

Using Automated Conflation to Manage Multiple Road Centerline Networks within One LRS

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1Spatial



What is Conflation

Why is Conflation so Challenging

Geospatial Conflation

Matching and application of features and attributes in adjacent GIS sources

Challenges

Segmentation

Coverage & density

Mapping precision

Attribution

Consistency – when done manually

Introduction to 1Spatial

Data Management Software and Solutions



Data

Validation



Data

Integration



Data

Enhancement

Public Safety - NG9-1-1 Enterprise and SaaS

Statewide/Regional/Locals NG9-1-1 Data Supply Chains



Government



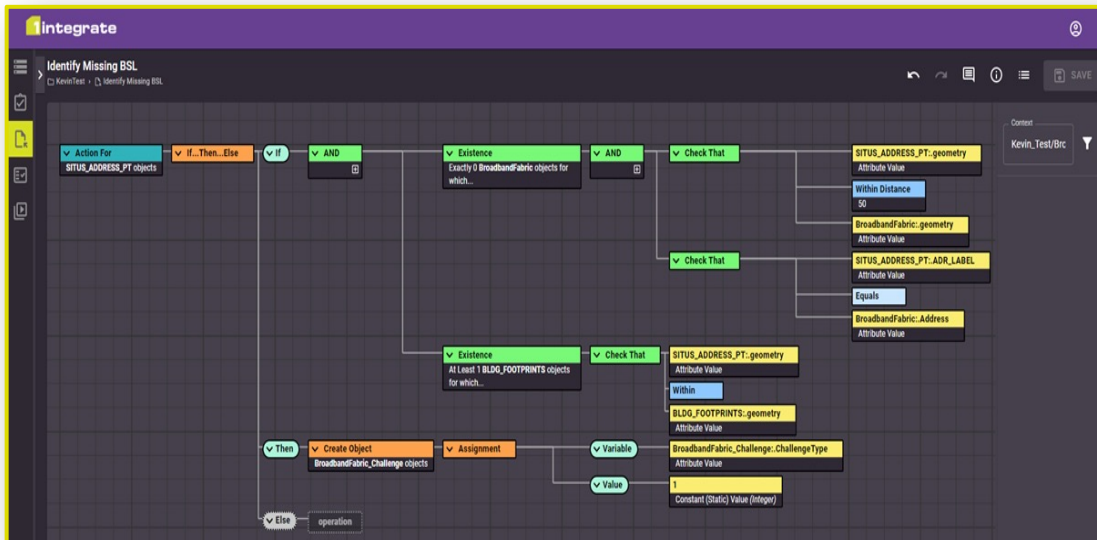
Transportation



Technology

COTS Software - 1Integrate

1integrate

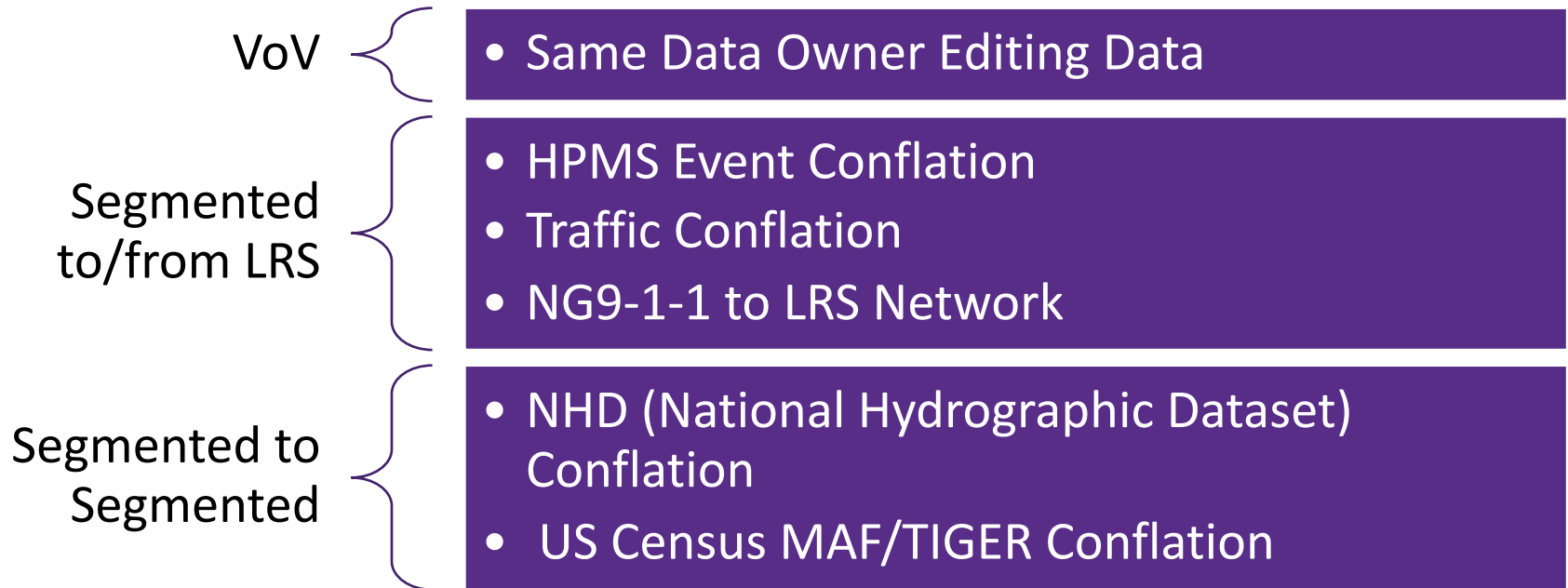


1Integrate – Rules Engine:

- Validate, Integrate & Enhance Datasets
- Data agnostic
- Run centrally managed business rules against multiple sourced spatial and non-spatial data
- Scalable
- Rapid Processing (unique Indexing)
- Configurable

Types of Conflation

Depends on the customer, where data is coming from and who is editing



General Conflation Process

Automation is key

Many sources of data



Automated with
 **integrate**

MassDOT & 1Spatial Conflation Project #1

Streetlight Data to Road Inventory

Project

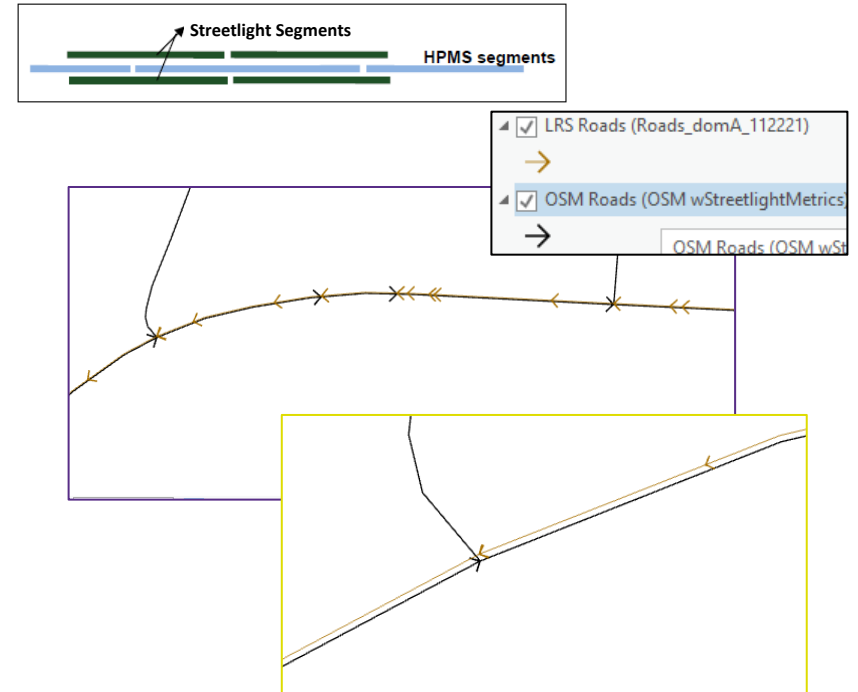
- Conflate Traffic ID's (Streetlight Data) onto LRS Segmented Network by HPMS data items

Challenges

- Different Segmentation – Traffic OSM, LRS at Data Items
- Mapping Precision Differences
- No Matching Route ID's – Although both datasets have street names

Solution

- Automatically match Traffic Segments to LRS Route (Multiple Buffer Tolerances, % Containment, Bearings and Street Names)
- Segment new LRS where data item would start and end

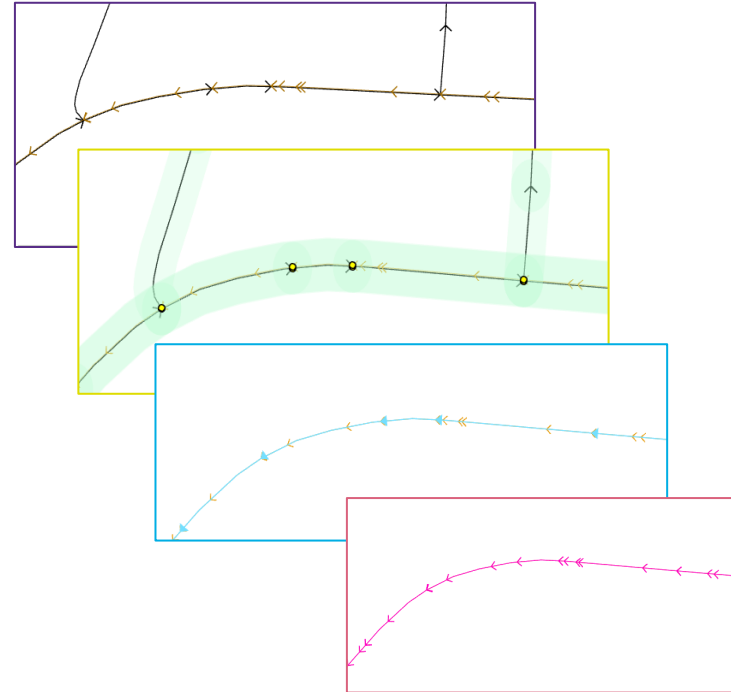


MassDOT & 1Spatial Conflation Project #1

Streetlight Data to Road Inventory

Results

- 96% of Streetlight segments conflated
- 2-week delivery from start of project
- Repeatable



MassDOT & 1Spatial Conflation Project #2

TMC segments to LRS through ETC

Project

- Conflate TMC segment information onto LRS Routes

Challenges

- Different Segmentation
- Different handling of divided highways, ramps, and intersections
- Non-dominant and dominant routes in the same geometry

Solution

- Automatically match TMCs to LRS using buffers, bearings, RouteIDs
- New LRS layer with fully conflated joined tables



MassDOT & 1Spatial Conflation Project #2



TMC segments to LRS through ETC

Results

- 97.17% of TMC segment information conflated
- Processing for full state took 2 hours
- Conflation is re-run yearly

Automation is KEY!

Why?



Repeatable



Consistency



Saves time



Can be applied to
other processes

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Thank you