



Converting MineSight to GIS with the Data Interoperability Extension

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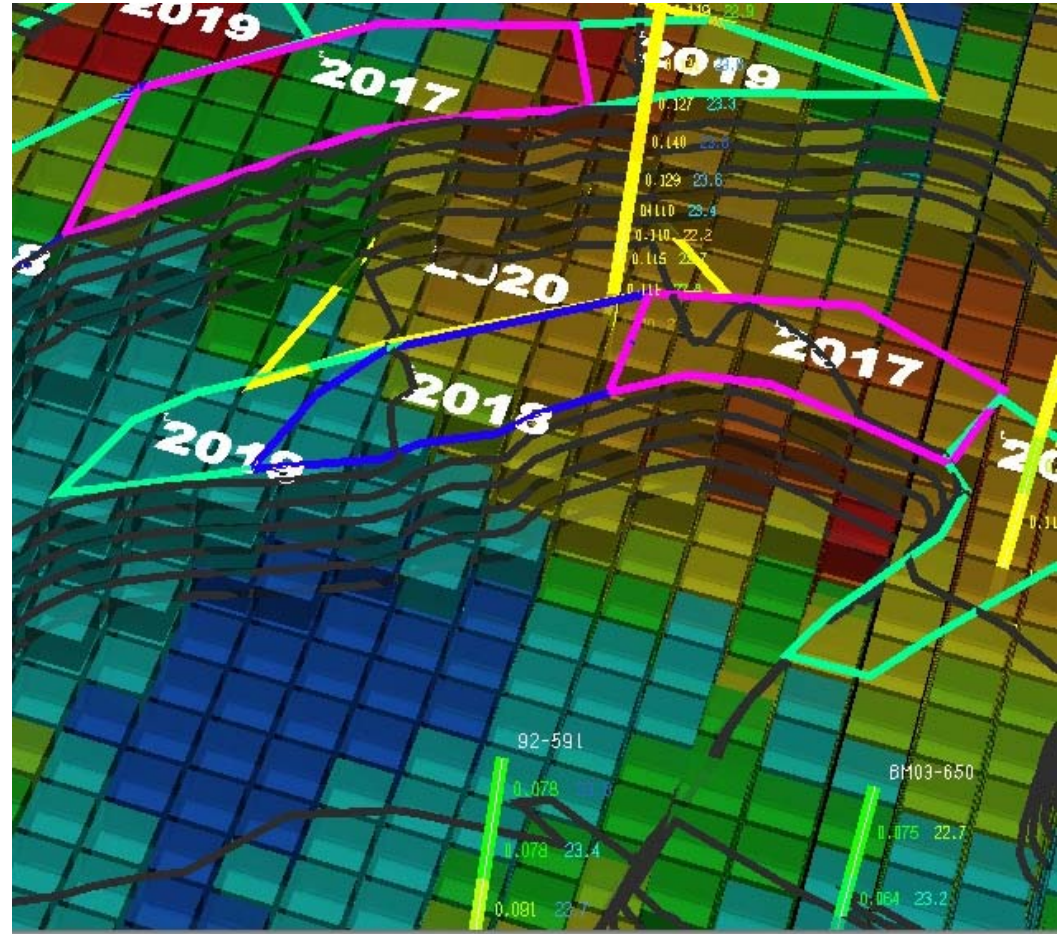
Outline

- Project Overview
- MineSight Data
- What is the Data Interoperability Extension?
- Our Approach
- Lessons Learned
- User Testimonial



Project Overview

- Geologists and Mine Planners base decisions on complex block models
- Bench maps vertically aggregate blocks between two surfaces for 2D visualization
- Existing tools dated, cumbersome, not GIS friendly
- Need a streamlined process





Data Interoperability Extension

- Third-party, integrates FME by Safe Software into ArcGIS' geoprocessing environment
- Create powerful Spatial Extract-Transform-Load (ETL) tools
- Read and write many formats with static or dynamic schemas

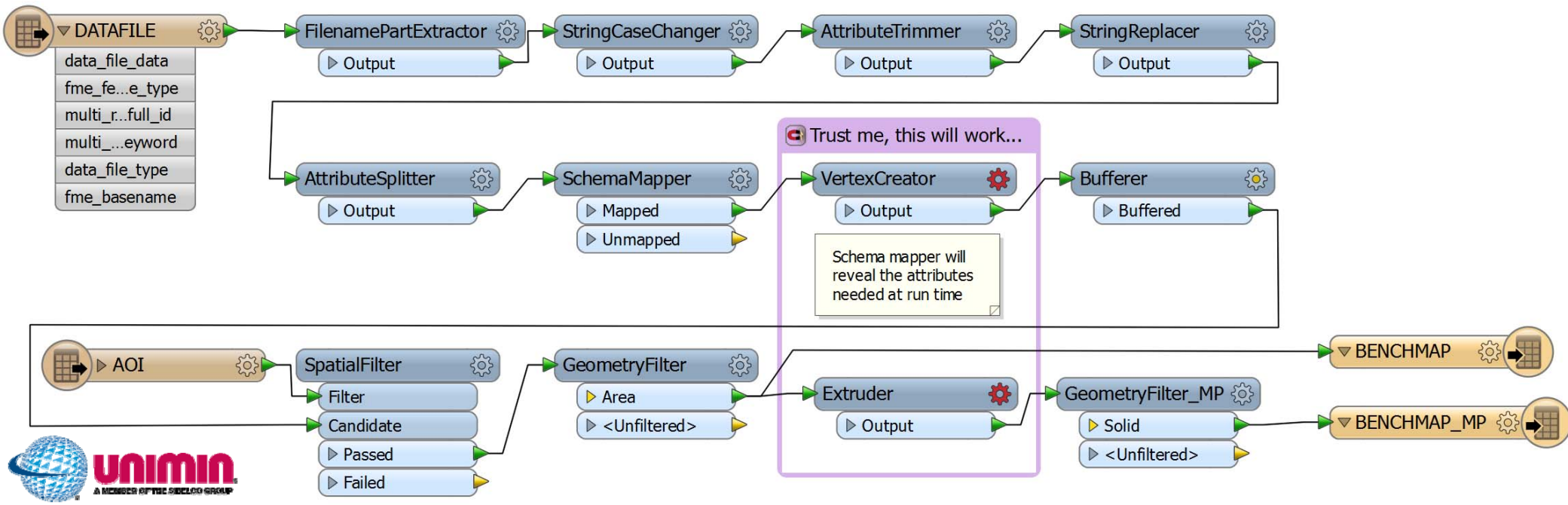
| ArcGIS Desktop Terms | Data Interoperability Terms |
|----------------------|-----------------------------|
| Model Builder | FME Workbench |
| Geoprocessing Model | Spatial ETL Tool |
| Geoprocessing Tool | Transformer |
| Input Variable | Data Reader |
| Output Variable | Data Writer |

Our Approach

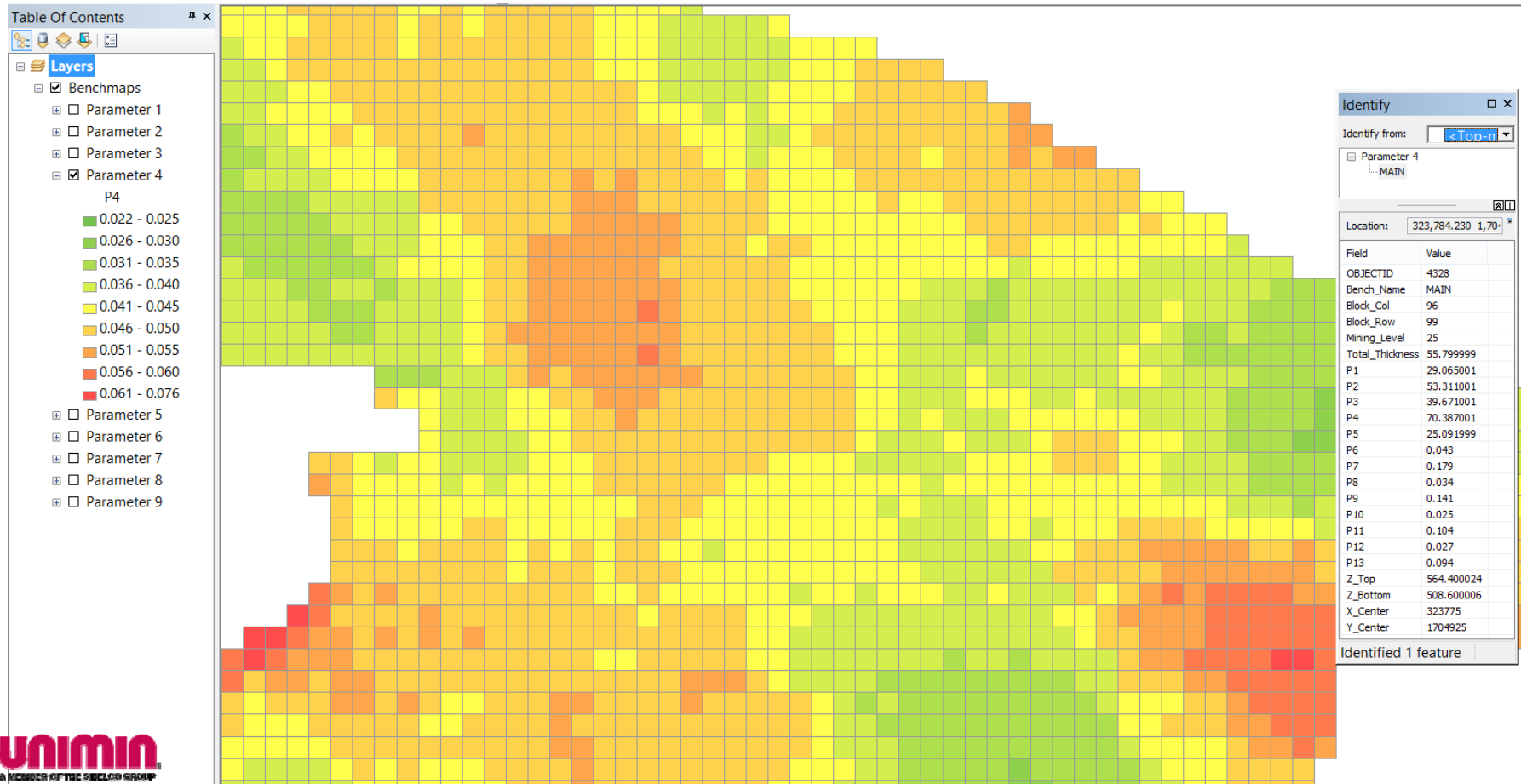
- Spatial ETL tool with Schema Mapper
- Input and output schema defined in CSV

| | A | B | C | D | E | F | G |
|----|---------------------|------------------|-----------------|--------------------|---------------------|---------------|--------------------|
| 1 | Source_Feature_Type | Source_Attr_Name | Dest_Attr_Name | Feature_Class_Name | Attribute_Data_Type | Geometry_Type | Attribute_Sequence |
| 2 | DATAFILE | _rootname | Bench_Name | BENCHMAP | fme_varchar(50) | fme_polygon | 1 |
| 3 | DATAFILE | _list(0) | Block_Col | BENCHMAP | fme_int16 | fme_polygon | 2 |
| 4 | DATAFILE | _list(1) | Block_Row | BENCHMAP | fme_int16 | fme_polygon | 3 |
| 5 | DATAFILE | _list(2) | Mining_Level | BENCHMAP | fme_int16 | fme_polygon | 4 |
| 6 | DATAFILE | _list(3) | Total_Thickness | BENCHMAP | fme_real32 | fme_polygon | 5 |
| 7 | DATAFILE | _list(4) | P1 | BENCHMAP | fme_real32 | fme_polygon | 6 |
| 8 | DATAFILE | _list(5) | P2 | BENCHMAP | fme_real32 | fme_polygon | 7 |
| 9 | DATAFILE | _list(6) | P3 | BENCHMAP | fme_real32 | fme_polygon | 8 |
| 10 | DATAFILE | _list(7) | P4 | BENCHMAP | fme_real32 | fme_polygon | 9 |
| 11 | DATAFILE | _list(8) | P5 | BENCHMAP | fme_real32 | fme_polygon | 10 |
| 12 | DATAFILE | _list(9) | Zone | BENCHMAP | fme_int16 | fme_polygon | 11 |
| 13 | DATAFILE | _list(10) | Ore_Perc | BENCHMAP | fme_real32 | fme_polygon | 12 |
| 14 | DATAFILE | _list(11) | Z_Top | BENCHMAP | fme_real32 | fme_polygon | 13 |
| 15 | DATAFILE | _list(12) | Z_Bottom | BENCHMAP | fme_real32 | fme_polygon | 14 |
| 16 | DATAFILE | _list(13) | X_Center | BENCHMAP | fme_real64 | fme_polygon | 15 |
| 17 | DATAFILE | _list(14) | Y_Center | BENCHMAP | fme_real64 | fme_polygon | 16 |

| | | | | | | | | | | | | | | |
|-----|----|----|------|--------|--------|--------|--------|--------|-------|--------|---------|---------|------------|-------------|
| 139 | 12 | 25 | 45.8 | 37.887 | 61.687 | 39.588 | 78.755 | 16.841 | 1.000 | 97.013 | 571.600 | 526.600 | 325925.000 | 1700575.000 |
| 140 | 12 | 25 | 46.9 | 37.510 | 61.488 | 39.742 | 78.651 | 16.914 | 1.000 | 95.610 | 572.900 | 526.000 | 325975.000 | 1700575.000 |
| 130 | 13 | 25 | 41.6 | 39.411 | 62.930 | 38.829 | 79.686 | 16.251 | 5.000 | 96.935 | 571.500 | 529.900 | 325475.000 | 1700625.000 |



Results



Lessons Learned/Ideas for Improvement



- Dynamic schemas are more difficult than static schemas, especially if field names are not standardized across projects
- Schema Mapper is especially tricky
 - CSV schema table may take some experimenting
 - Exposing certain end user parameters not as obvious as in other transformers
- Know your input data format well
 - Specifications would have been very helpful!
 - Parsing the report header file would allow automating the CSV schema table to further streamline the process.

User Testimonial

“At the 11th hour a report needed a significant block model update. Our old process took so long there is no way I could have fixed the block model and then updated all 30 bench map layers in GIS by the deadline. Using GIS made the task extremely easy and saved several hours.”

- Senior Geologist

“GIS allows our geologists to focus on the content of their report rather than tedious data conversion steps.”

-Manager



Conclusion

- Geology required a solution to streamline a tedious workflow
- Data Interoperability saved programming effort to get a solution in place quickly
- Minimal training because Spatial ETL tools run like GP tools users are already familiar with
- Solution quickly creates a value added information product