Agenda

- Company Overview
- SAP/ESRI Integration Challenges
- GEO Apps Solution Overview
- Project Methodology
- Solution Demo
- Summary and Questions
Company Overview

- **Pipeline Software, Inc.**
  - Headquarters in California, USA

- **Technology**
  - ISV and developer of Pipeline Transporter GEO Apps products

- **Solution categories**
  - EAM / Asset Data Management
  - Work Management
  - Project Management and Visualization

- **Focus**
  - Complex enterprise integration

- **History**
  - Founded in 1997
ESRI and SAP Partnerships

☐ ESRI Partner
- ESRI Authorized Business Partner
- ESRI Developer
- ESRI Complementary Technology Provider (CTP)
- ESUG (ESRI SAP community) member
- EGUG (Electric & Gas community) member

☐ SAP Partner
- SAP Software Partner
- SAP Certified Integration
- Work globally with SAP teams
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Integration Challenges

- ESRI / SAP integration impacts numerous industries
  - Utilities
  - Oil & Gas
  - Engineering Construction (ECO)
  - Energy
  - Mining
  - Transportation
  - Facilities Management
  - Public Works
ESRI / SAP integration impacts numerous business process:

- Capital Projects
- Enterprise Asset Management
- Work Management
- Field Service and Support
Integration Challenges – Top 3

- Underestimating SAP complexity
  - Technical integration complexity
  - Risks associated with one-off development

- Misjudging performance requirements
  - Project, work, and asset data – lots of it!
  - Approach to optimization
    - Direct memory processing
    - True net change extraction from SAP

- Reviewing Support Options
  - Not just an initial development concern – ongoing support
  - Pre-packaged application
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Pipeline GEO Apps Solutions

- GEO Asset Data Management (GEO ADM)
  - Asset synch. between SAP/ESRI ArcGIS Server
  - Manage equipment and functional locations (FLOCs)

- GEO Work Management (GEO WM)
  - Access SAP work data directly on the map
  - Manage work orders and notifications

- GEO Project Management & Visualization (GEO Projects)
  - SAP PS <> Primavera <> ESRI
  - Primavera <> ESRI
Pipeline Deployment Architecture

Pipeline GeoApps Deployment Architecture

- Use PortalViews to View and Process SAP and Primavera Transactions
- Synchronize Asset and Project Data with GIS
- End Users:
  - ArcMap for GIS Functions
  - View SAP and Primavera data live from PortalViews

SAP Server(s) - Primavera Server(s) - Pipeline Transporter and PortalViews - ArcGIS SDE Server(s)
Pipeline GEO Apps Benefits

- GEO Apps Overall Benefits
  - Supported and maintained product suite
  - Faster deployment with reduced risks

- GEO Asset Data Management (GEO ADM)
  - Enhanced data visibility and improved integrity
  - Improve communications between GIS and SAP teams

- GEO Work Management (GEO WM)
  - Enable work management visualization
  - Increase productivity, resource utilization, and customer service

- GEO Project Management & Visualization (GEO Projects)
  - Improve control over large, complex projects
  - Enables “best of breed” GIS project controls
Pipeline Professional Services

- **Product Support**
  - GEO Apps are fully supported packaged applications
  - Knowledgeable, experienced support staff

- **Solution Design Services**
  - Initial blueprint workshop for integration solution design
  - Asset, work, and capital projects focused scenario designs

- **Implementation and Deployment Services**
  - Requirements / SOW specification development
  - Installation, deployment, and configurations

- **Testing Services**
  - Integration scenario testing and user acceptance testing

- **Training Services**
  - Typically small group training; large group or custom training available
GIS Project Lifecycle

- Define Business Process
- Define Master
- Define Mappings
- Define Rules

- Implement Transport Jobs
- Configure Groups, Users, Defaults
- Validate

- Extract Data from SAP and ArcGIS
- Scrub Data
- Match records
- Update IDs back to SAP and ArcGIS

- Identify adds/changes/deletes
- Process adds/changes/deletes
- Record exceptions

- View SAP Data from ArcMap
- View Assets on Map from SAP
- Create Notifications from ArcMap
- Release/Close Orders from ArcMap
GEO Apps Lifecycle Methodology

Complete packaged solution that provides process integration between SAP and ESRI ArcGIS

1. Load
   Extract, scrub, match, transform, and load initial asset master data

2. Synchronize
   Keep asset data synchronized between SAP and ESRI

3. Transactions
   Execute SAP-ESRI transactions through web interface
Pipeline ETL solution to transform, scrub and match data

- High performance full featured ETL
- Extract SAP data to SQL tables
- Extract GIS data to SQL tables
- Clean extracted data
- Use algorithms to programmatically match data
- Update matched id’s to GIS or SAP
Data Synchronization

- ArcGIS to SAP
  - Use difference cursor to identify changes
  - Apply changes to SAP data based on mappings and business rules for field ownership
  - Rules for new records added to ArcGIS determine whether to hold in exceptions table or create new SAP records

- SAP to ArcGIS
  - Attempt to update only those assets previously linked to GIS
  - Apply changes to GIS data based on data mappings and business rules for field ownership
SAP Transactions from ArcMap

- Provide users with ability to process SAP transactions from ArcGIS
- Intuitive Pipeline toolbar in ArcMap
  - View functional location details
  - View equipment details
  - View notifications
  - Create notification
  - View work orders
  - Release/close work order
  - SAP data is rendered within ArcMap
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Step 1 – Place new feature for water tank and two fire hydrants on map in ArcMap and link to SAP functional location and equipment.
- Hydrants map to Equipment 1000142 and 10000143.
- Water tank maps to Functional Location TANK-001-AB-01.

Step 2 – Run Transporter for GIS to update attributes in ArcGIS from matched asset record in SAP.
- Attributes for hydrants and water tank are updated from SAP.
Demonstration – Geo Work Mgmt.

View and Edit SAP Data from ESRI ArcMap

- Provide users with ability to process SAP transactions from ArcGIS
- Step 1 – Utilize Pipeline GIS toolbar in ArcMap to View and Create SAP Data
- Step 2 – View Functional Location Details
- Step 3 – View Equipment Details
- Step 4 – View Notifications
- Step 5 – View Work Orders
- Step 6 – Create Notification
  - Create notification for equipment 10000142 in SAP
  - List notifications to verify new one was created
Features in ArcGIS are linked to WBS from SAP and/or Primavera.

Features are rendered with different colors based on status of WBS.
Summary

☐ Questions/Feedback

☐ More Information
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