Breaking Away from the Old Regime

Structural Analysis in the Next Generation GIS

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Agenda

• Traditional GIS Strengths
• Past GIS Data/Functionality Limitations
• Building a Physical Model from GIS Data
• Benefits of Creating a Physical Model
Traditional GIS Strengths

- AM/FM
- Model Electrical Network
- Data Distribution
- Electrical Reliability
- System Planning/Management
- Other Types Network Analysis
GIS Data and Functionality Limitations

- Highly Abstracted Model
- 2-Dimensional
- Limited Availability of Physical Infrastructure Information
- No Link to Codes or Standards
Building a Physical Model from GIS Data

- Location Asset Information
- Span Information
- Expanded GIS Data Structure
- Standards Library
- Analysis Settings
Benefits of Creating a Physical Model

OAM’s 3-Dimensional Physical Model Enables the Following Embedded Functionality:

- 3-D System Review
- 3-D Structure Editing
- Profile View
- Conductor/Span Analysis
- Structural Analysis
- ETC.
Embedded Functionality

Benefits:

• Leverage your GIS asset information
• Maintain system inventory and manage reliability from a single platform
• Validate engineering compliance against a single system model
3-D System Review

Provides users with the ability to view and edit the content of selected locations in a visual environment.
3-D System Review

Functionality:
• 3-D rendering of infrastructure and terrain
• Fly-Through capabilities
• Access to Structure Editing

Benefits:
• Accurate visual feedback of system model
• System Validation
3-D Structure View/Edit
Provides users with the ability to view and edit the content of selected locations in a visual environment.
3-D Structure View/Edit

Functionality:
• 3-dimensional rendering of location
• Intuitive structure editing with immediate visual feedback
• Displays attachment heights, and equipment locations

Benefits:
• Visual Feedback during editing process
• Accurate visual validation of utility assets by location
• Quick way to build knowledge of utility standards
• Location Validation
Profile View Technology
Provides users a quick and efficient way to display a cross section (Profile View) of the selected area in Origin GIS.
Profile View Technology

Functionality:

- A 2-dimensional rendering of the project profile including spans, structures, and ground level elevations
- True catenary modeling
- Editing and measurement functionality
- Printing and export capability
- Simultaneous views of conductors at different operating temperatures
Profile View Technology

Benefits:

• Graphical system representation provides faster and more accurate system assessment
• Ability to quickly create profiles for permitting and other applications
• Visual clearance checks
• Measurements and separation functionality
Conductor Analysis

Provides users the ability to run advanced Conductor Analysis routines from within Origin GIS
Conductor Analysis

Functionality:
- Conductor to ground clearance analysis
- Conductor Uplift Analysis
- Conductor to Conductor separation calculations
- Horizontal blowout calculations
- Other conductor related calculations
Conductor Analysis

Benefits:

• Determine asset locations where conductor clearances may be in violation
• Analyze clearance under different load conditions allowing for planning and proactive maintenance and code checking
• Evaluate impacts of line re-conductors for clearance and structural integrity
Structural Analysis

Provides users the ability to access state-of-the-art structural analysis routines from within GIS.
Structural Analysis

- Configurable Standards and Design Criteria
- Detailed structural analysis and reporting for:
  - Poles
  - Guys
  - Anchors
  - Insulators
  - Crossarms
Structural Analysis

Benefits:
• Identify components that are out of code compliance
• Validate that utility standards for Safety and reliability are being met
• Enable smart maintenance of your distribution system
• Analyze against your specific requirements for code and reliability
Automated Design Validation

Provides users the ability to quickly verify that selected sections of their asset base meet utility structural and clearance requirements for safety and reliability.
Automated Design Validation

Benefits:

• Fast and accurate validation of utility infrastructure for clearance and structural violations
• Provides one location to validate against network data and modeling criteria
• Allows for quick and efficient maintenance and analysis of your utility assets and model
Conclusion:
By adding the ability to produce a true physical model from available GIS data, you provides the ability for additional tool sets and analysis engines to help make informed decisions when maintaining and managing the growth of your asset base.
QUESTIONS ???