Legacy System Integration

Sharing your wealth of data

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Summary

• Introduction

• Colorado DOT
  • What is WebHUT?
  • Overview of WebHUT Sync
  • Technologies

• Kansas DOT
  • What are the interfaces?
  • Example of three interfaces
  • Technologies

• Lessons learned
Introduction

• Many DOTs now use Roads and Highways to manage their enterprise LRS
• LRS and road inventory need to share data with internal and external systems
• Goals of the interfaces
  • One authoritative LRS
  • Remove data redundancies
  • Find common technologies and identify which need to be utilized
What is WebHUT?

- An established web-based application local entities (counties and cities) use to submit data to CDOT
- Stores the data in a segment-based LRS
- Front end for the locals to submit and edit data
- Back end for CDOT for validating the data before committing to the R&H database
- The data is used for funding
R&H and WebHUT Interface

1. Analyzer
2. WebHUT
3. Processing Database
4. R&H REST API Apply Edits
5. R&H

The Circle of Data
Technologies

• ArcGIS Roads and Highways
• Transcend’s Segment Analyzer and Job Execution Manager
• SQL Server views and stored procedures
• Web Services
• R&H REST API Apply Edits
Kansas DOT Interfaces

- Esri Roads & Highways (MS SQL Server)
  - Video Log
  - Access Permits
  - Crew Card
  - Data Warehouse
  - KCARS
  - CIIMS
  - EPFS
  - PMS
  - BrM
  - WinCPMS
  - KanPlan
  - Other

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Kansas DOT Mandates

• Integrate new technology
• **MINIMIZE** change to existing applications
Enhanced Priority Formula System

1. Rename old and create new EPFS event
2. 
3. 
4. 
5. 
6. 
7.
Pavement Management System

1. Segment Analyzer
2. PMS
3. Staging Database
4. R&H Relocate Events GP tool
5. R&H
• Transcend’s Segment Analyzer and Validation Assistant
• SQL Server and Oracle Database Views and Stored Procedures
• ArcGIS Map Services
• Web Services
• Geolocate point service
• R&H REST API Apply Edits
• R&H Append Events Geoprocessing Tool
• R&H Relocate Events Geoprocessing Tool
• Esri Workflow Manager
Lessons Learned

- There is no one size fits all
- Each interface needs to be investigated individually
- Look for design patterns that interfaces have in common
- Identify the data, where it’s coming from, how it is modified, and where it needs to go
- Implement interfaces using an iterative sprint-based approach
- Leverage R&H and COTS components wherever possible
- Use web services whenever possible and recommend to standardize on REST
- Identify the LRM being used and try to get the system to standardize on the R&H LRM if possible