Some Lesser-Used FME Data Wrangling Techniques

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Locus Presentation

This presentation is a bit of a reflection of some of the project work I have been involved with over the last year … and an opportunity to highlight some “lesser-used” FME techniques which may be of wider-interest to this audience

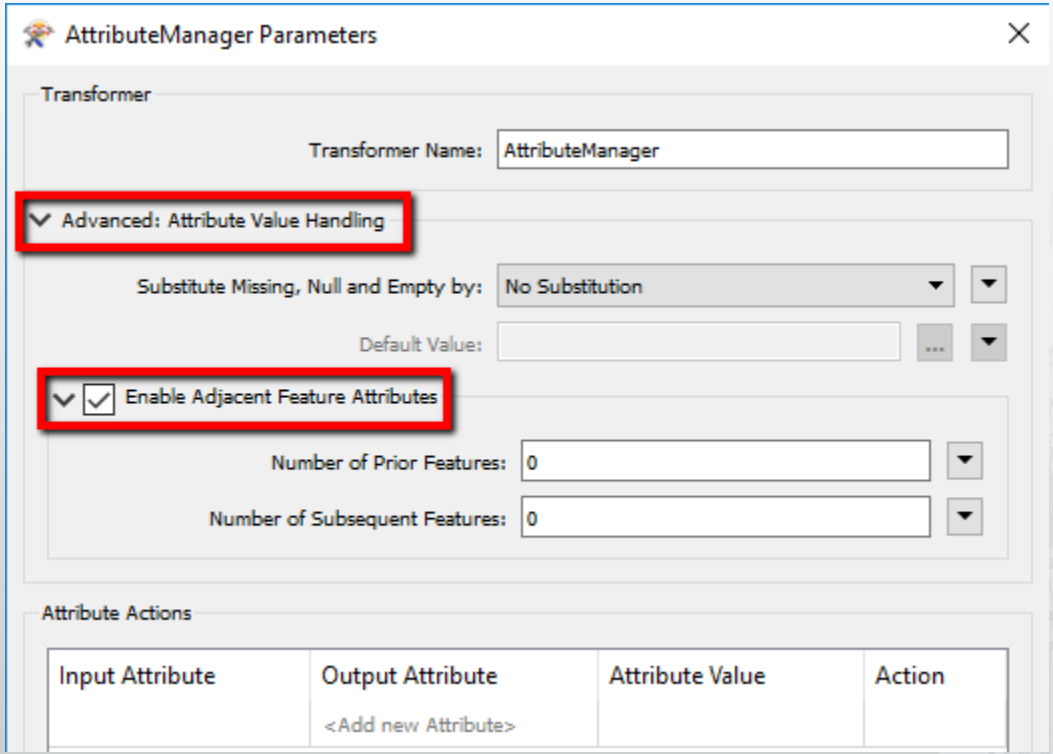
Look-ahead / Look-behind Data Parsing

Look-ahead/Look-behind Data Parsing

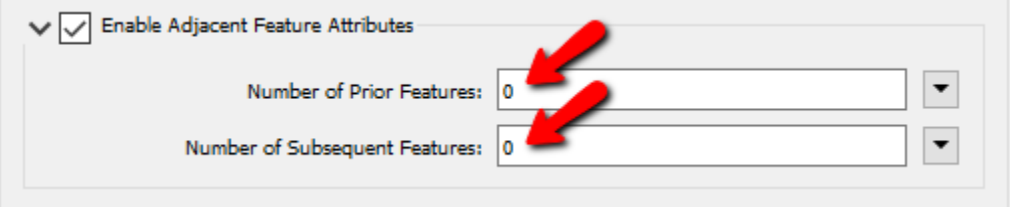
FME is **feature-based** meaning each feature within a stream of data is processed separately

The advanced options is the **AttributeManager** and the **AttributeCreator** transformer parameters now allow us to access the attributes of adjacent features in a stream of data …

Look-ahead/Look-behind Data Parsing



Look-ahead/Look-behind Data Parsing



- Attributes of prior features are referenced as feature[-1].AttrName, feature[-2].AttrName
- Attributes of subsequent features are referenced as feature[+1].AttrName, feature[+2].AttrName
- Attributes of the currently processed feature are accessed directly without a prefix

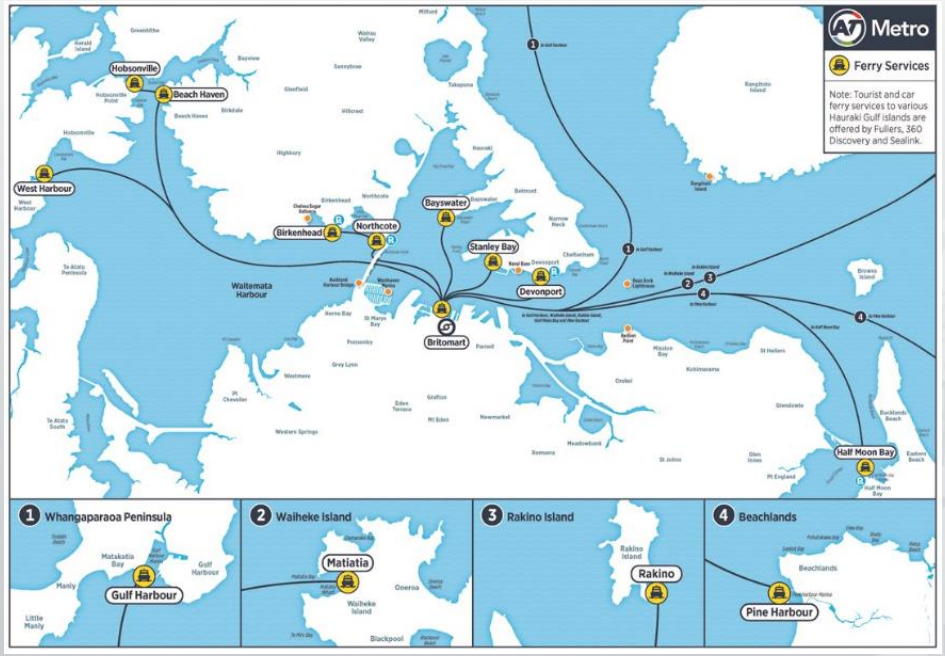
Look-ahead/Look-behind Data Parsing

The ability to be able to access the attributes of adjacent features is particularly useful when working with data where **order** and **sequence** of a stream of data is important

- Time-series data
- Real-time data streaming
- Network data (routes and traces)
- Hierarchical data (tree structures)
- Sorted data

Look-ahead/Look-behind Data Parsing

FME Demo …



CONNECT. TRANSFORM. AUTOMATE.

Don’t forget the Format Attributes

Don’t forget the Format Attributes

Format Attributes are built in FME attributes that you can “expose” and use to control features

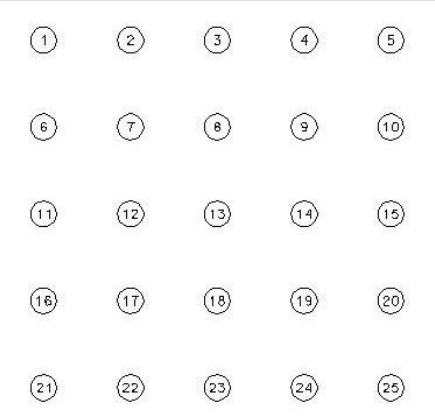
Format attributes are specific to a data format schema but can be remapped between schema formats

The AutoCAD DWG/DXF format carries forward **533** separate format attributes and attributes-lists

Don’t forget the Format Attributes

Text label justifications is handled differently in different GIS

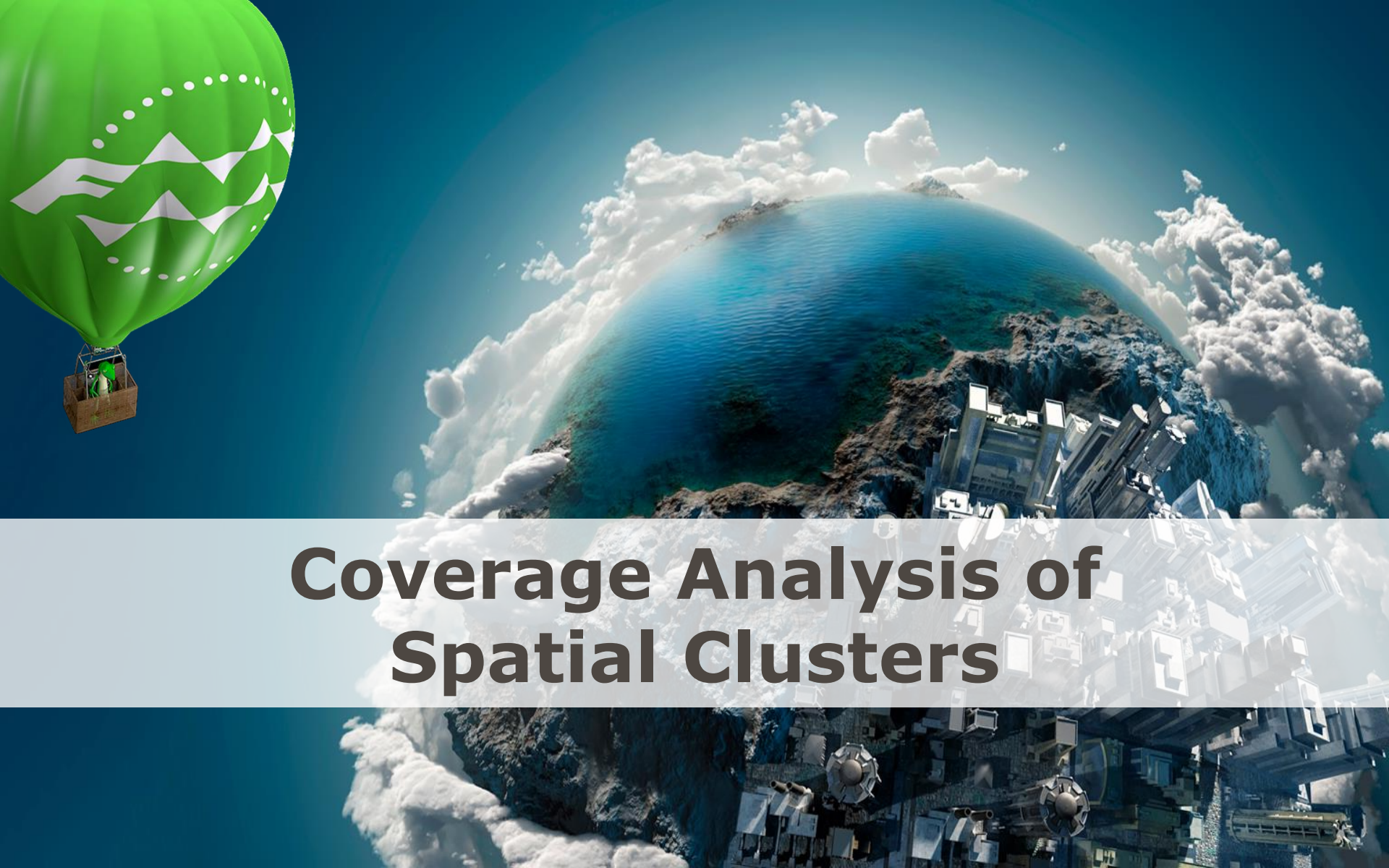
Format Attributes capture these values



Formats	Smallworld	MicroStation DGN	AutoCAD DWG/DXF	Intergraph GeoMedia	ESRI E00/Coverage	ESRI GeoDatabase
Format Attributes	*sworld_vert_just*	*igds_justification*	*autocad_justification*	*fm0_justification*	*e00_text_just*	*geodb_v_align*
	sworld_horiz_just					*geodb_h_align*
Diagram Position						
1	5,1	0 (or 3)	autocad_top_left	10	7	top, left
2	5,2					
3	5,3	6	autocad_top_middle	8	8	top,center
4	5,4					
5	5,5	12 (or 9)	autocad_top_right	9	9	top, right
6	4,1					
7	4,2					
8	4,3					
9	4,4					
10	4,5					
11	3,1	1 (or 4)	autocad_middle_left	2	4	center, left
12	3,2					
13	3,3	7	autocad_middle_middle	0	5	center, center
14	3,4					
15	3,5	13 (or 10)	autocad_middle_right	1	6	center, right
16	2,1					
17	2,2					
18	2,3					
19	2,4					
20	2,5					
21	1,1	2 (or 5)	autocad_bottom_left	6	1	bottom, left
22	1,2					
23	1,3	8	autocad_bottom_middle	4	2	bottom, center
24	1,4					
25	1,5	14 (or 11)	autocad_bottom_right	5	3	bottom, right

Don’t forget the Format Attributes

FME Demo …



Coverage Analysis of Spatial Clusters

Coverage Analysis of Spatial Clusters

Waldo Tobler's 1st Law of Geography states …

"… everything is related to everything else, but near things are more related than distant things."

In the GIS World, Tobler's 1st Law often manifests itself as a **spatial cluster** … the location of statistically significant hot spots, cold spots and spatial outliers

Coverage Analysis of Spatial Clusters

Probably the earliest known example of the insights afforded by cluster mapping is **John Snow's 1854 map of cholera cases** in London.

> *Snow plotted cholera infections and deaths on a map and was able to show that they were clustered around the 'Broad Street' water pump … he didn't know the cause, but removed the pump's handle and the cascade of cases was halted*

Coverage Analysis of Spatial Clusters

FME Demo …

It turns out that Snow's original datasets can be found online

FME WORLD TOUR 2018

THANK YOU!

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