Avoiding Last-minute HPMS QC Before the Deadline

HPMS Data Quality Discovery with Ease and Velocity

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Why LRS QC is Challenging?

LRS data structure is not as complicated
LRS data volume is not as massive
LRS data is not as dynamic

Any Suggestions?

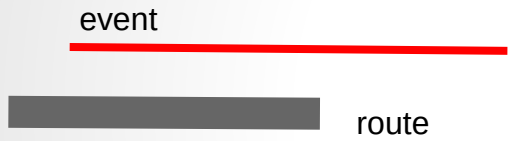
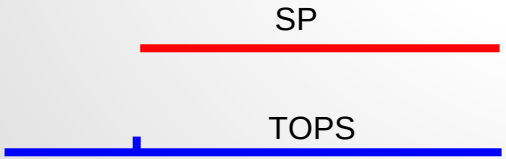
Data silos?

Spatial?

Dependencies?

Complicated rules?

HPMS QC Rules Summary

Rule Category	Illustration	General Description
Route Geometry		See FHWA's Route Check List
Event Topology		Events fall within the route extents to which they belong
		Events from a data item should not overlap
		Sample Panels should be a subset of TOPS

HPMS QC Rules Summary

Category	Sub Category	Description
Business	Format	FHWA's format specifications
	Coverage	All required data items be included
		Events from a data item should cover their required extent
	Domain	Domain restrictions for item values in numeric or text or date fields
	Cross-check	Validate against a typical value range or related data items
	Statistic	Sample adequacy and compliance

SAD - Separation Anxiety Disorder!

SAD is genetic!

- LRS event layer and LRS network
- LRS event layers

Treatment of SAD?

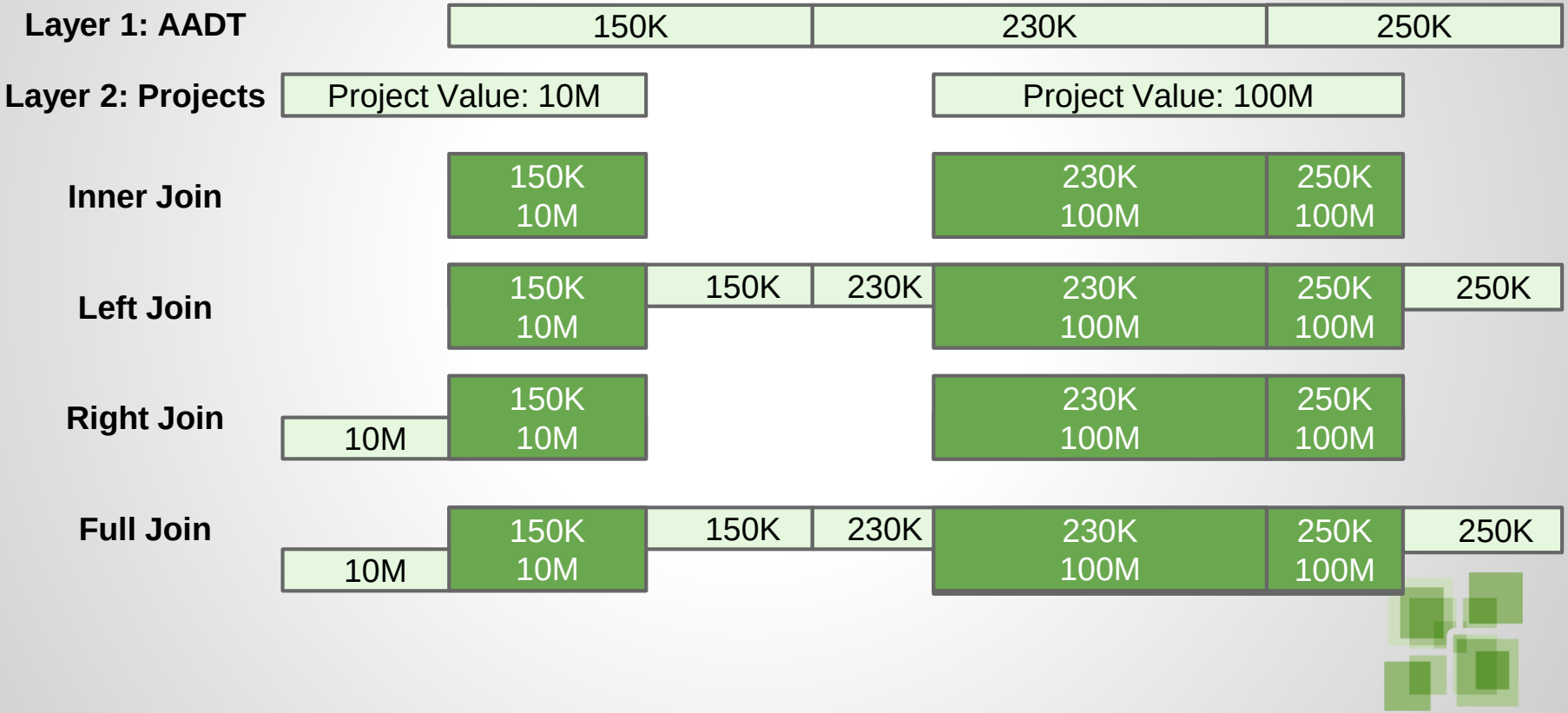
HPMS QC Rules Approaches

Rule Category	Approach	Description
Route Geometry	GIS	See FHWA's Route Check List
Event Topology	Join	Events fall within the route extents to which they belong
	Join	Events from a data item should not overlap
	Join	Sample Panels should be a subset of TOPS

HPMS QC Rules & Approaches

Category	Approach	Description
Business	DB	FHWA's format specifications
	DB	All required data items be included
	Join	Events from a data item should cover the required extent
	DB	Domain restrictions for item values in numeric or text or date fields
	DB	Validate against a typical value range or related data items
	Statistic	Sample adequacy and compliance

LRS Join Types



An LRS Join Engine That

Takes Any number of layers,

Takes Any 1D or 2D event types,

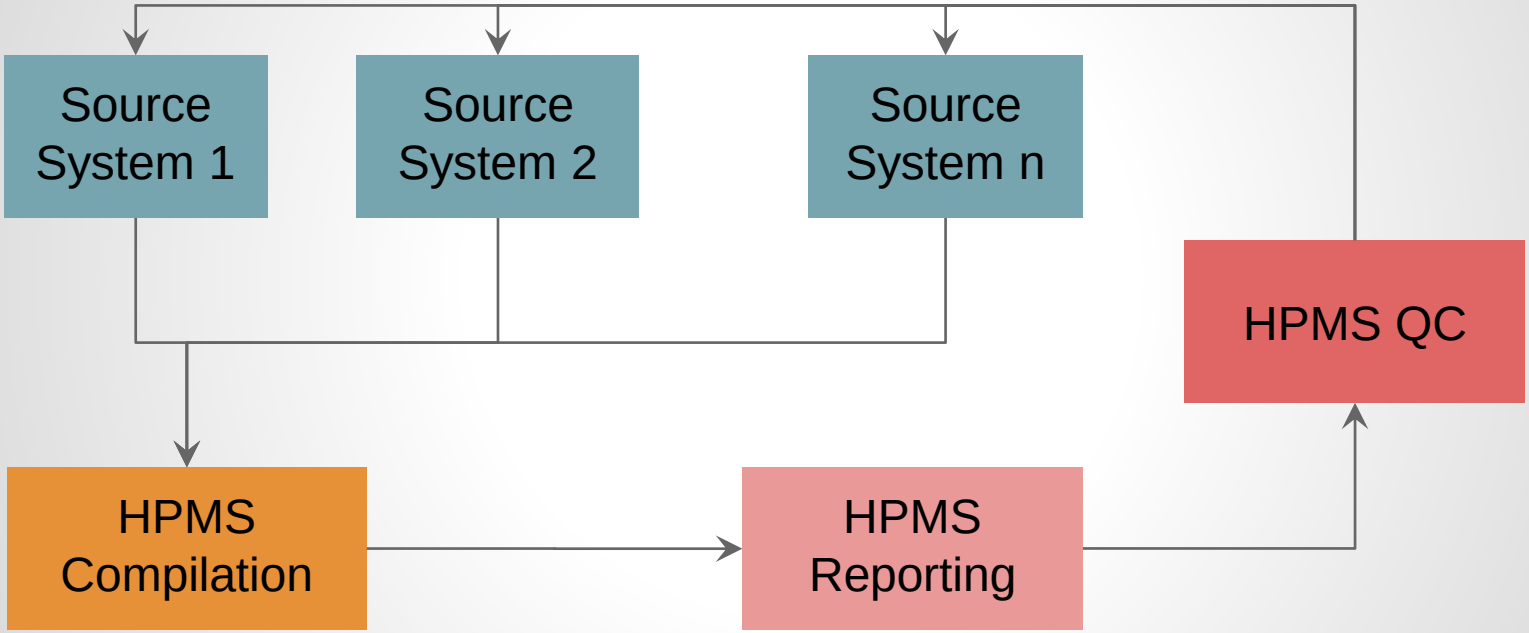
Supports All join types, and

Is suitable for OLTP as well as OLAP

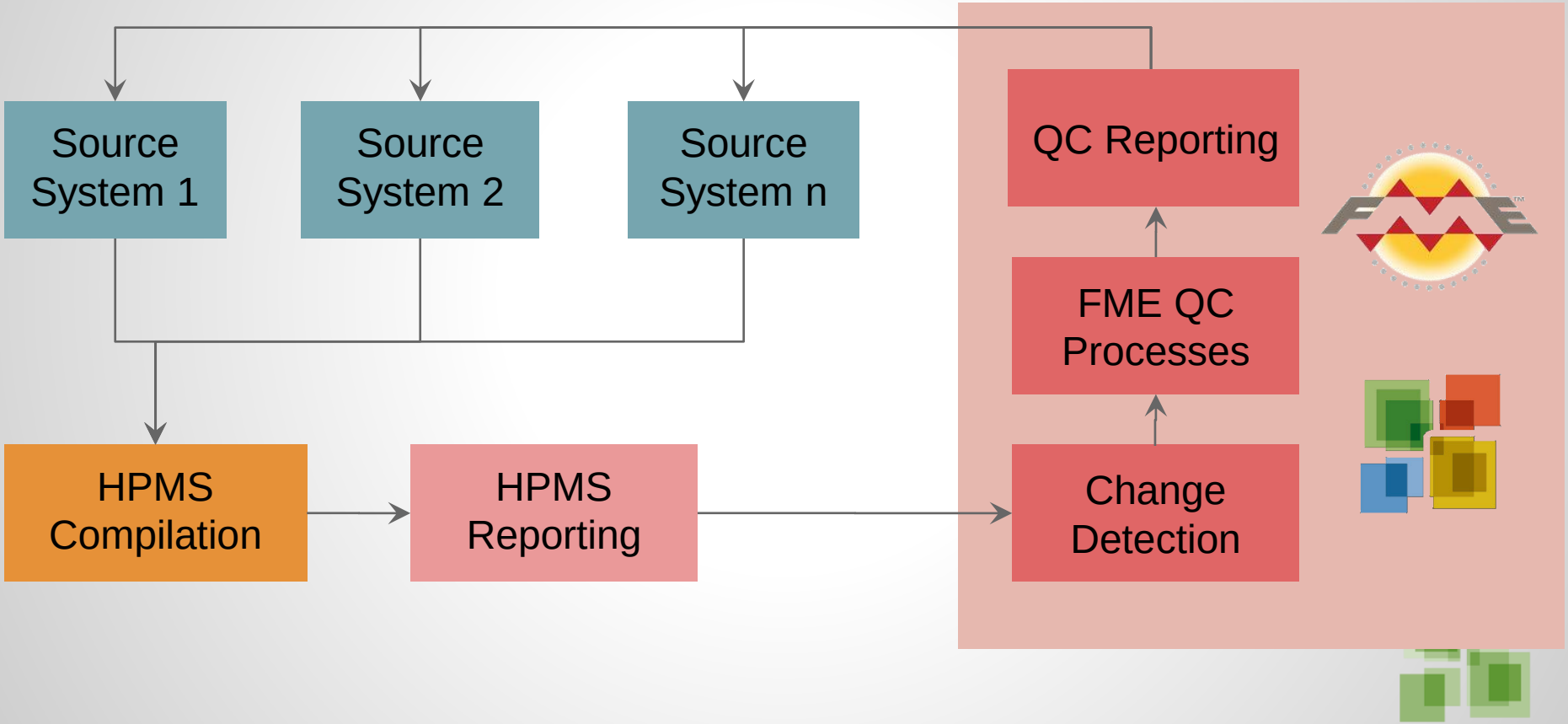
HPMS QC Agility Can Be Achieved...

A sound HPMS process,
Supported by QC tool(s) that is
- Comprehensive,
- Easy-to-use,
- Extendable, &
- Non-proprietary

The Process & the Feedback Loop



The Process & the Feedback Loop



HPMS QC Tool Built on FME

Rule Category	FME Workspace
Route Geometry	HPMS_RouteGeomQCer
Event Topology	HPMS_EventTopoQCer
Business	HPMS_SectionsQCer
Statistics	HPMS_SampleStatQCer

LinearBench

Grid-based Segment Joint Algorithm
Performant
1-D & 2-D LRS
Off-the-shelf
Configurable

Resources

https://gisticinc.com/category/blog/

https://www.youtube.com/user/linearbench

https://gisticinc.com/products

Questions?

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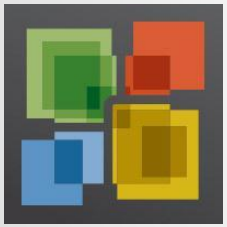

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