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FME Services for AltaLink: MNC uses FME Integration for AltaLink to Enhance Grid Efficiency and Data Synchronization

In 2019, AltaLink, a subsidiary of **the Alberta Electric System Operator (AESO)**, initiated a key modernization effort to improve how spatial data supports real-time grid operations. As one of Alberta's largest electricity transmission providers, AltaLink is responsible for delivering safe, efficient, and reliable energy to millions of Albertans while minimizing environmental impact.

A critical tool in AltaLink's operation is its **Terravision Application (Environmental Management System—EMS)**, which enables real-time insights into electrical grid performance. However, **the GIS data used to support this system was managed separately and manually updated**, creating inefficiencies, data inconsistencies, and an increased risk of system downtime. Recognizing the need for a more reliable and automated solution, AltaLink partnered with **MNC (Martin Newby Consulting Ltd.)** to overhaul this data synchronization process using Safe Software's FME platform.

The outcome was a **robust, repeatable workflow that fully automated the integration of GIS and EMS data**, enhancing accuracy, eliminating manual effort, and reducing operational disruptions. This strategic collaboration laid the foundation for a smarter, faster, and more resilient power transmission network.



CHALLENGE

AltaLink required up-to-date, synchronized geospatial and EMS data for reliable energy delivery and effective grid management. Maintaining alignment between these systems presented several challenges:

- **Manual, resource-intensive updates:** Synchronizing EMS and GIS data relied on labor-intensive manual workflows, increasing costs and inefficiency.
- **System downtime during updates:** Synchronization previously required full system outages, interrupting operations and impacting reliability.
- **Data inconsistencies:** Mismatches between datasets compromised decision-making and grid monitoring precision.

- **Limited scalability:** Manual processes could not keep pace with growing data volume and frequency requirements.
- **Reduced real-time responsiveness:** Integrating live data was complex, limiting proactive maintenance and resource allocation.

These issues threatened service reliability, increased operational costs, and delayed responses to insights into grid performance. Automating the process was essential to meet future energy demands and customer expectations.

SOLUTION

To address the growing need for accurate, real-time data synchronization between its Terravision EMS and GIS, AltaLink partnered with **MNC, a trusted Safe Software collaborator** known for innovative applications of FME technology in surveyed land data management.

MNC designed a solution to automate the full cycle of data comparison, synchronization, and updates between AltaLink's GIS and its Terravision EMS application.

KEY SOLUTION COMPONENTS INCLUDED:

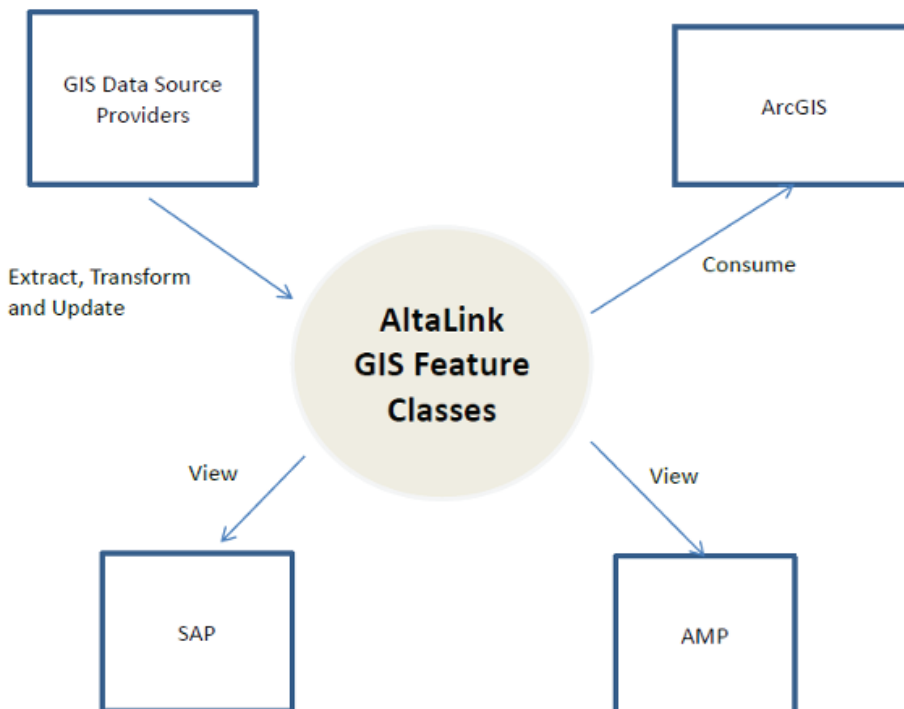
1 END-TO-END FME WORKFLOW DESIGN: MNC developed a comprehensive FME-based solution to extract and transform GIS data into a format compatible with the EMS. This enabled real-time data updates without requiring manual intervention or scheduled outages, drastically improving the speed and accuracy of data integration.

2 AUTOMATED DATA COMPARISON & SYNCHRONIZATION: The process enabled automated comparison of changes between AltaLink's GIS and EMS datasets, ensuring discrepancies were identified and corrected with minimal delay. This removed the risk of misalignment and maintained consistent, high-quality data across systems.

3 SYSTEM STABILITY THROUGH AUTOMATION: By eliminating the need for periodic shutdowns to perform updates, MNC's solution minimized operational disruptions. The result was a more stable and resilient system capable of responding dynamically to new data inputs.

4 LONG-TERM MONITORING & MAINTENANCE: The FME workflow incorporated ongoing monitoring and data quality checks, providing a sustainable framework for future updates. AltaLink gained a repeatable, scalable method for data synchronization that supports continuous service improvement and adaptability over time.

This targeted, automated approach empowered AltaLink to overcome integration challenges and positioned them for long-term operational excellence and reliable energy delivery.



Context diagram

RESULTS

The automation of GIS and EMS data synchronization delivered significant advancements in operational efficiency, data accuracy, and system reliability for AltaLink.

KEY OUTCOMES INCLUDED:

- **Transformation to Automated, Repeatable Workflows:** MNC replaced AltaLink's labor-intensive data synchronization tasks with a fully automated process, enabling updates to be run as frequently as needed without requiring system outages. This shift dramatically improved the repeatability, consistency, and timeliness of data management efforts.
- **Improved Operational Efficiency and Accuracy:** By removing manual steps and enabling seamless EMS-GIS integration, AltaLink reduced errors, improved data quality, and enhanced the reliability of its core operational systems. This allowed for faster, more informed decision-making across teams.
- **Resource Optimization and Strategic Focus:** Freed from time-consuming manual data processes, AltaLink was able to reallocate internal resources toward higher-value strategic initiatives, improving internal agility and long-term service delivery.
- **Enhanced Real-Time Monitoring and Responsiveness:** The solution strengthened AltaLink's ability to perform proactive maintenance and respond more quickly to changing grid conditions, reducing service disruptions and improving customer satisfaction.
- **Cost Reduction and Reporting Gains:** The streamlined system yielded measurable cost savings by eliminating downtime-related inefficiencies and enhancing situational awareness. Improved reporting and analytics capabilities empowered AltaLink with better oversight and performance tracking.
- **Future-Ready Grid Management:** MNC's innovative use of FME created a scalable framework to support future energy demand, grid modernization efforts, and enhanced environmental stewardship. AltaLink is now better equipped to deliver reliable, sustainable power services across Alberta.

This scalable solution positions MNC to help utilities and grid operators in other jurisdictions achieve similar gains in data integration, automation, and operational efficiency.

Improved
Efficiency

More
Accurate
Data

Increased
System
Reliability

Future
Ready
Frameworks

MNC SERVICES & TECHNOLOGY USED

SERVICE CATEGORIES:

- GIS Strategy and Planning
- Data Conversion/Migration
- Training and Support Services

TECHNOLOGY PLATFORM & TOOLS:

- FME



CONTACT US TODAY to discuss your geospatial needs.

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ABOUT MNC

The Cadastral and Parcel Mapping Experts



MNC is a trusted leader in cadastral and parcel management with 25+ years of experience delivering GeoAI-ready datasets, modernizing parcel fabrics, and automating GIS workflows. As an Esri Gold and Cornerstone Partner with a Parcel Management Specialty and State and Local Government Specialty, MNC provides scalable advanced GIS, ArcGIS Pro, FME automation, MicroSoft, AutoCAD and cloud-ready geospatial systems that improve data quality and support government land administration modernization across Canada, the USA, and the Caribbean.





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