

B.C. Hydro British Columbia, Canada

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Case Study

Key Facts:

 Industry:
 Utilities

 Problem:
 Integrating and migrating data from multiple formats into GE Smallworld GIS.

 Solutions:
 FME®

The Organization

BC Hydro is the predominant supplier of electrical services in the province of British Columbia serving more than 1.5 million customers. BC Hydro is currently implementing an Enterprise Geographic Information System (EGIS) based on the GE Smallworld[™] GIS. The organization also uses MicroStation[®]. Both GE Smallworld GIS and MicroStation run on Windows NT.

The Challenge

Contractors provide data in MicroStation DGN format. After verification and validation procedures have been performed, the data needs to be merged with provincial maps that are in SAIF (Spatial Archive and Interchange Format). Ultimately, all this data needs to be imported into the GE Smallworld GIS.

The complexity of the BC Hydro EGIS data model (over 230 feature types from the As-Constructed Mapping compilation), and the large number of feature types that are imported from the GDBC TRIM data (over 300 additional feature types) created a key problem to be resolved. All these features had to be available in MicroStation Design, Carl-Ziess PHOCUS PHODAT and GE Smallworld formats.

The Solution

BC Hydro chose FME as a one-stop solution for data verification, data translation, data merging, and the data import into GE Smallworld GIS. View a data flow diagram of the solution. Please refer to **Figure 1**.

Data Verification: FME validates mapping specifications. This process ensures all contractors' data meets the BC Hydro Specifications for Data Capture. FME reads the MicroStation Design files supplied by the photogrammetric contractor, checks that all features match the BC Hydro EGIS As-Constructed Mapping Program specification, and then writes out a new DGN file. Any features that do not meet the design specification are saved on DGN Level 63 and a report is generated indicating where the error occurred. To save time, some contractors run FME themselves to check their photgrammetric compilation work prior to submission to BC Hydro.





Data Translation: FME translates data from MicroStation DGN format into the PHOCUS format for use in the Carl-Ziess PHOCUS PHODAT system. This allows comparison of the 3D vector data with stereo-pair aerial photographs. All significant features are checked to ensure they have accurate elevations. FME then converts the PHOCUS PHODAT back to DGN for data merging.

Data Merging: FME converts the provincial maps (TRIM data) from their native SAIF format to DGN files. As a separate process, using MicroStation, the TRIM data is merged with the As-Constructed Mapping Data. Since the As-Constructed Mapping Surveys are more accurate than the available TRIM data, the TRIM is clipped out from the area or strip-covered by the As-Constructed Survey, and the remaining TRIM features are tied in to match.

Data Import: As a final step, FME imports the merged DGN files into the BC Hydro EGIS (GE Smallworld format). An FME mapping file controls exactly how FME performs the final import. To simplify maintenance of the features, the entire data schema for all three formats is summarized in a single spreadsheet (refer to Figure 2). This defines the geometry type, DGN display attribution, PHOCUS schema and the complete GE Smallworld Landbase schema. Adding or changing an existing GE Smallworld object, for example, requires only a new entry in the spreadsheet and then the new object is available in the two other supported formats, without requiring any changes to the FME mapping files themselves. This greatly simplifies maintenance of the EGIS data import system.

Learn More

To find out how FME can help address your data interoperability challenge, or to download a free evaluation copy of FME, visit www.safe.com

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Figure 2



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