SAFE SOFTWARE

Technology Brief

MRFCleaner - Data Cleaner for CAD/GIS Migrations

Key Facts

Feature: FME MRFCleaner Transformer

Capabilities: Geometric problem correcting for input data

Benefits: Easier and more accurate data migration, especially during data migration from CAD to GIS

For many years, MRF Geosystems Corporation of Calgary, Alberta, Canada, (*www.mrf.com*) has produced cleaning software and made it available to Bentley MicroStation, Autodesk AutoCAD, Intergraph GeoMedia, and ESRI MapObjects users. Now this same functionality has been made available to FME users to apply to data as it is transformed between arbitrary input and output formats.

MRF's cleaning technology is exposed in the MRFCleaner, a transformer for repairing geometry that is particularly useful during data migration from CAD to GIS. The MRFCleaner is built on the MRFCleanFactory, which can be accessed directly from FME mapping files for those so inclined.

This transformer is available as an extra cost item for FME 2006 GB and later FME releases.

MRFCleaner Applications and Functionality

The MRFCleaner corrects geometric problems in input data such as line overshoots and undershoots within the tolerance set by the user. It is useful for multi-layer and multi-tolerance two-dimensional data cleaning. Typical applications include the integration and conflation of utility maps, parcel maps, topographic maps and resource maps.

The MRFCleaner includes the following functionality:

- fuzzy tolerance
- extending lines
- weeding lines
- joining lines
- short element processing
- removing gaps
- removing duplicates
- removing dangles
- performing conflation

The number of layers used in cleaning the data is determined by the different tolerance values of the input features. Features that have the same tolerances are processed as if they belong to the same layer. This allows feature data from a high quality data source to be assigned a small tolerance and integrated with data from a lower quality data

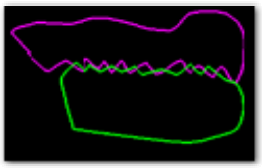
source, which would be assigned a larger tolerance.

Geometries such as path, polygon, donut, ellipse, elliptical arc, multi-area, multi-curve, text, and multi-text are converted to basic geometries such as point, line, path, arc or multi-point prior to the cleaning process. The cleaner does understand and work with circular arcs. Input features with invalid geometries are ignored and deleted.

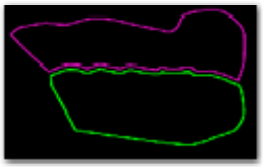
Diagrams Illustrating MRFCleaner Functionality

The following diagrams illustrate some of the results provided by the MRFCleaner.

Example 1: **Lake and Forest Stand Before and After Conflation with MRFCleanFactory:**

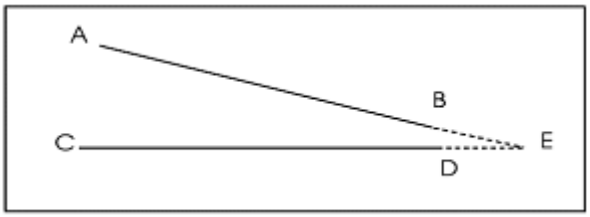


Before Conflation

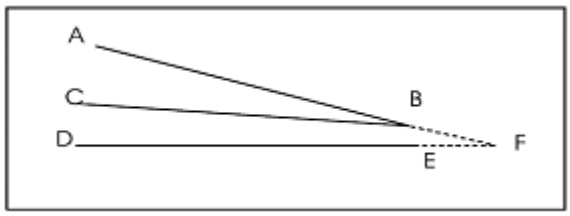


After Conflation

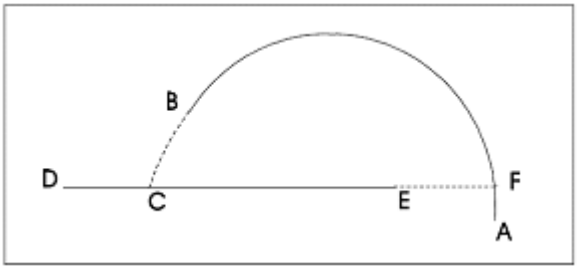
Example 2: **Linear Extension with MRFCleaner:**



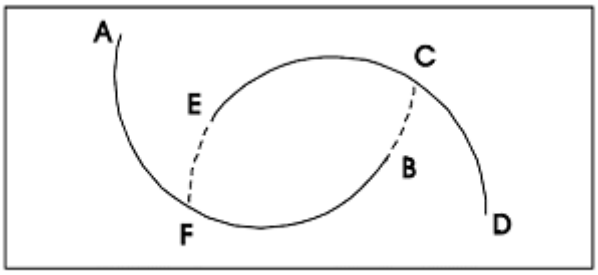
Example 3: **Linear Extension with MRFCleaner:**



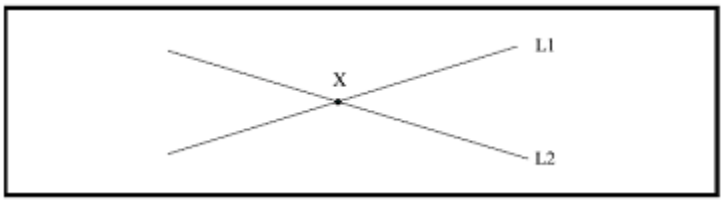
Example 4: **Line-Arc Extension with MRFCleaner:**



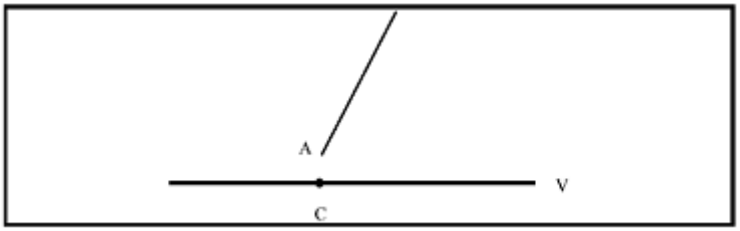
Example 5: **Arc-Arc Extension with MRFCleaner:**



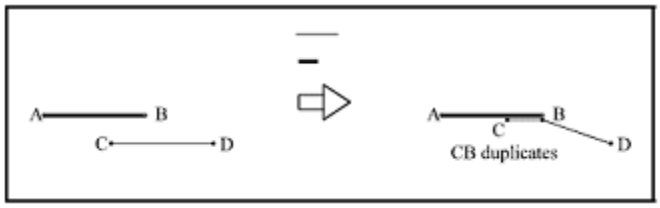
Example 6: **Example of a True Intersection:**



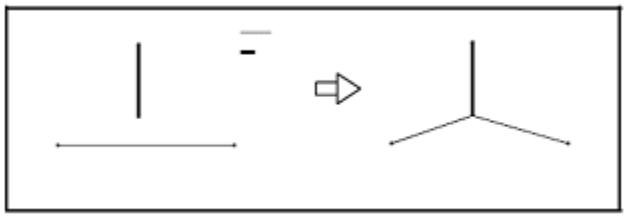
Example 7: **Example of a Fuzzy Intersection:**



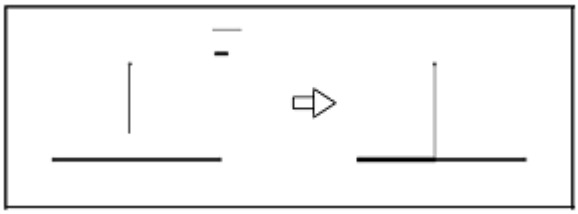
Example 8: **Line with Larger Tolerance Moved to Line with Smaller Tolerance:**



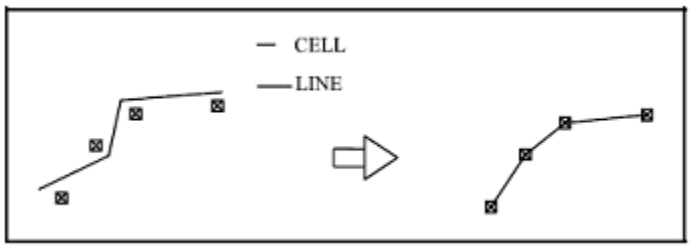
Example 9: **Fuzzy Intersection Created in Linear Element with Larger Tolerance:**



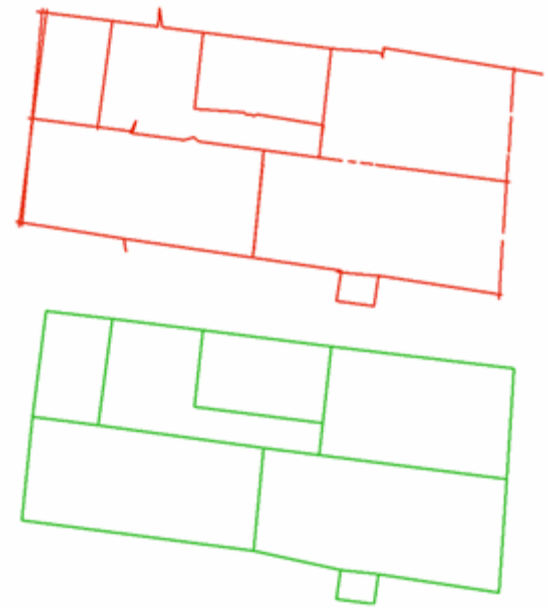
Example 10: **Fuzzy Intersection Created in Linear Element with Smaller Tolerance:**



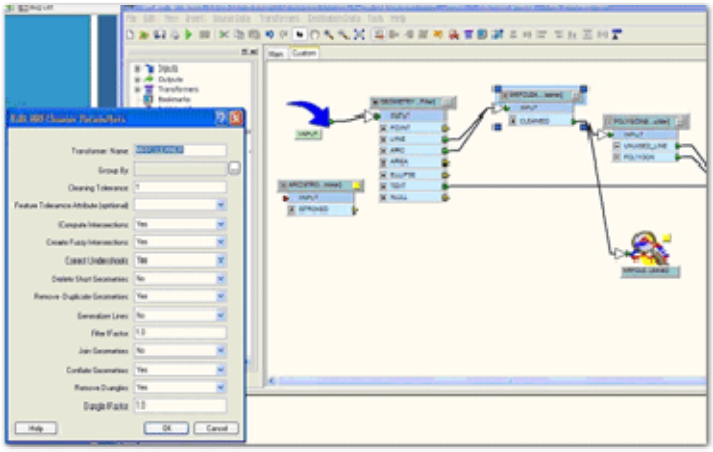
Example 11: **Nodes and Vertices on Linear Element with Large Tolerance Collocated at Cell Origins with Smaller Tolerances:**



Example 12: **Example diagram before and after applying the MRFCleaner:**



Example 13: **MRFCleaner deployed in a Workbench workspace:**



For More Information

For more information, visit www.safe.com.