PIP - Pipeline Information Platform

Information Management and GIS for Pipelines

Operation Phase and Design Phase

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Agenda

- Introduction of ms.GIS
- Why to use IT & GIS for Pipelines
- Challenges solved by PIP
- Strategies
- Solutions – MERO, NABUCCO
- Benefits
- Technology
Introduction ms.GIS information systems inc.

- Based in Vienna / Austria
- IT & GIS services and solutions
- Focus: Pipelines, Utilities, Transport, Environment, Public

- Member of:
  - PODS – Pipeline Open Data Standard
  - MSDN – Microsoft Developer Network
  - EDN – ESRI Developer Network
  - ODN – Oracle Developer Network

Why to use IT & GIS for Pipelines

**Information Management:**
- structured storage of collected information (Database)
- usage of proper software tools for different tasks
- sharing of latest collected information between involved parties
- departments communicate via DB
- long distance assets => GIS
- data distribution via intranet, Web or offline
Challenges solved by PIP

- Inefficiency in information management
  - Work sometime redone, spending lots of time finding info
- Human resource change
  - Avoid redoing work
- Different systems can’t share information
  - Interoperability among GIS/Spatial Database and Design tools
- Inefficiency in project management
  - No strict workflow
- Inefficiency in the field
  - Need to edit data in the field disconnected from database
- Printing is too costly
  - Spending lots of money on paper and on organizing plots

Pipeline Information Platform - Concept

- PIP Geodata-server
- Metadata
- LRST
- Right of Way
- Pipe Tracking
- Construction Progress
- Operation
- Pipe book Maintenance
- Risk- and Integrity models
- Linkage to SCADA and Leak Detection
- PODS- & ISPDM compliant Applications
- Interfaces to other Software tools
- Hydraulic models
- Alignment Sheet Generator
- Display, Profiles, Mapping
Pipeline Projects and their Phases

New Pipeline Projects
- Proposed Projects
- Design / FEED
- Construction
- Operation, Maintenance

Existing Pipelines
- As Built Documentation
- Operation, Maintenance

What do they have in common?
Information and Data is Produced which needs to be stored and managed

Management and Decision Support

Solutions – MERO, Middle European Crude Oil Pipeline

MERO - Modules for Operation
- Desktop GIS Solution for all staff
- Right-of-Way Management
- Third Party Crossing Management
- Corridor Maintenance Management
- Pipe Book – ILI results
- CP Maintenance & Survey Module
- SCADA Linkage
- Alignment Sheet Generator
**Solutions - NABUCCO**

**NABUCCO - Design phase**
- Data collection concept
- Data Format & Data Transfer Specification
- Data harmonization for future phases
- WEB Portal
- Document Management System

**Challenges**
- Multi Countries
- Multi Routes
- Multi Versions (Revisions)
- Multi Organizations
- Multi Sites
- Multi Users
- Multi Interfaces
- Multi SRS

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**Benefits & Savings**

**Benefits**
- no loss of information / sharing of information
- fast access to latest information
- increased user productivity
- avoid of re-doing works
- data at-a-glance
- decision support
- progress monitoring
- knowledge about the condition / status
- basis for reducing operational / overhead costs
- protection of investment

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Example – Alarm Module

Identification of Pipeline Section

- Oil Spillage after 1, 2 & 3 h and the max. oil spillage
- Display of sections
- Display of location within map
- Search (Docs & Data)
- etc.

Controlled Operators Emergency Shutdown Procedure

controlled shutdown instructions for operators
Example – Detail Drawing

Technical Information – Detail Drawing Oil Barrier

Display of detail drawings

Example – Profile & Schema

Technical Information – Profile & Schema

Display of profile & schema drawings
Thank you for your audience!

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