



BIWA SUMMIT 2016

The Oracle Big Data + Analytics User Conference

January 26-28, 2016

Oracle Spatial Summit + YesSQL Summit

ATLAS - Utilizing Oracle Spatial and Graph with Esri for Pipeline GIS and Linear Asset Management

Dave Ellerbeck, Solutions Architect
Global Information Systems, LLC

Speaker Bio

- David Ellerbeck has worked for Global Information Systems (GIS) for 5 years and in the GIS industry for 18 years. Experienced in multiple UI's, integrations and database platforms with specific focus on Spatial DBMS and Pipeline Transmission. He has implemented nearly 100 GIS systems \ integrations for varying industries.

Pipeline and GIS

- Very legacy mindset - Stationing is a must to tie records to a particular location (a.k.a. Linear Referencing)
- Sorting routes is always an issue and use another “reference \ continuous” mode
- Routes that span really long distances
- Heavy event driven models (Results in a lot of transactions)
- Request that a data model be standard across organizations
- Emphasis on a “data model solving their issues”

Global Information Systems, LLC (GIS) Atlas Implementation

ABOUT US

- Based in Lexington, KY and provide services to 80 companies
- 150 employees
- Focus on managing Linear Assets

CHALLENGES / OPPORTUNITIES

- Use only Out-of-Box applications and functions
- Integrate multiple departments and applications
- Store all data in Oracle
- Simplify data maintenance
- Remove downtime for application upgrades
- Correct data integrity and maintain it
- Legacy application integration

SOLUTIONS

- Oracle Database 11g \ 12c Enterprise Edition with Spatial and LRS (Data and Graph)
- Safe Software's FME (Migration and Sync)
- ArcGIS 10.xxx
- Autodesk (And other CAD \ GIS formats)
- G-Suite



RESULTS -

- Only Standard Esri tools are used for data maintenance
- All departments store their data in the Oracle database but use their own applications for maintenance
- Performance
 - Reduced data maintenance from 120 hours to hours
 - All legacy reporting systems read from LRS views \ processes without the need for maintaining the data
 - Spatial processing and viewing has increased nearly 10 times (11g) and still testing in 12c for accurate numbers
- No need for a third party upgrade to change releases
- Larger user base to recruit from
- Data accuracy was increased
- Implemented across multiple operators \ industries
- Discovering other verticals (Electric, Water etc.)

What is Atlas

- Is an approach of storing the data to work for you
- Is the industry “Non-Data Model”
- Utilize database geometry
- Can work with Locator only but less efficient
- Relies heavily on a network for data maintenance, quality and connectivity
- UI Independent
- **REAL WORLD MODELING**

Organizing Data

- Store your linear distances where they matter most
- Structure the data to “conform” to Esri requirements
 - Geometric Network
 - Subtypes
 - SDO_GEOMETRY
 - Data Validation
- Less stress on Esri Versioning
- Segment to smallest record and roll up the reports
- Model the data as it is in the real world

Reporting Data

- No longer manage route references for Linear Referencing in every table
- Utilize Spatial to find interactions between static data that does not change
- Relational data modeling without the relationships
- No longer a need to “sort” data for order
- No constraint on routes that a record can span
- Data will return segmented in the reports

Next Steps

- Dynamic Risk calculations
- Big Data Discovery
- Graph for Engineering interface to discover data driving scores (Data discovery \ analysis)





BIWA SUMMIT 2016

The Oracle Big Data + Analytics User Conference
January 26-28, 2016

Oracle Spatial Summit + YesSQL Summit

