

Beyond LRS

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See Adrien Litton's Article on Linked in

Take Away #1 is Linear Referencing is the basis for future highway funding since State DOTs are required to submit HPMS on an event driven system.



Linear Referencing at FHWA

It is how States provide data to HPMS.

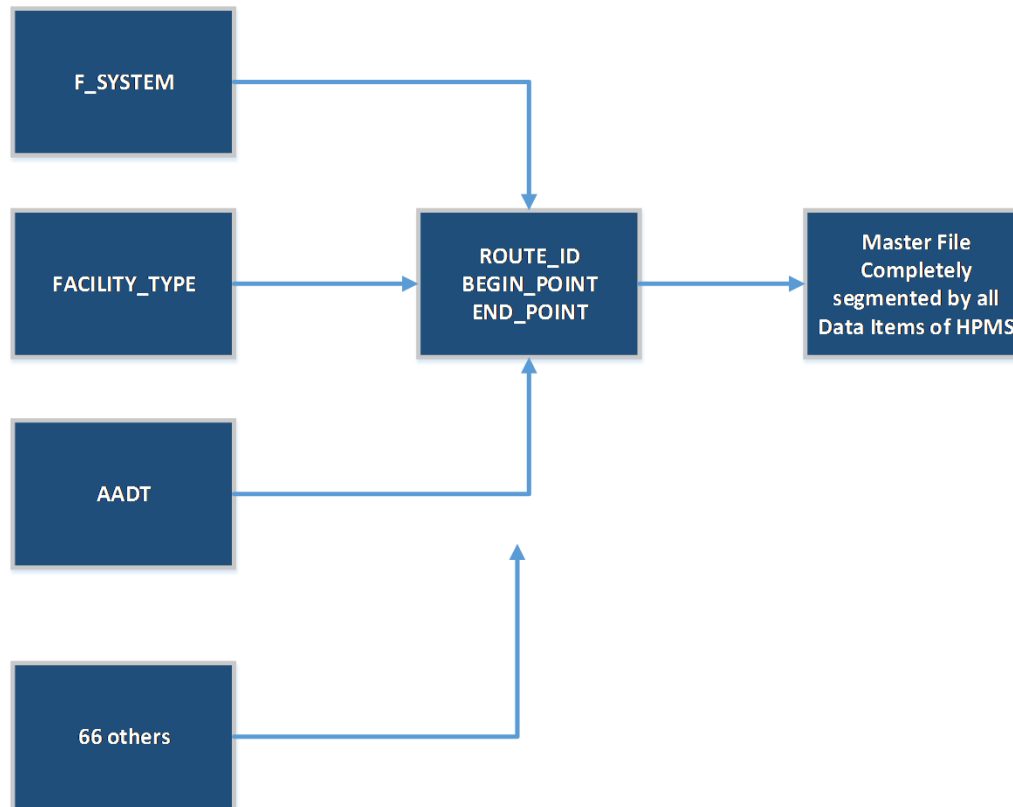
Anytime we need a length of something, it is based on the LRS.

DOTs have been Linear Referencing for decades

LRS is easy to explain to engineers.



The HPMS current process



Creates a master dyn
segged file

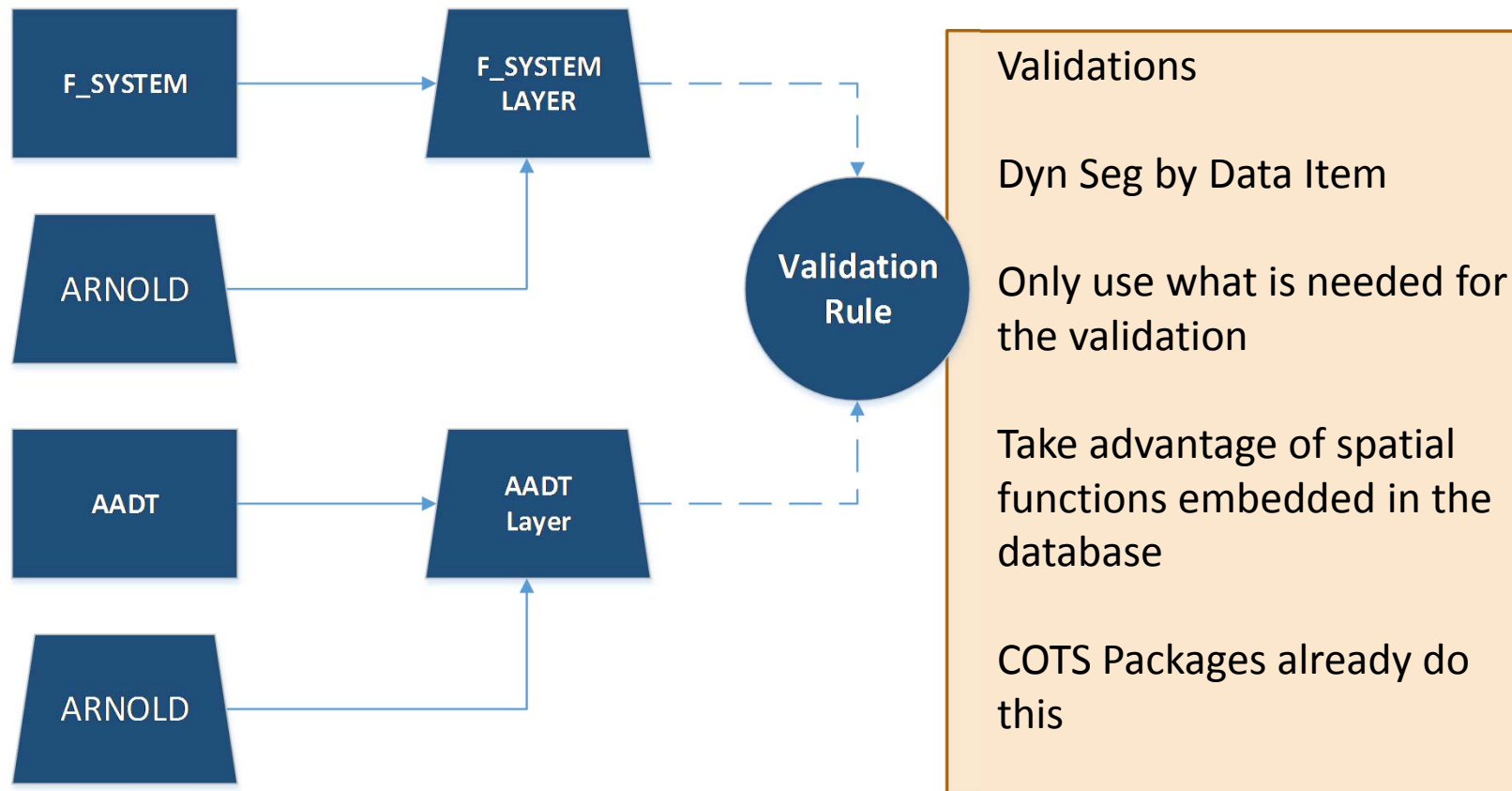
Goes through a process
that contains
information that is not
part of the solution.

Easier to code even
though it is a 13 page
custom SQL Query

This is not spatial

Performance sucks

Where HPMS should be



Take away #2

Our current process relies exclusively on Non-Spatial Analysis (LRS).

We need to take HPMS Analysis to the next level by introducing a true spatial component.



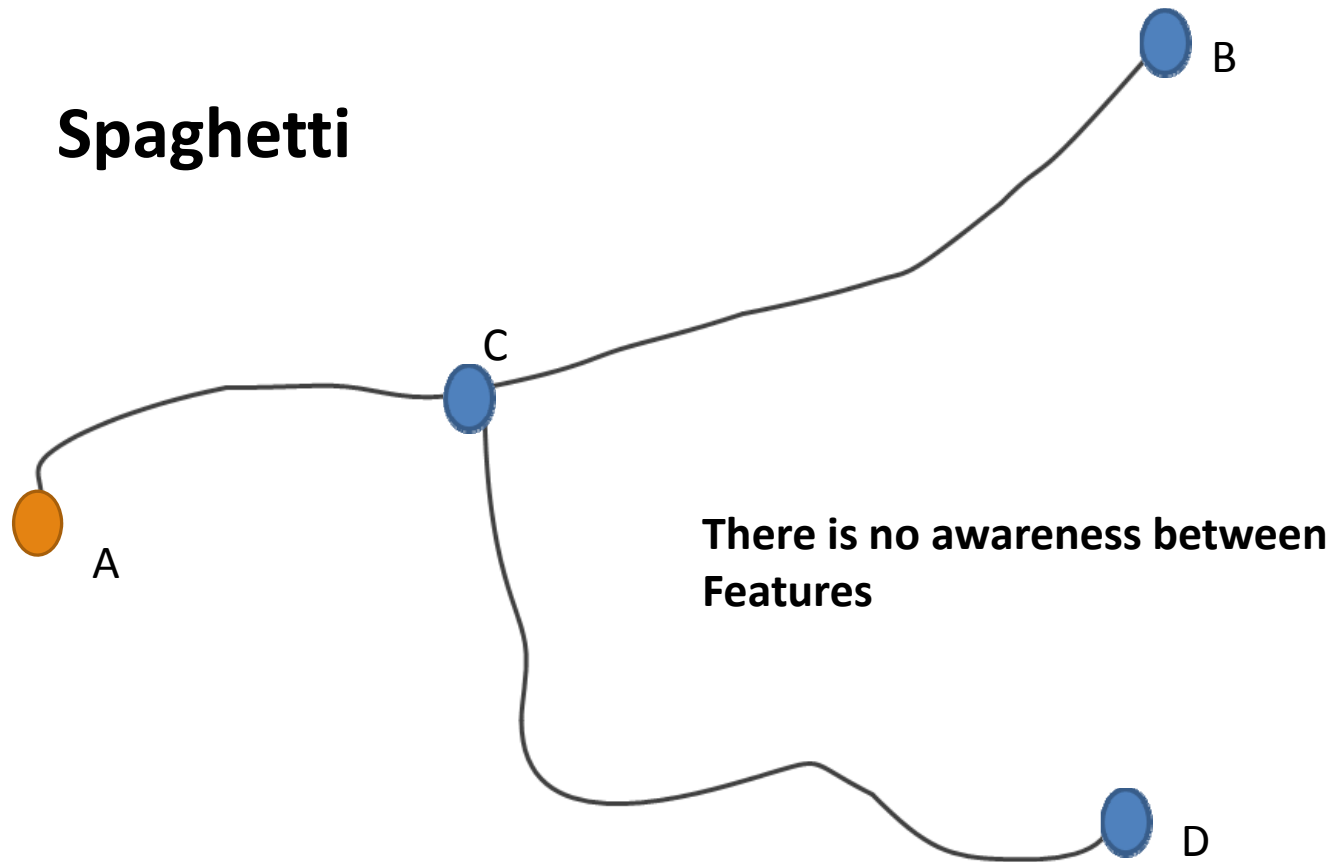
Topology- what is it

WE ARE REALLY TALKING ABOUT
GRAPH THEORY



Levels

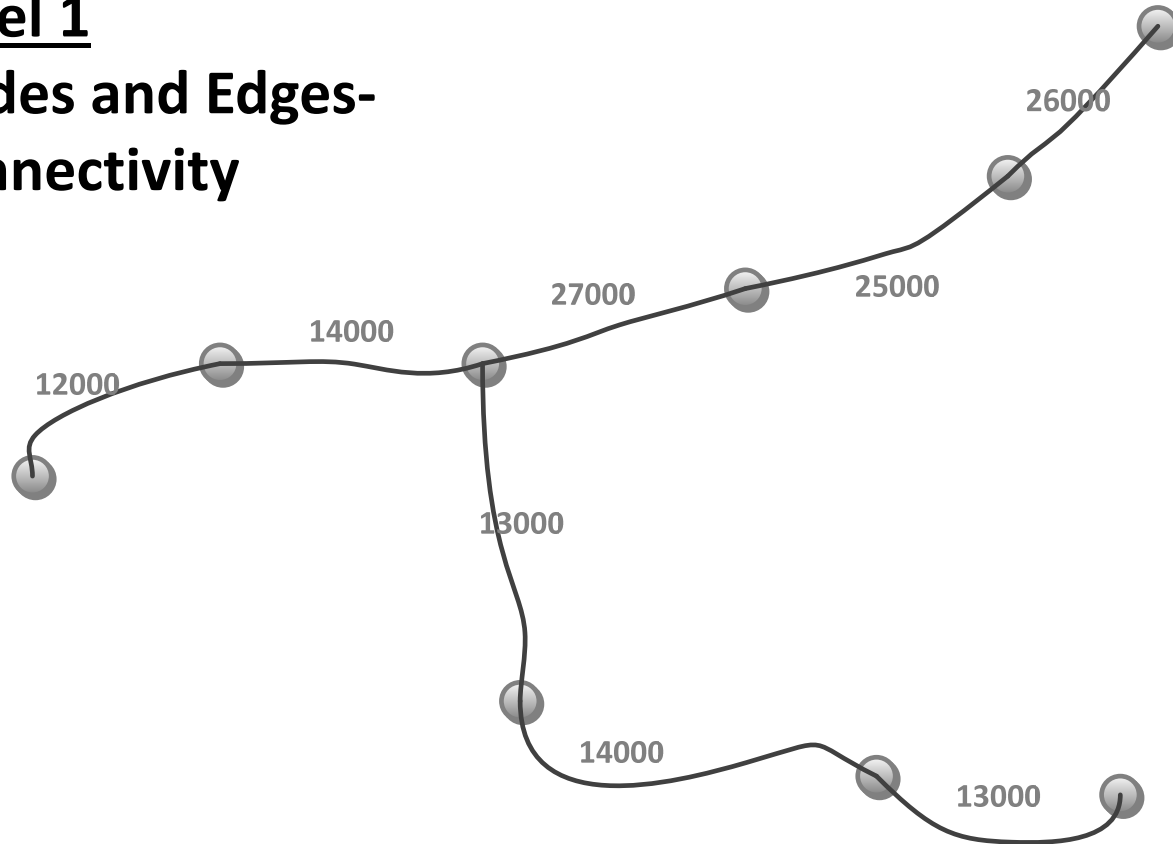
Spaghetti



Levels

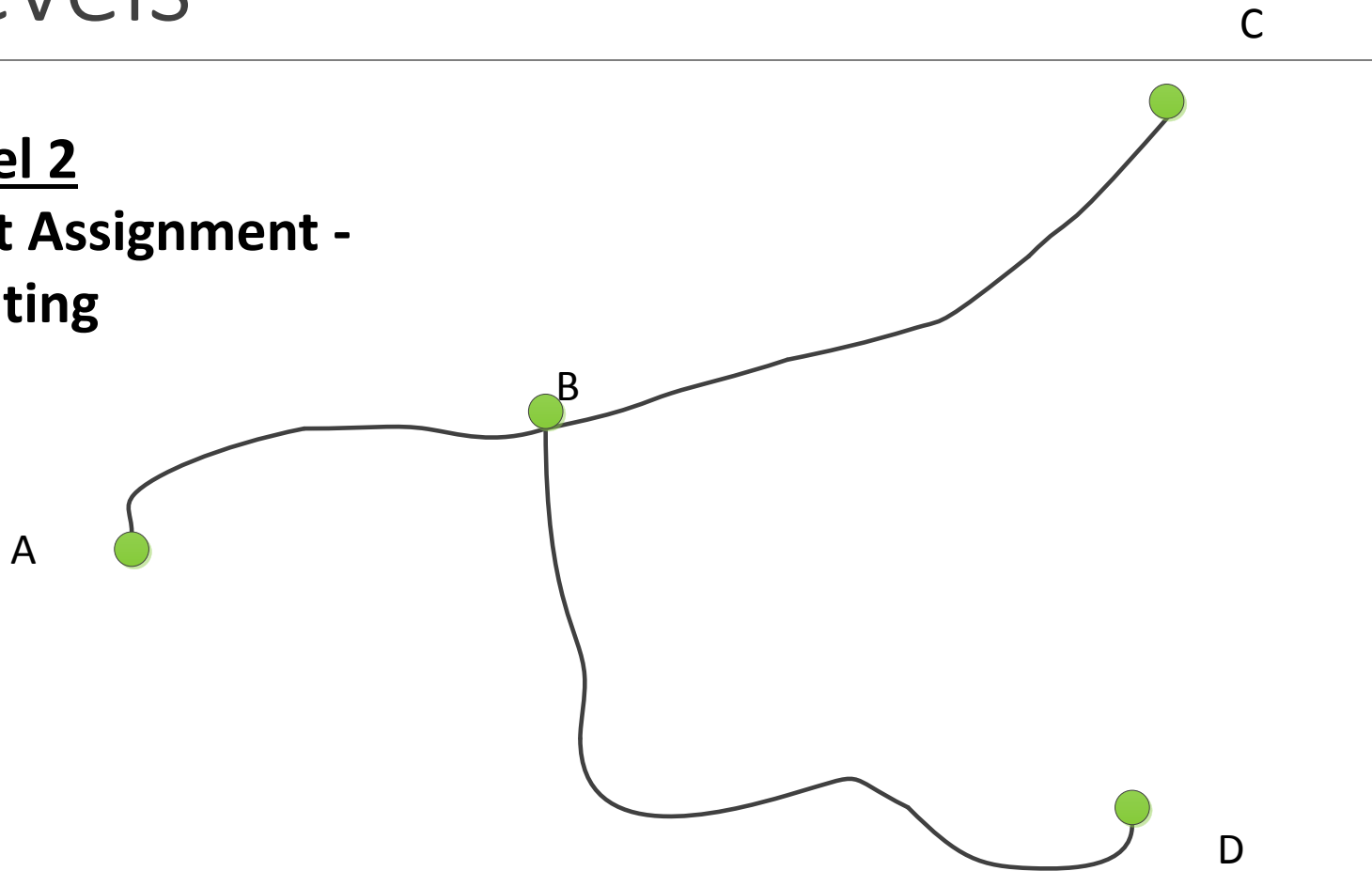
Level 1

Nodes and Edges-Connectivity



Levels

Level 2 Cost Assignment - Routing



USDOT Topology Meeting

What is the application for a network? Is there a specific product?

At what Level of Topology do you need to support the application?

What system needs to support your application?
(NHS, National Truck Network, All Public Roads)



GIO-Steve Lewis

GAO Concerns

Single set of line work for analysis

500k Miles NHS, Trucks, STRAHNET

Addresses

Attributes passed back to states

Motor carrier – HAZMAT Routes

Pipeline

Warning- Duplication of private sector

ARNOLD-NBI Connection

Rail Crossings, Waterways

Multimodal Topology



Operations- Ed Stroko

Consumer of existing products.

- External sources-conflation-Relation to private sector
- Intermodal connectors- freight generators

FAF-

Planning- Mark Sarmiento

NHPN

- Build NHS Maps
- Challenge to maintain

Starting point for consultation

Dynamic requirements- Corridor studies, Large area studies, multi-state. Relation to other state

Environment- Exposure data

Capacity, speed limits, restrictions on use

Dual carriage better

OSM

Z-Data

System changes- NHS STRAHNET, Appalachian Commission etc

Bureau of Transportation Statistics- Rolf Schmidt

Common Linework

Suitable for analysis

Zip code to Zip Code

Alternate routes for road closures

Commodity Flow Survey

Bus & Transit

Privates

Legal International crossings – customs and border control is the authority

Policy/CFO/Infrastructure – Tom Roff, Phil Troutman, David Winter

Standards

- Connectivity at borders
- Travel time- Conflation of Private Sector data

Integration

- FMIS Projects, Bridge, Rail Crossing into a single system



Take Away #3

There is a lot of stuff that USDOT is interested in that an LRS alone is incapable of handling

A National Highway System Announcement

The NHS that is reported in HPMS for 2014 submittal will be the System of Record and will serve as the baseline moving forward.



Recap

Take Away #1 is Linear Referencing is the basis for future highway funding since State DOTs are required to submit HPMS on an event driven system.

Take Away #2 We need to take HPMS Analysis to the next level by introducing a true spatial component.

Take Away #3 There is a lot of stuff that USDOT is interested in that an LRS alone is incapable of handling

Announcement The NHS that is reported in HPMS for 2014 submittal will be the System of Record and will serve as the baseline moving forward.

So Long and Thanks for all the Fish

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