Migrating your Data to the new Location Referencing Information Model

ArcGIS Pipeline Referencing

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Pipeline Referencing Overview

Information Model

- Routes
- Events
- Intersections
Pipeline Referencing Overview

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- Events
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ArcGIS Pro
- LRS network editing
- LRS management
- Geoprocessing
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ArcGIS Enterprise
- LRS web services
- Developer API samples
Pipeline Referencing Overview

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**Web**
- Event editing
- Event query
- Event QC
Information Model
Information Model

Schema for route centerline management

*Centerline*  
Polyline FC, stores *shape and geometry*
Information Model
Schema for route centerline management

Route(s) / Network

Centerline

Polyline FC
Measure enabled

Polyline FC,
stores shape and geometry
Information Model
Schema for route centerline management

Calibration Points
0 50
Point FC, stores Measure values

Route(s) / Network
Polyline FC, Measure enabled

Centerline
Polyline FC, stores shape and geometry
Information Model

Schema for route centerline management

- **Calibration Points**
  - Stores Measure values

- **Route(s) / Network**
  - Measure enabled

- **Centerline**
  - Stores shape and geometry

- **Centerline Sequence table**
Information Model
Schema for route centerline management

- **Routes (Network)**: Route features
- **Centerline Sequence**: relationship between Centerline and Route
- **Centerline**: Line feature class that stores route geometry
- **Calibration Points**: Point feature class that stores route measures

...with support for Engineering Stationing

Separate feature class for each LRM
Types of Network

1- LRS Network

LRS – Linear Referencing System
# Types of Network

## 2- LRS Line Network

<table>
<thead>
<tr>
<th>Route ID</th>
<th>Route Name</th>
<th>Line Order</th>
<th>Line ID</th>
<th>Line Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>{1838BE01-0BC9-4C58-9829-0F1D77717DC8}</td>
<td>Route 1</td>
<td>100</td>
<td>{C043CAF0-2BF7-4598-8AC8-B382647AD490}</td>
<td>Line A</td>
</tr>
<tr>
<td>{26710A05-C499-42C1-BB73-D3A8D402B109}</td>
<td>Route 2</td>
<td>200</td>
<td>{C043CAF0-2BF7-4598-8AC8-B382647AD490}</td>
<td>Line A</td>
</tr>
</tbody>
</table>

![Diagram of LRS Line Network with Route 1 and Route 2](image_url)
Types of Network

3 - Derived Network

**Derived Network**

- Route 1: 0 - 110
- Route 2: 0 - 100

**LRS Line Network**

- Route 1: 0 - 50
- Route 2: 40 - 100

Calibration Point

Routes
Support for Multiple Linear Referencing Methods

LRS Network A

0 200

1 Route
2 Calibration Points

Centerline

2 Centerlines
Support for Multiple Linear Referencing Methods

LRS Network B
- 100
- 210
- 200
- 300
- 2 Routes
- 4 Calibration Points

LRS Network A
- 0
- 200
- 1 Route
- 2 Calibration Points

Centerline
- 2 Centerlines
Event Location Methods

- Route and measure
- Stationing
- Referent and offset
  - Intersections
  - Events
  - Features
- Coordinates and offset

Calibration Point: 1 mile
Event: 1.27 miles
Station Event: 100+00.00
Event: 456+25.00
Intersection Features: US Highway 10 crossing
Event: 300 feet from US Highway 10
Event: 45 feet from cell tower
Wellhead location: 34.0547,117.1825
When the LRS routes are edited, measure behavior rules can be applied to events.
Time Aware Model

Before

Realignment

After
Demo...
Configuration/Loading Process

LRS Configuration
- Create LRS
- Create Networks
- Create Events

Network Loading
- Load Routes
- Append Calibration Points
- Generate Routes

Event Loading
- Append Events
LRS Configuration

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Pipeline Referencing Data Migration Roadmap

**Append Routes tool**
- Load Routes in ArcGIS Pro
- GP tool to provide flexibility

**3D Measure Calculation**
- Calculate measures in 3D when Z values are present

**LRS Hierarchy view**
- Show LRS, Networks, and Events in ArcGIS Pro
Additional Resources

Pipeline Referencing Tutorials (configuration and loading are exercises 6-8)
http://arcg.is/2tt82Hx

Configuration and loading workflow help topic
http://arcg.is/2tU9T9m
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