University of Ljubljana
Faculty of Civil and Geodetic Engineering

GeoBIM benchmark

Geo-referencing with FME workbench

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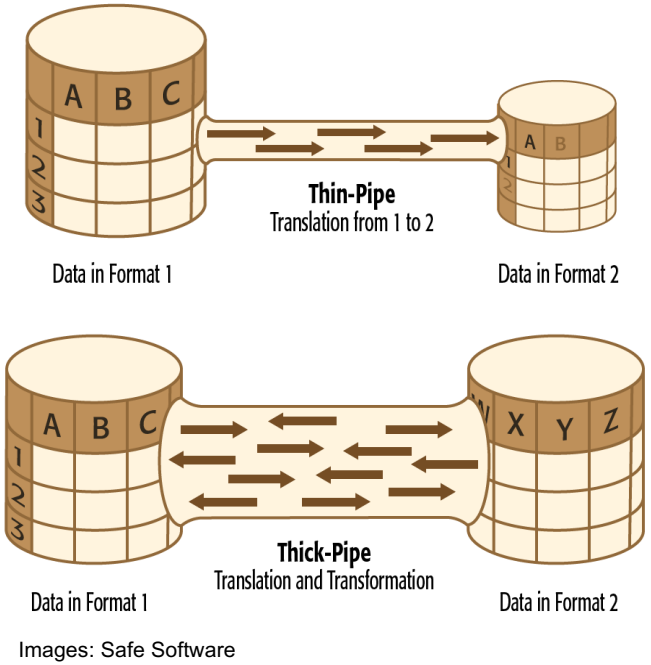
Amsterdam, December, 2019

What is FME

- Feature Manipulation Engine
- ETL (Extract, Transform, Load)
- Strong support for spatial data
- Can read/write 368 data formats including IFC
- 450+ transformers for data (spatial and non-spatial) manipulation
- Not a typical program like others



Images: Safe Software

Georeferencing IFC

FME supports IFC read and write 

FME supports CRS and transformations 

Seems like an easy straitforward task:

Read IFC – Transform geometries – Write georeferenced IFC

Took me 10 minutes to implement and it did not work 

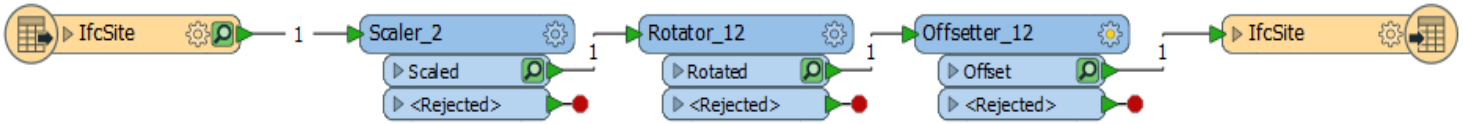
Georeferencing IFC

Can extract data, can transform it, Can write it, but **it is not the same data any more**!

Cannot assign CRS to IFC Writer

After first attempts, I tried to do only a copy of the IFC file by just reading and writing. **I failed!**

If we use the extracted data for other output (OBJ, KML, etc.) **it works!**



Georeferencing IFC – 2nd option

There is another option – **Read IFC as a text file**

- Each line is one feature
- Extract and alter data using FME string functions

Level of Georeferencing (LoGeoRef) 30 (Clement and Gröne, 2018)
Georeferencing using **IfcSite** element.

Georeferencing IFC – 2nd option