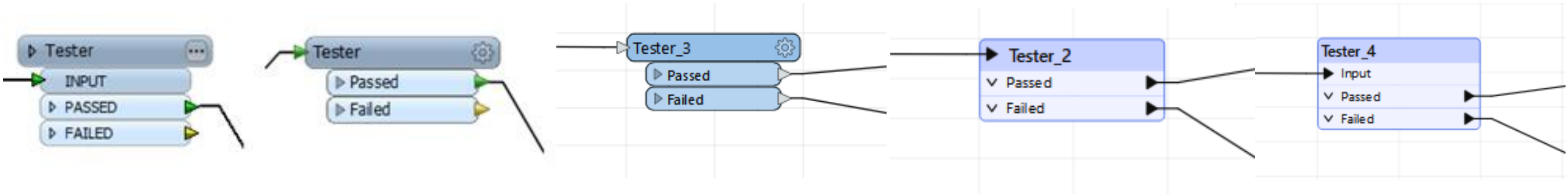
Testing and FME



What can you test?

- Does the process meet requirements?

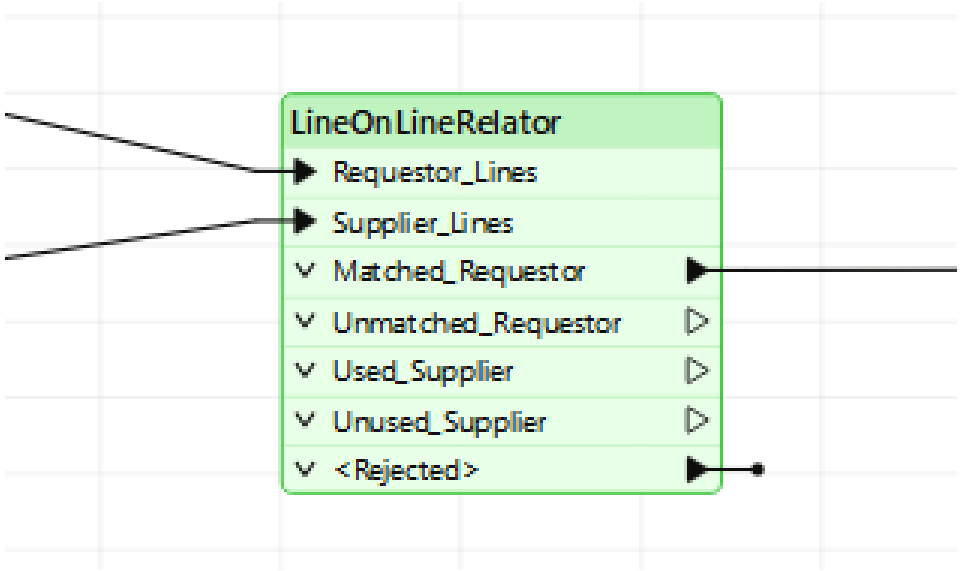
- Is the process logic complete, with no gaps
- Has everything been created correctly. Does it do what it is meant to, with every combination of input
- Is the process currently working (isolated or integrated)
- Errors handled/communicated appropriately
- Best practice, or company standard
- Does the process still meet requirements
- Is the input data suitable for use. Is it what it says it is. Schema change

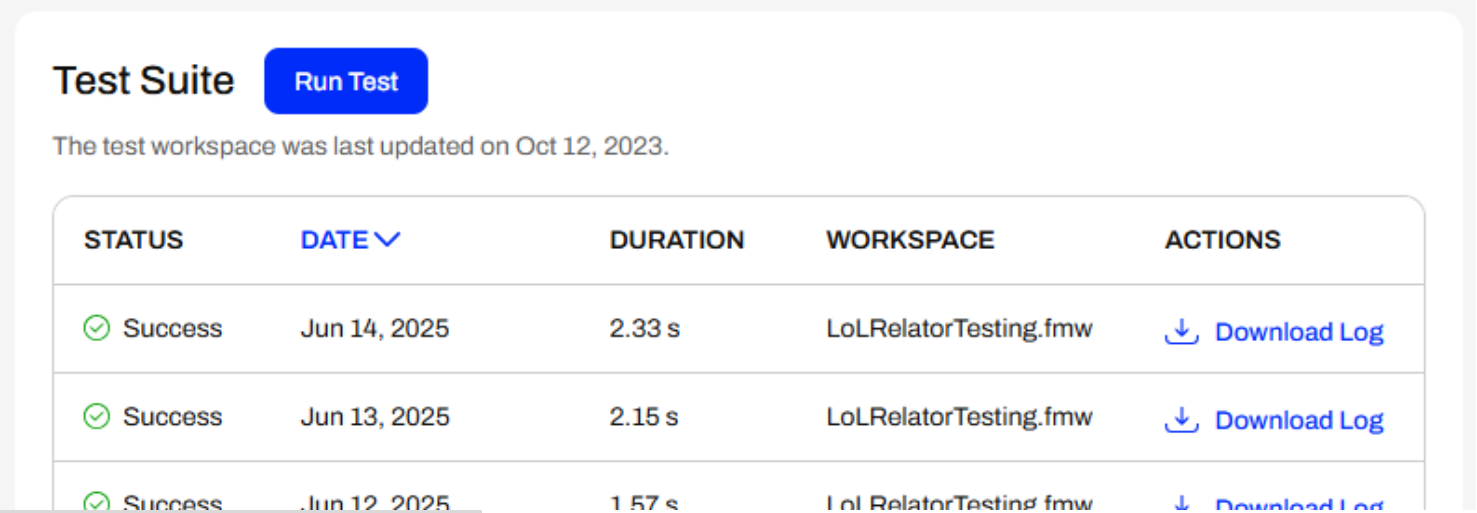
- Test within workspace or after end
- Test result data directly, or functionally in an application
- Often data can look and test fine, but it's not until it is tried to be used further that its shortcomings appear.
- Sometimes not a binary pass/fail
- How to clarify what is right? Requirements. Test cases.

Custom transformer testing (unit testing)

- Tests are simply validating that the transformers still work in the same way

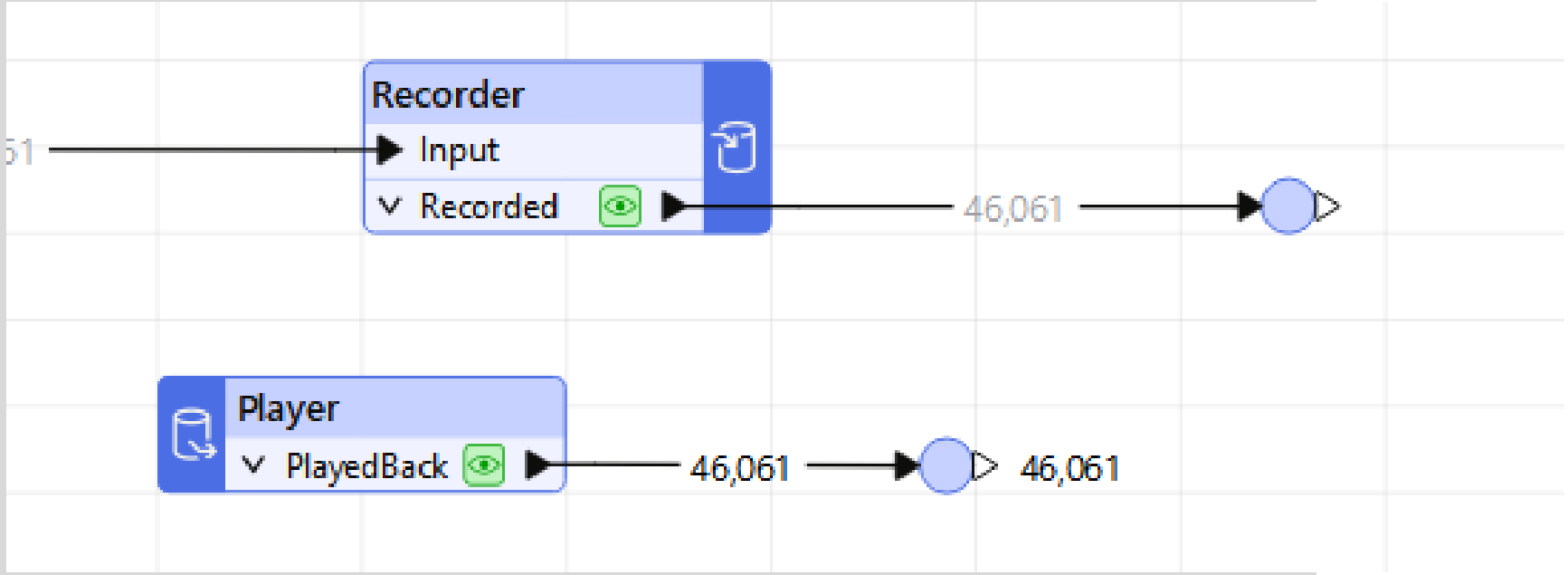
- Bulk mode added to Feature Merger (2023)
- 10000+ count issues (2024)
- Geometry Name (2025)

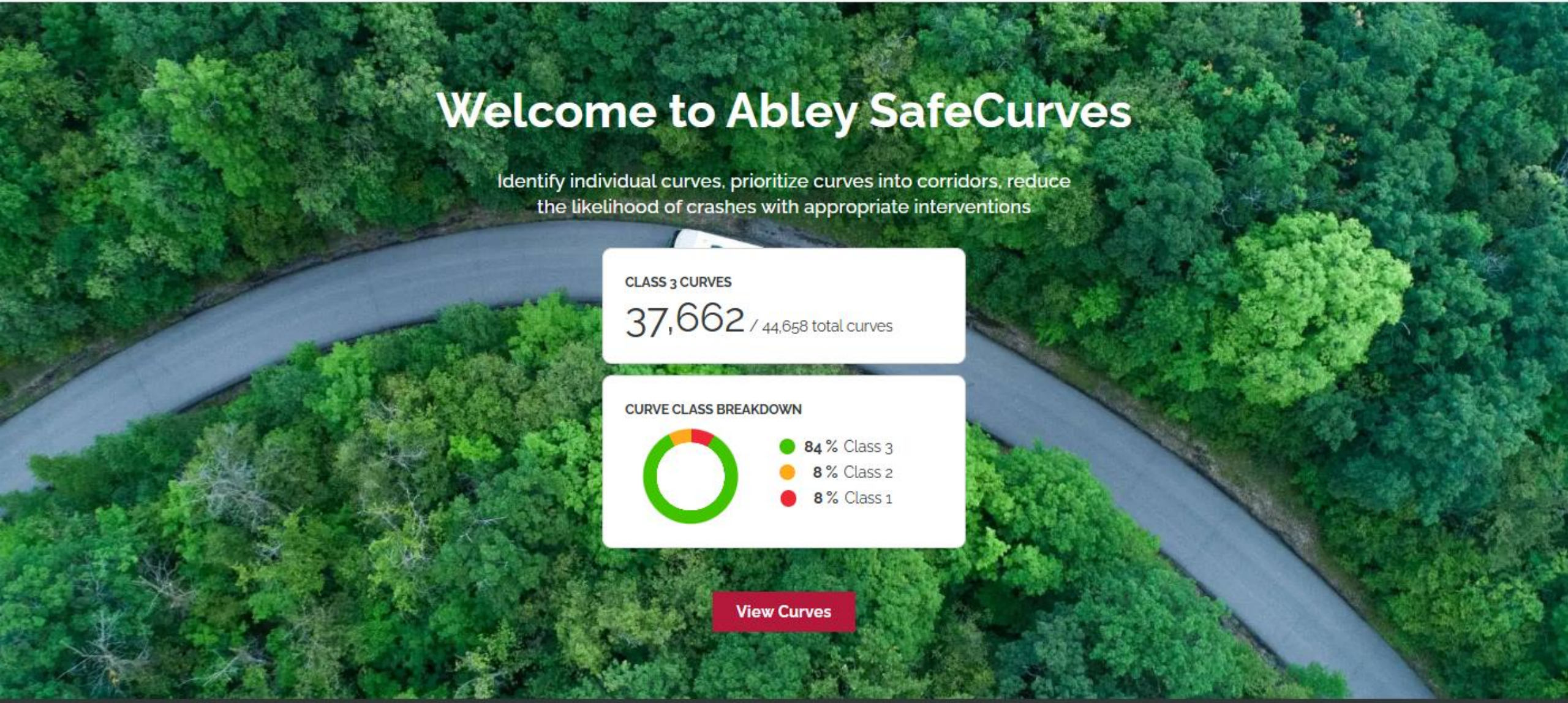




Custom transformer testing (unit testing)

- Recorder/Player
- Despite data caching on the way, can still help to DIY





Welcome to Abley SafeCurves

Identify individual curves, prioritize curves into corridors, reduce the likelihood of crashes with appropriate interventions

CLASS 3 CURVES

37,662 / 44,658 total curves

CURVE CLASS BREAKDOWN

- 84 % Class 3
- 8 % Class 2
- 8 % Class 1

View Curves

What do test cases look like?

- Core aspects are start/end points and radius
- Is it possible to create enough test cases that cover all the cases
- Very large curves, very small curves. Low vertex density. Randomness in digitisation

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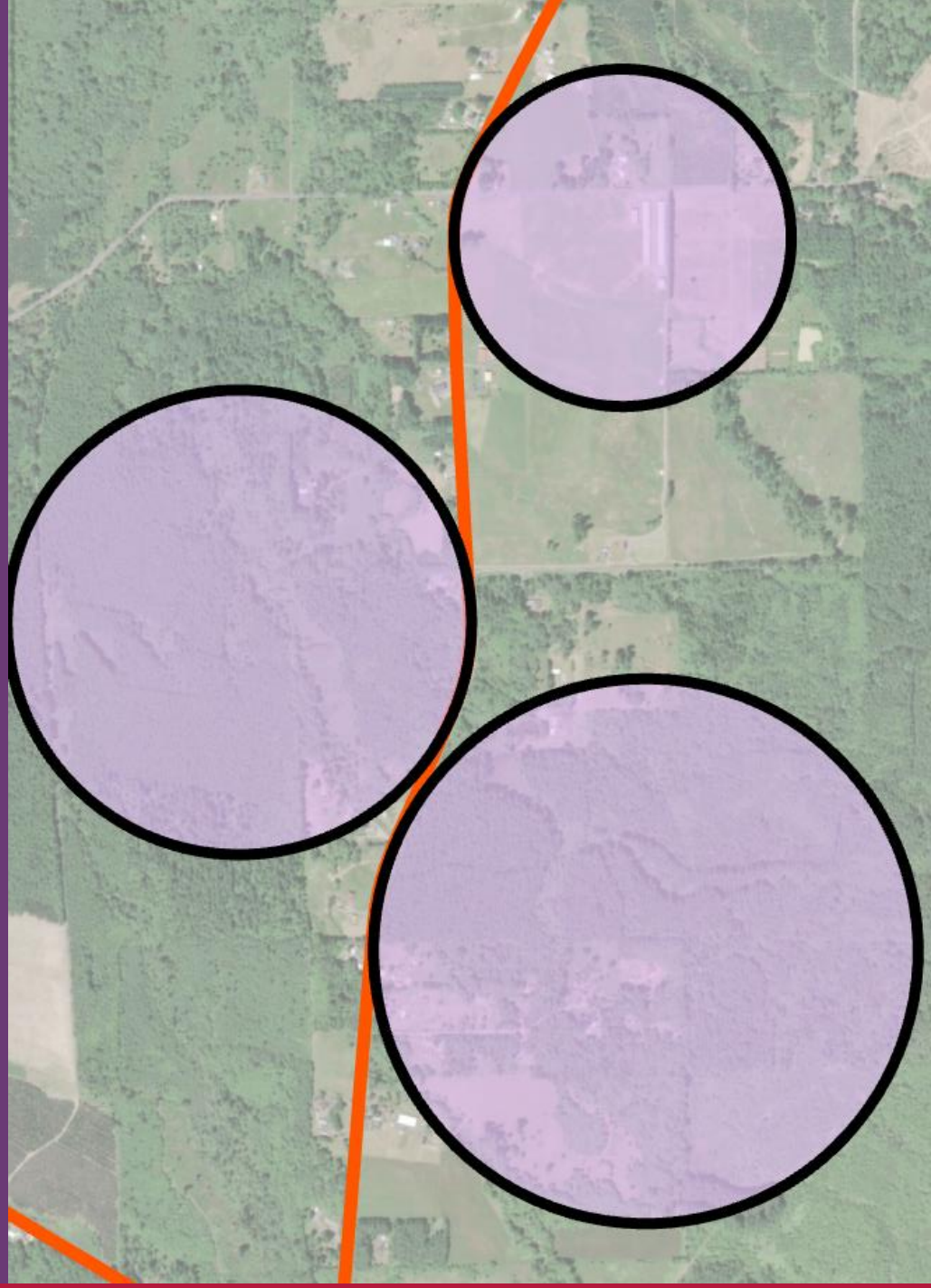
- There is no final version of the process
- Think long term, if validating or reviewing specific highway in detail, that manual verification can become tests for future

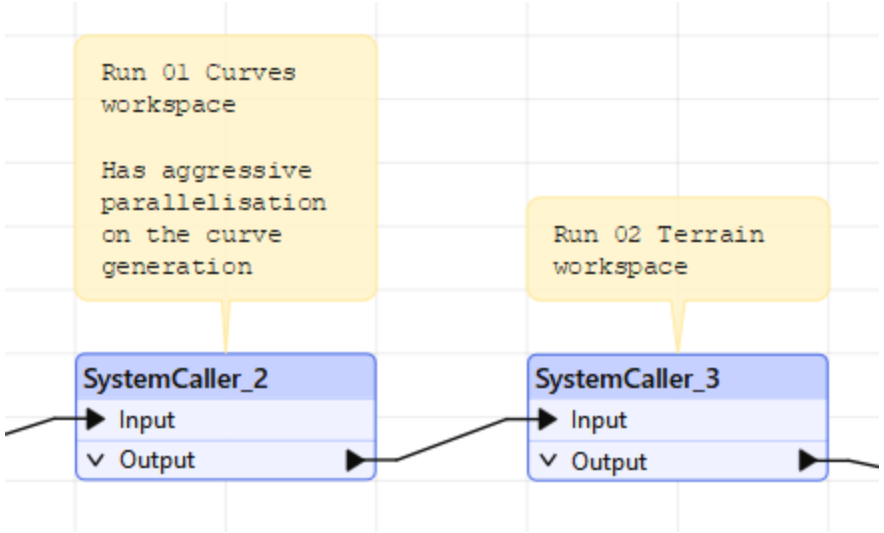


What do test cases look like?

- Check self consistency between curves, sign type and speeds
- Comparison vs existing, but not automated
- Manual review, and keep validated results for future, for important corridors, or otherwise weird edge cases that would signify a problem
- Sign offsets may change if curve changes, so… Within this buffer, check this sign exists

Automated End to End Testing

- SafeCurves (Whole USA) takes too long to run to risk getting to the end and finding a critical issue
- So, use Wyoming
- Summary of result, and vs previous
- Keep confidence in data through versions



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Schema Mapper for Test Logic

- Expressions in Schema Mapper (since 2023)
- Call any(?) FME function
- Track error total for any feature
- A lot of data quality tests can be built this way
- Version tests separately to the workspace

- If your rule is written as @Value(A) = @Value(B)
- How do you execute that?
- (was TCL, now deprecated)
- FME_Execute [FME_GetAttribute __validation_query]

A	B	C	D
FilterAttribute	FilterValue	TargetAttribute	TargetValue
Curve_Radius	fmeexpression=@Evaluate(@Value(Curve_Radius) < 25)	ErrorType	Small Radius
Curve_Superelevation	fmeexpression=@Evaluate(@Value(Curve_Superelevation) < -2)	ErrorType	Negative Super

D	E	F
etValue	TargetAttribute2	TargetValue2
l Radius	ErrorTotal	fmeexpression=@Evaluate(@Value(ErrorTotal)+1)
tive Super	ErrorTotal	fmeexpression=@Evaluate(@Value(ErrorTotal)+1)

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