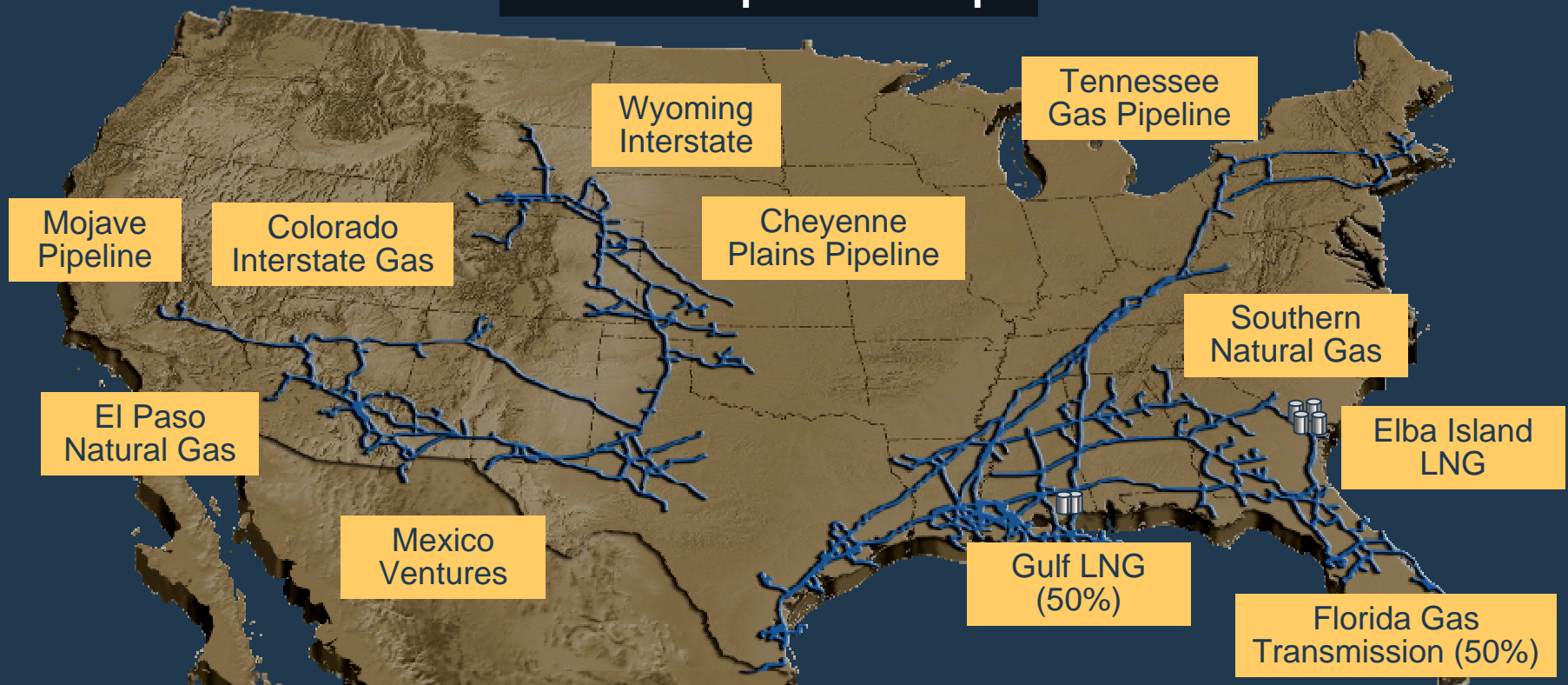
GE Oil and Gas

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

August 6, 2008

Leading Natural Gas Pipeline Franchise

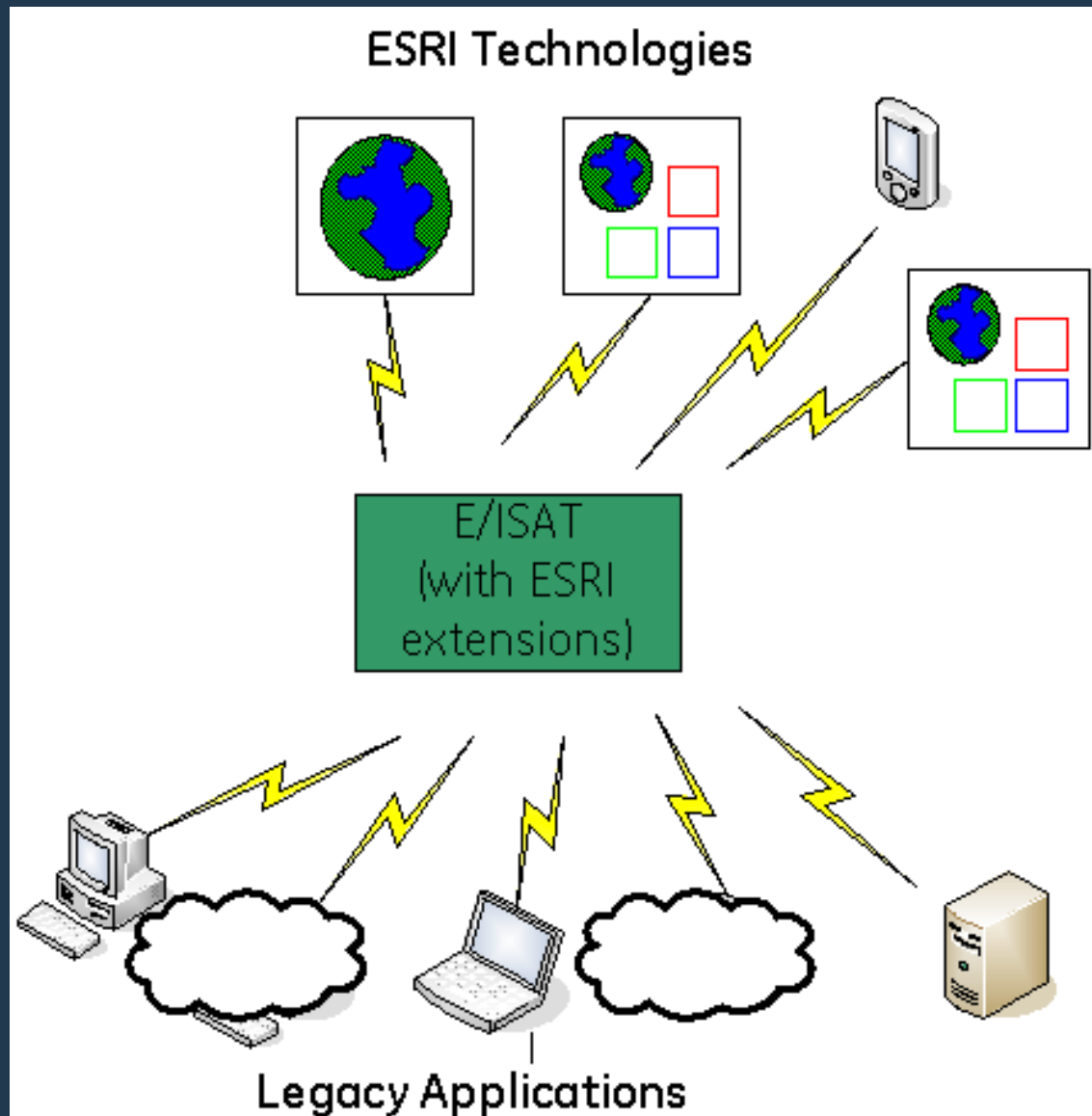
El Paso Pipeline Group



- ▲ 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



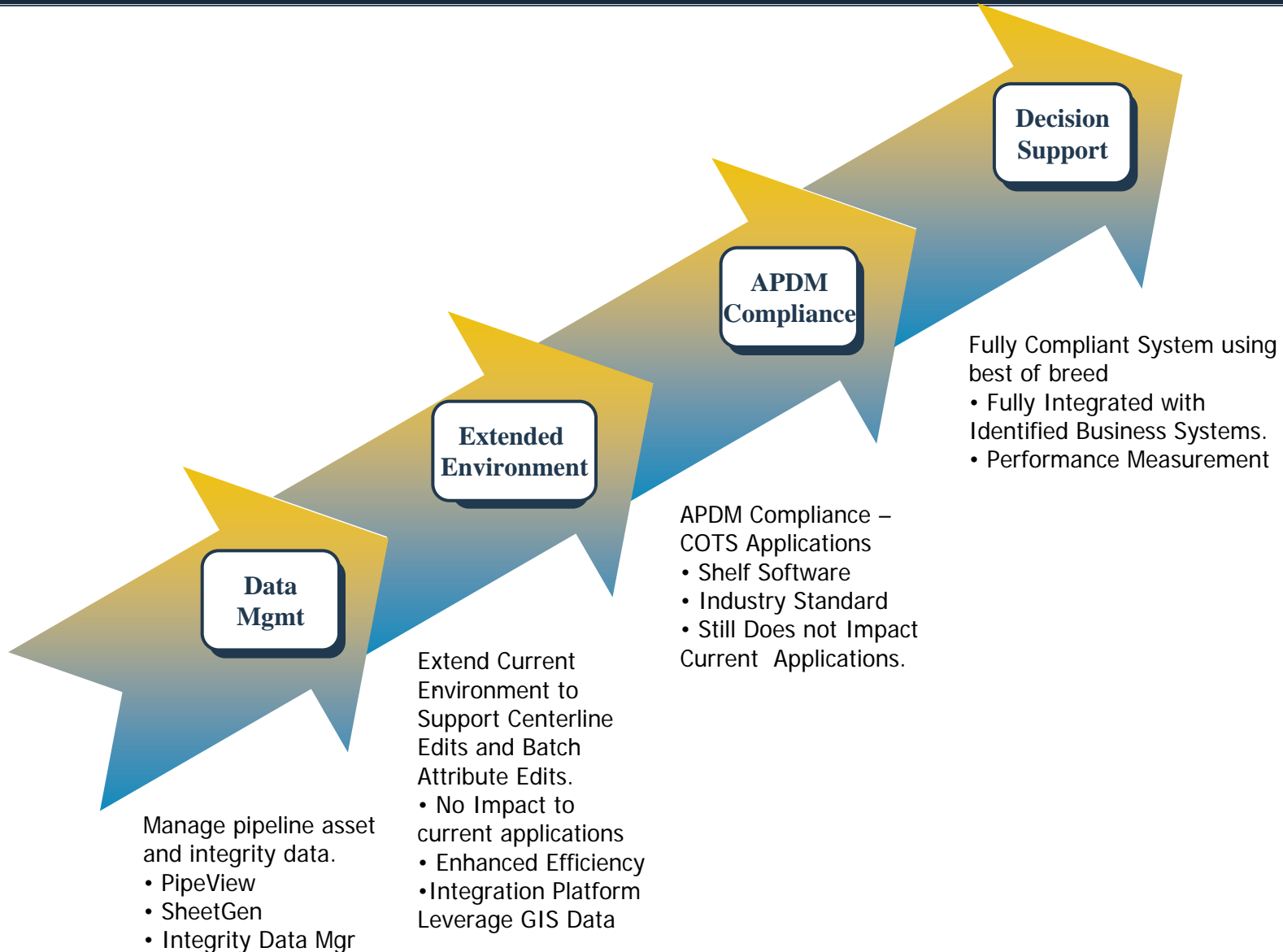
Project Objective

- ⤴ 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 toolsets 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



PROJECT STRATEGY

Feature Manipulation Engine (FME)

What is FME ?

“FME Desktop is a flexible and powerful spatial ETL toolset”

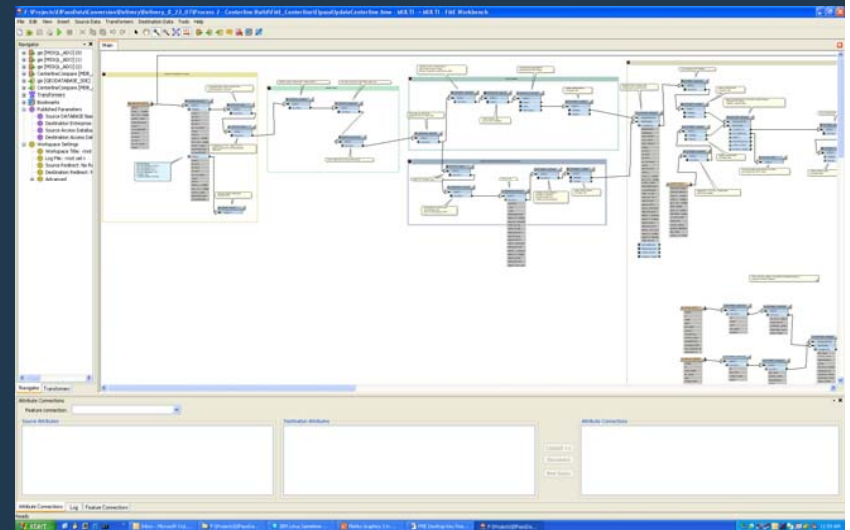
- www.safe.com

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

4 Import Relationships

7 Database Tuning

2 Centerline Build Maintenance

5 Create Domains

8 MXD Layouts

3 Register Objects

6 Triggers/Views

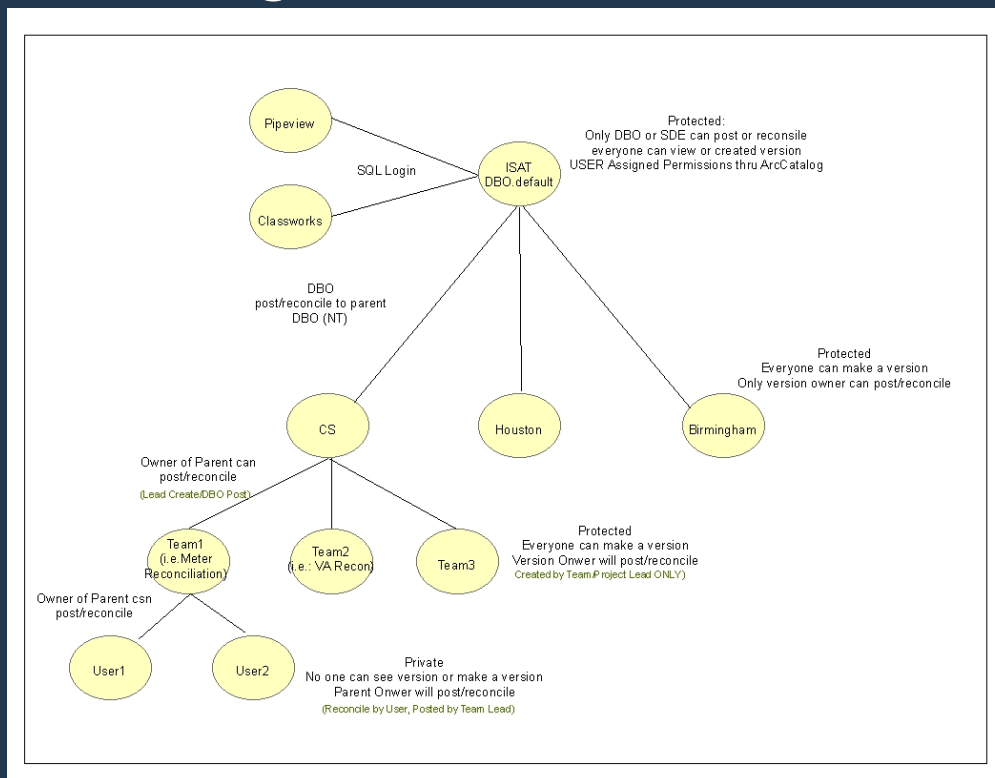
9 Testing



PROJECT PROCESS AND RESULTS

Process to Production

- 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

Meter (Edit)

Location

Latitude: 32.52182375 Modify Spatially

Longitude: -95.26787329 Modify From Entered Text

Station Series: 1606 Geographic Location: ONSHORE

Station: 3410 Site: 1097 View Site

Physical Info

Meter Number: SG0190 Mile Marker vs. Station: Milepost 0 + 3410.00

Serial Number: Outside Diameter: 4

Rating Class: Unknown Pressure Rating: Unknown

Manufacturer: Unknown Status: ACTIVE

Date Manufactured: Type: METER RUN

Vanes: Unknown Length:

mslink	id	type	station_series	station	meter_number
1	1	METER RUN	1606	3410	SG0190

Comment History Save Close

- ⤴ Commercial editing tools for specialized functions



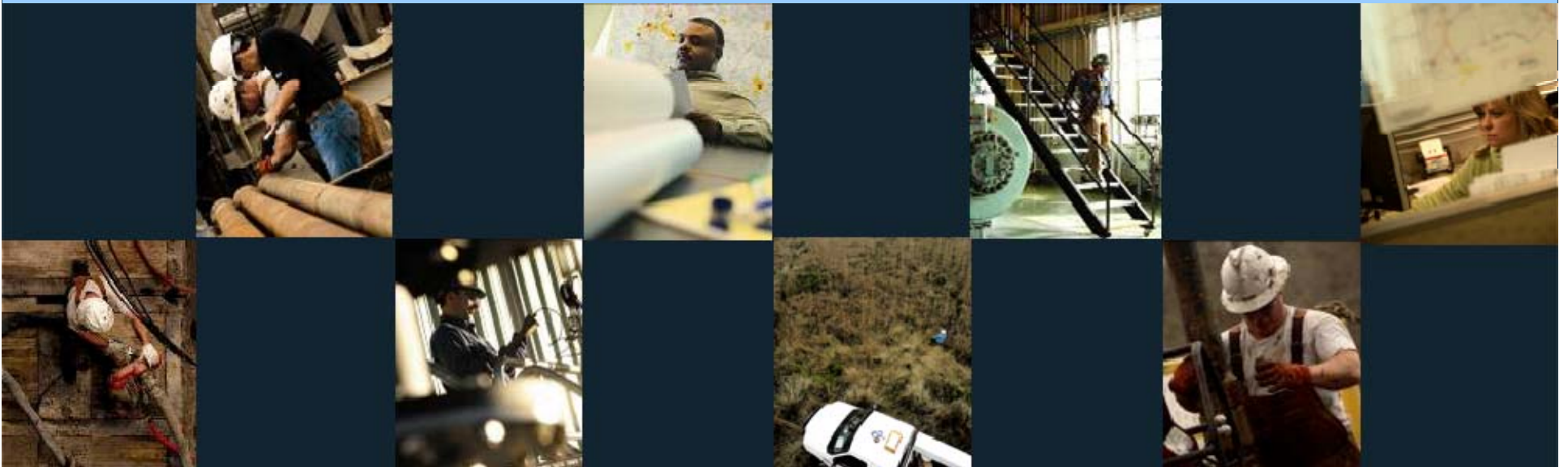
Realized Benefits

- ^ 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?