The State of Editing and Maintaining GeoSpatial Networks

Agenda

- LRS's position in Transportation
- Lessons learned
- LRS Issues
- The way ahead at Idaho Transportation Department

LRS's Position in Transportation

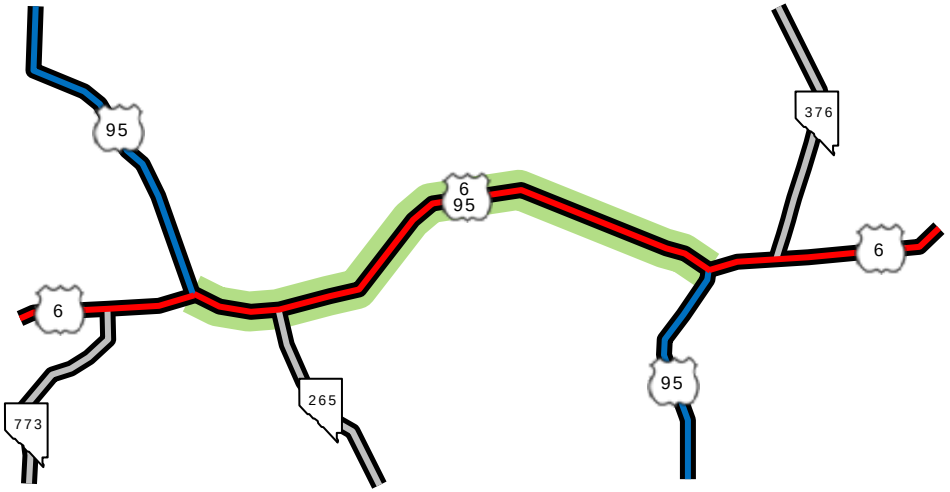
- Importance of LRS
  - Different departments store various data using different methods
  - However, all store road name and measure data
  - LRS is often the only data unifier
- LRS is a foundational application
  - Supports HPMS and other core agency business systems

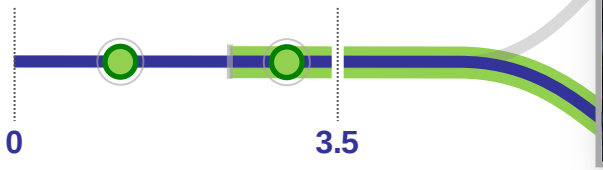
Lessons Learned

- Well supported
  - Need executive support AND
  - Buy-in from stakeholders
- Custom projects
  - Can be quite expensive and time-consuming
- LRS Maintenance
  - Needs to handle data maintenance as well as it does data modeling and analysis
- Complexity
  - Need a tool that handles the tough LRS problems without being too complicated to use

LRS Issues

- Multiple LRMs
- Concurrent Routes
- Event Location Stability
- Temporality
- Lane level support





- Ease of Use

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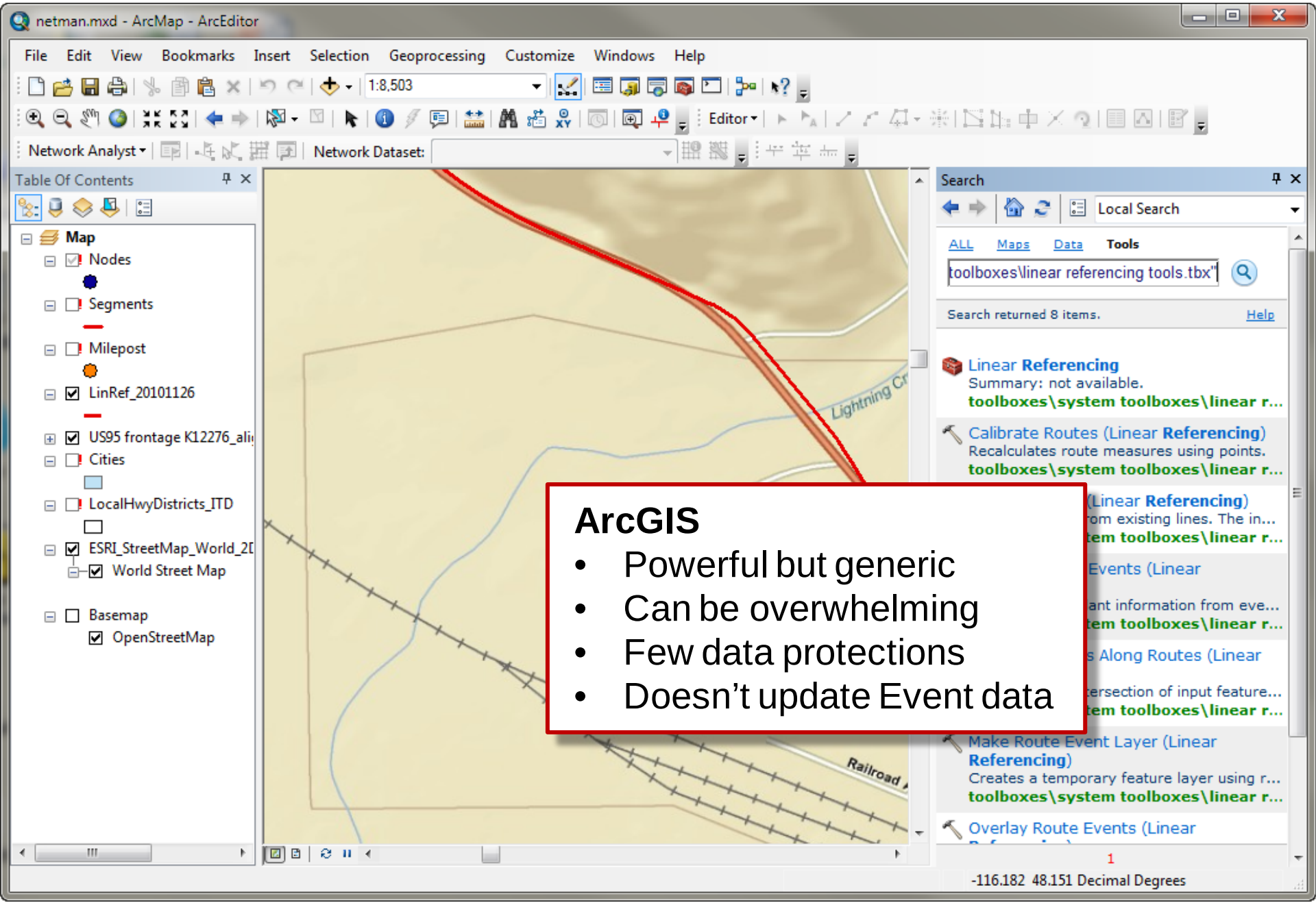
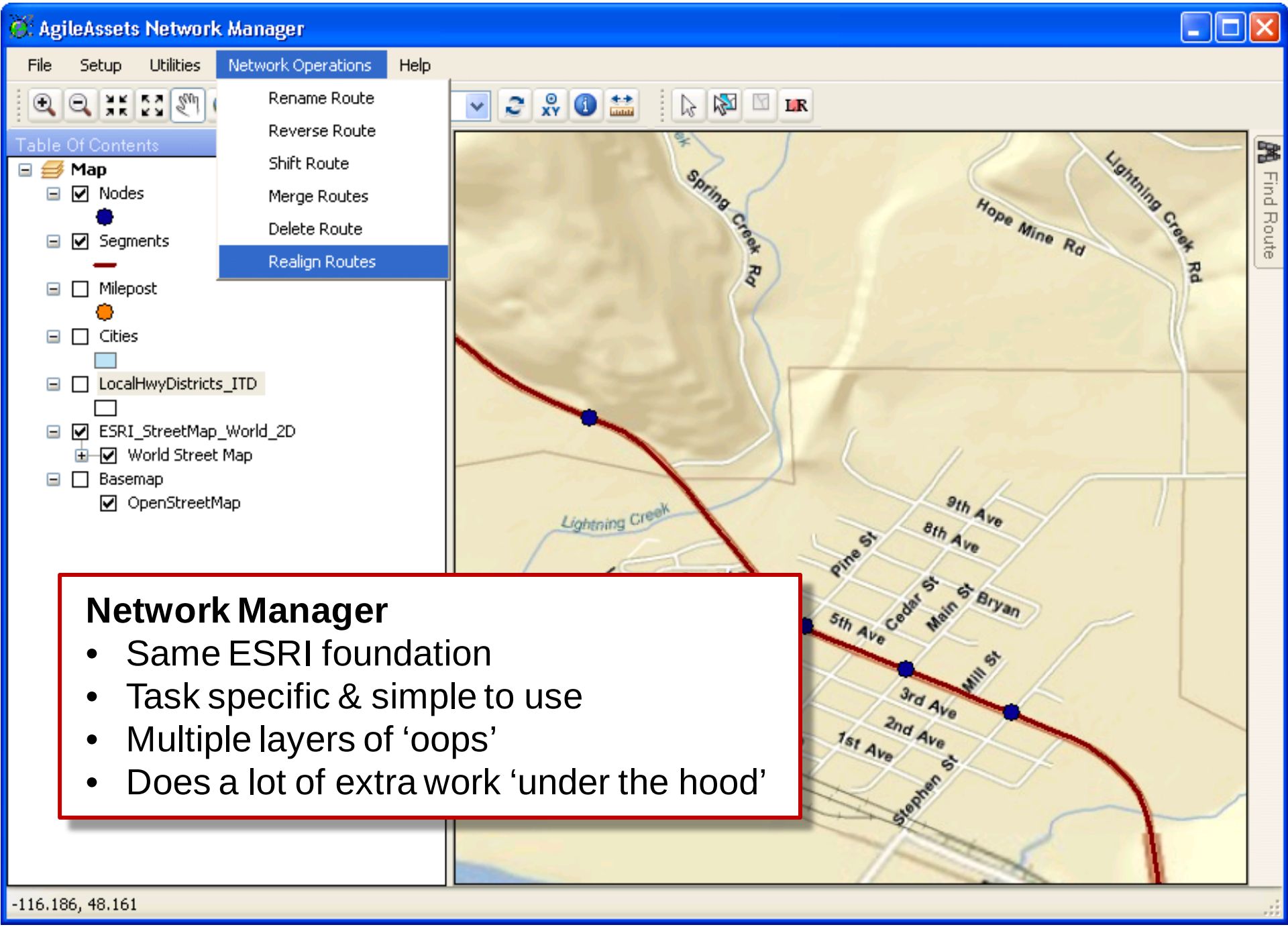
The way ahead at ITD

- Off-the-shelf. Highly configurable.
- Build on strong foundation
  - ESRI and Oracle Spatial
  - ESRI ArcGIS Engine ArcObjects Application
  - Connects to ArcSDE Instance
- Simplicity
  - Simplified, protected interface
  - Speaks transportation



ArcGIS

- Powerful but generic
- Can be overwhelming
- Few data protections
- Doesn't update Event data



Network Manager

- Same ESRI foundation
- Task specific & simple to use
- Multiple layers of ‘oops’
- Does a lot of extra work ‘under the hood’

The way ahead at ITD

- Off-the-shelf. Highly configurable
- Build on strong foundation
  - ESRI and Oracle Spatial
  - ESRI ArcGIS Engine ArcObjects Application
  - Connects to ArcSDE Instance
- Simplicity
  - Simplified, protected interface
  - Speaks transportation
- Reduce errors
  - Multiple levels of ‘oops’
  - Long term transactions (Protected editing environment)
  - Split between creating a version and using

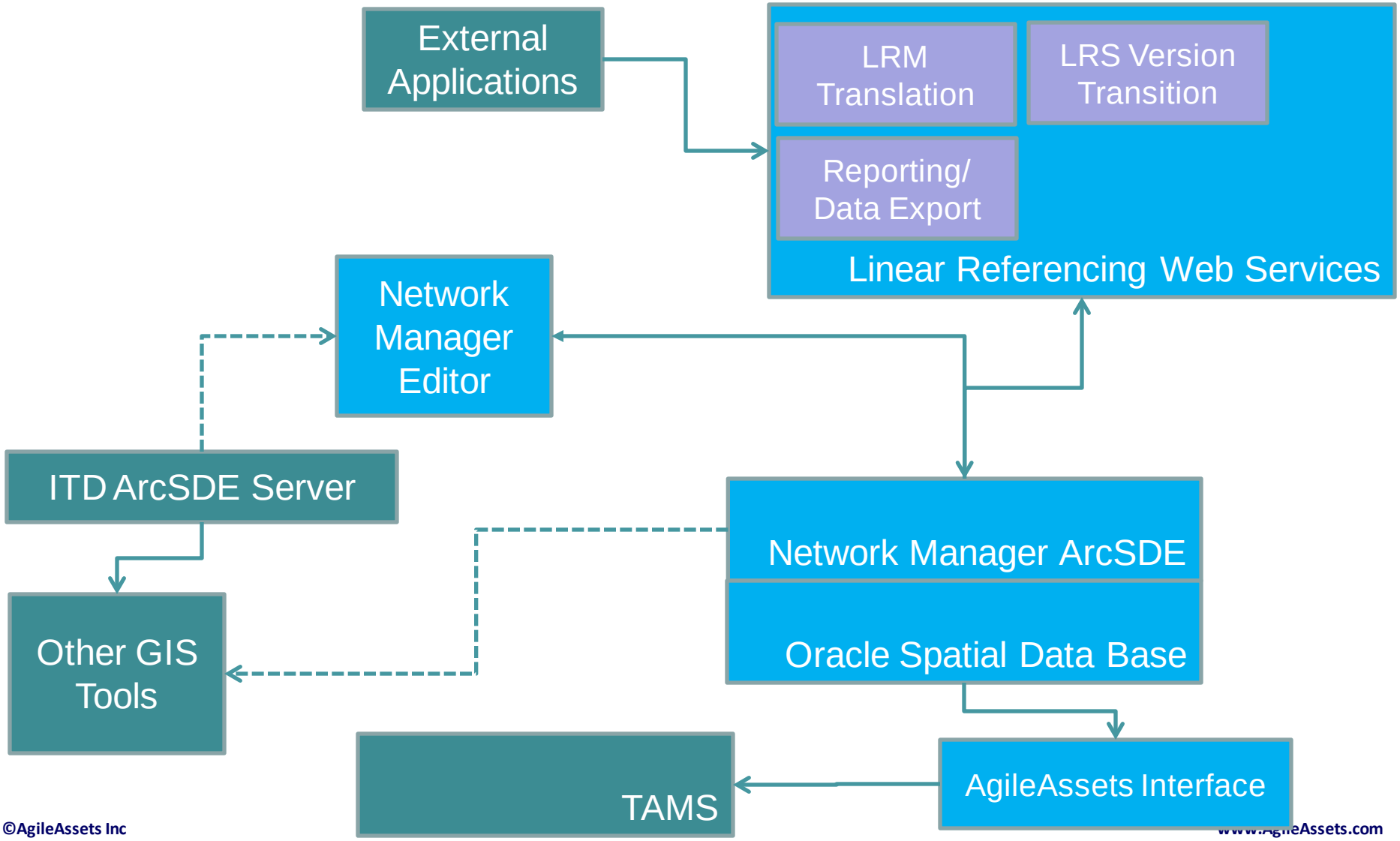
The way ahead at ITD (cont'd)

- Oracle Spatial format
- Provides core linear network data
  - Linear Network Attributes
    - Nodes – defined points
    - Links (Segments) defined paths between points
    - LRM Data – mileage, mileposts node labels and landmarks etc.
    - Editing records
    - LRS/LRM Versions
- Commit and rollback functionality
- Temporality

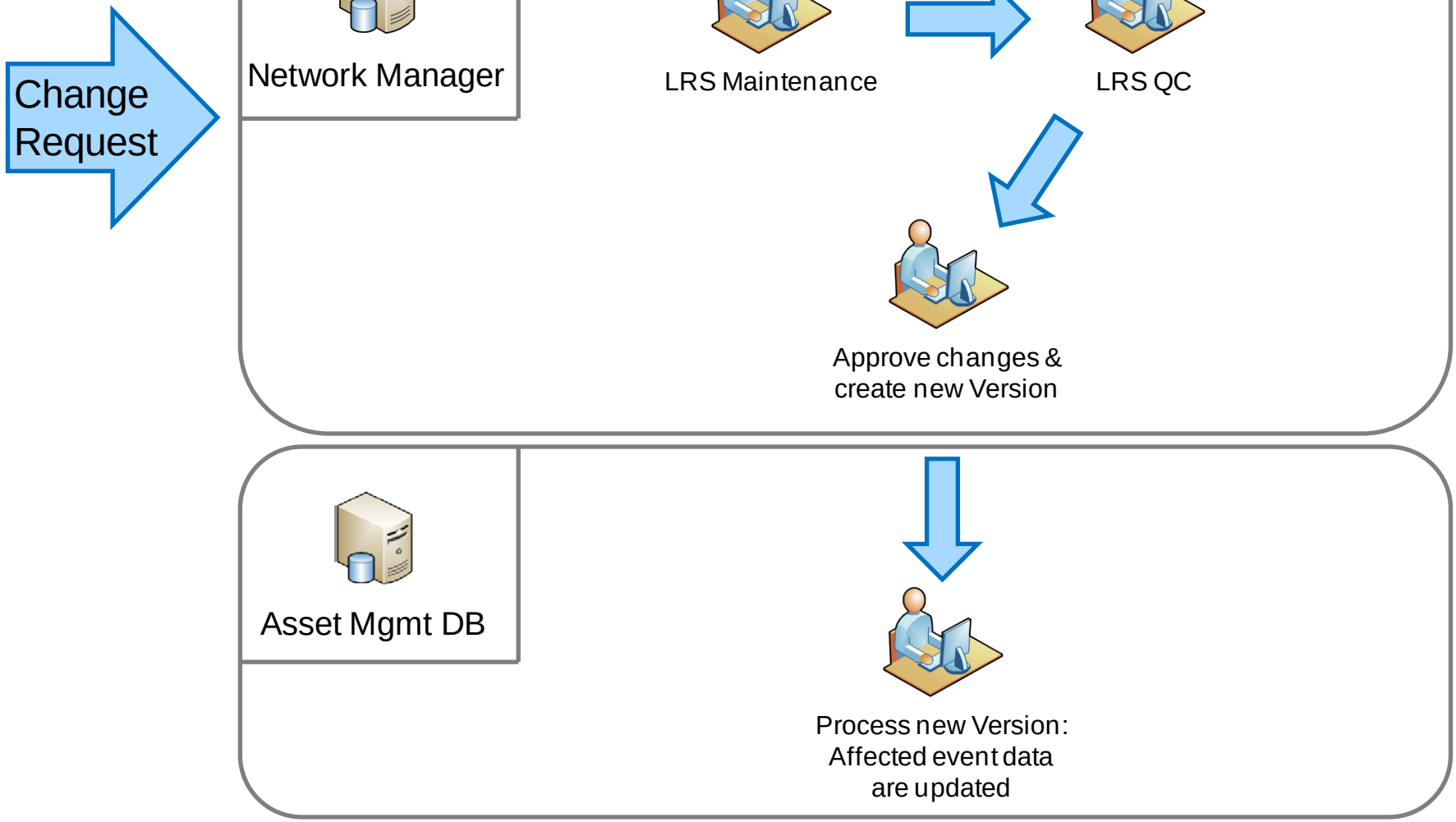
The way ahead at ITD (cont'd)

- Key services
  - LRM translation (translate between 2 different LRM's within a single LRS version)
    - Single translation
    - Multiple (batch) translation
  - LRS Data Provision/Reporting
    - Purpose to provide usable LRS data as exportable files

The way ahead at ITD (cont'd)



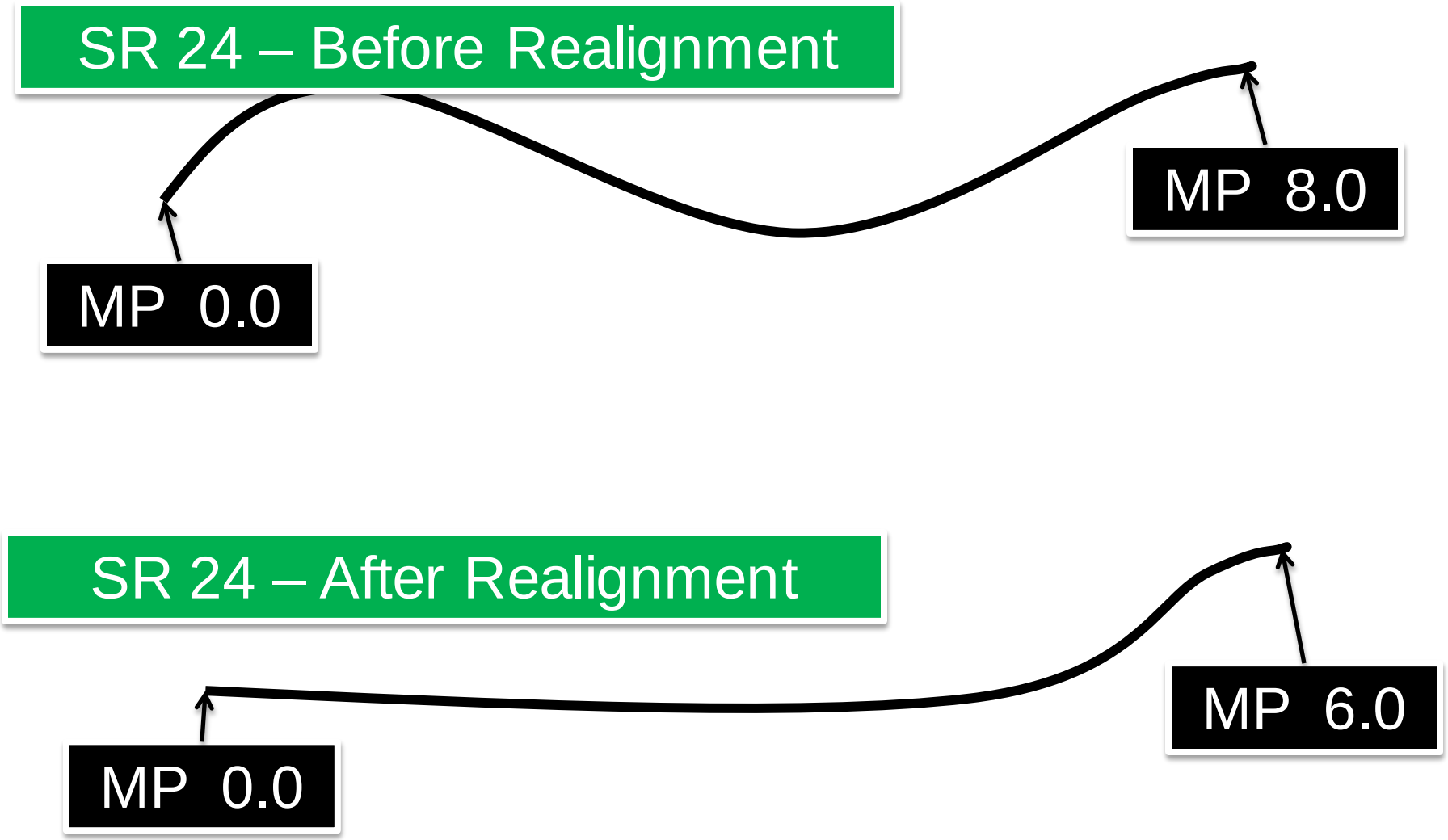
LRS Maintenance



The way ahead at ITD (cont'd)

- Event data location stability
  - Handles the tough cases
  - Both internal and external

Event Data Location Stability



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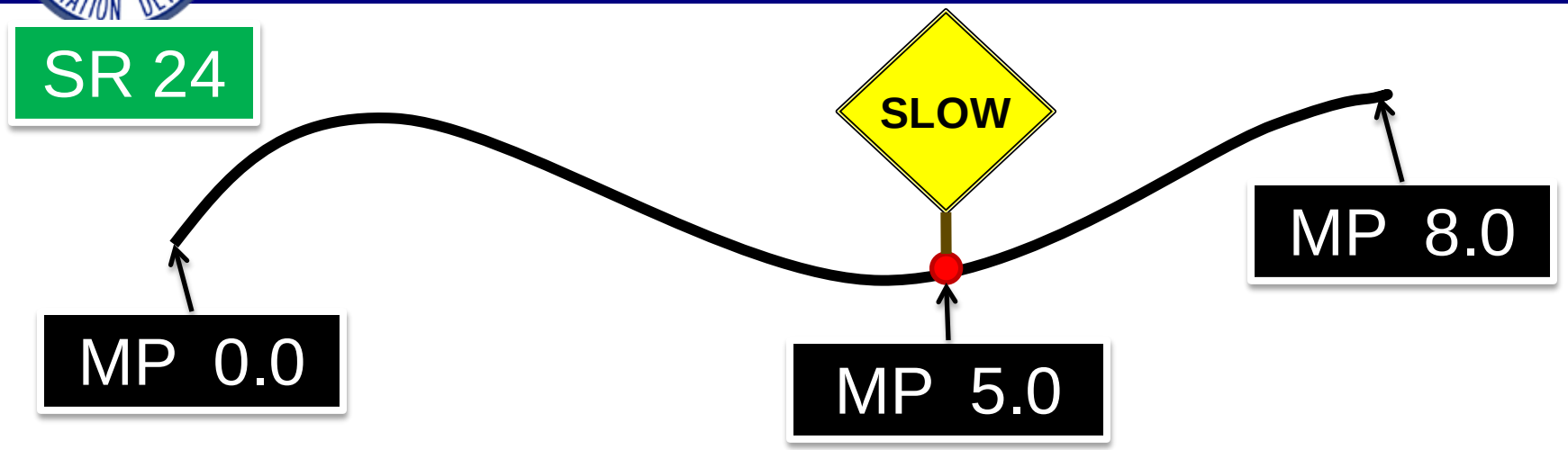

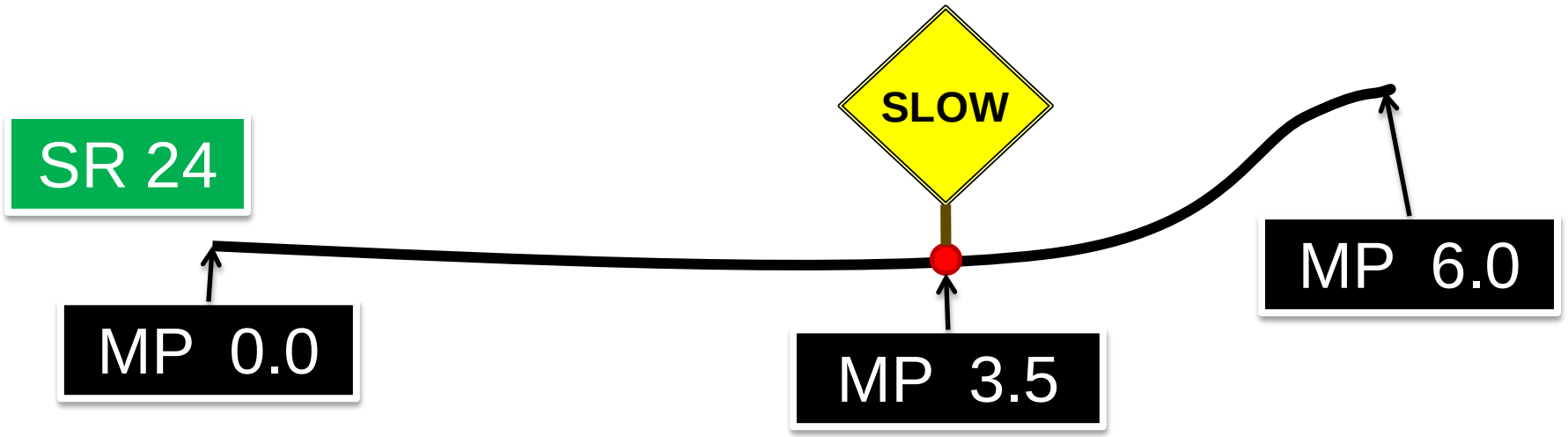

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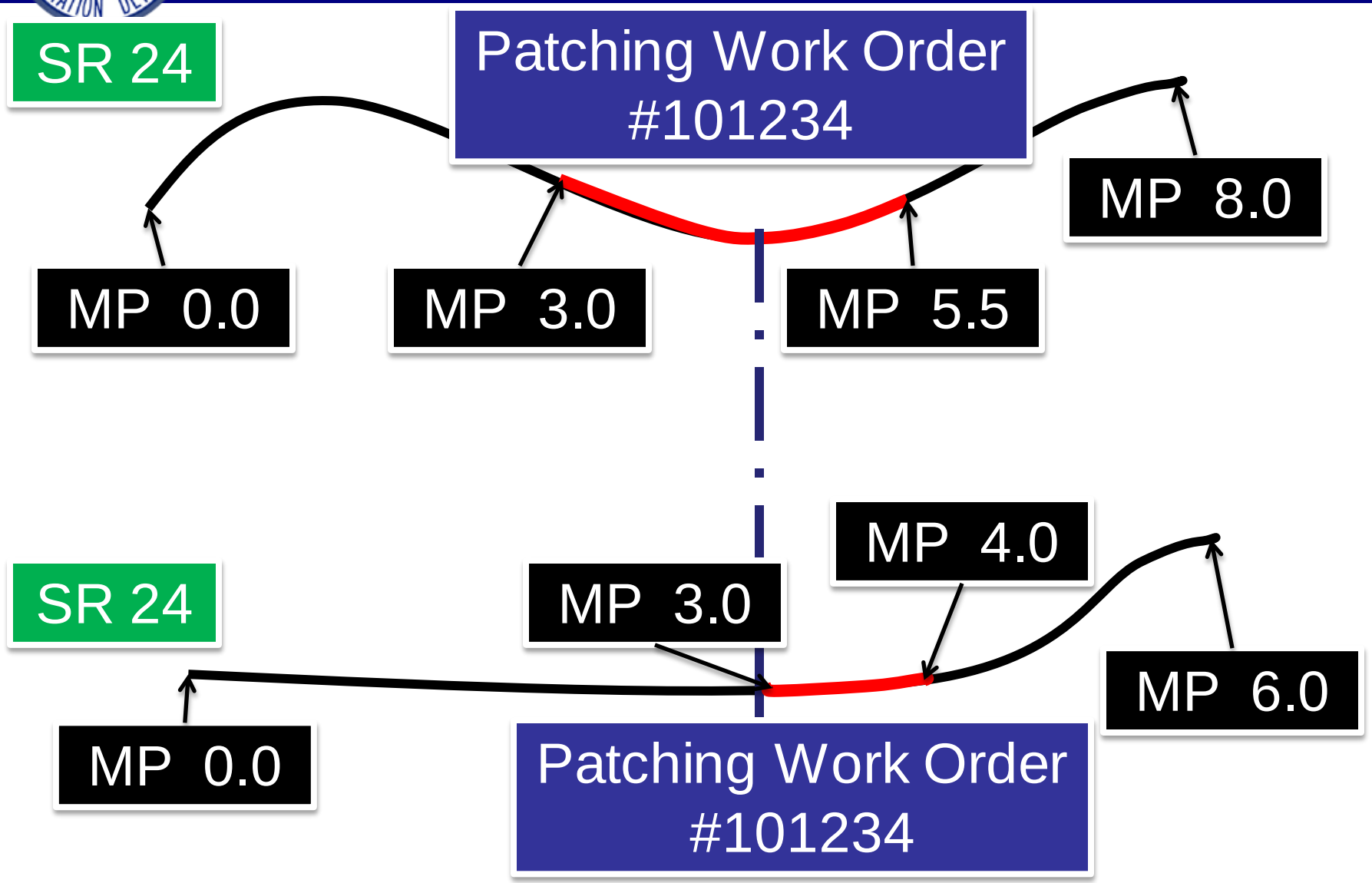

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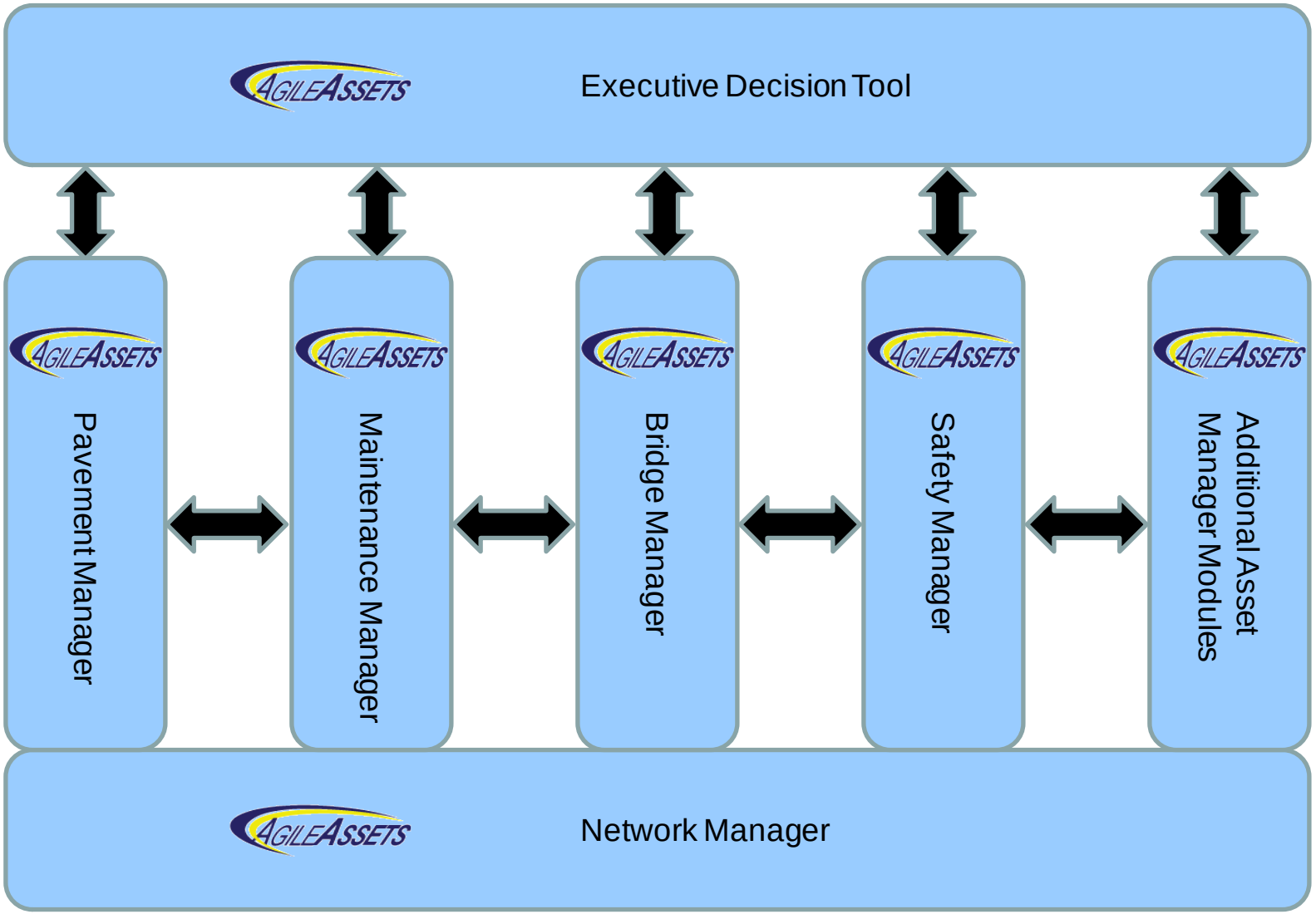

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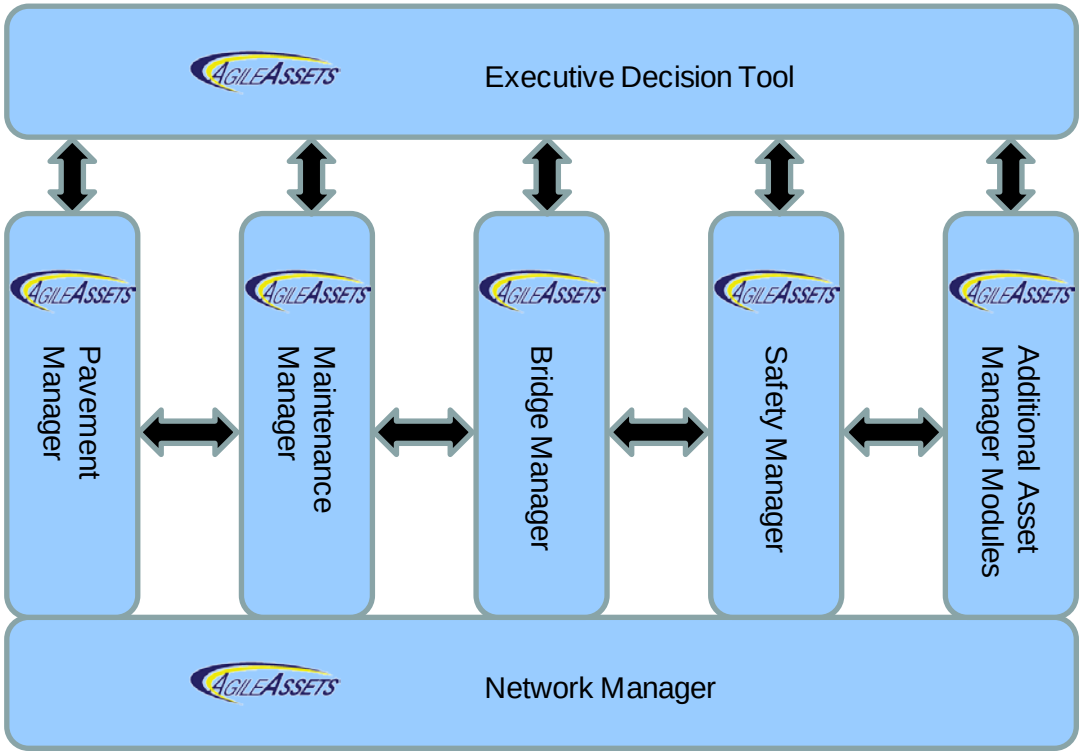

Exported LRM routes for use by External Systems

Version & LRM conversion for External systems

The way ahead at ITD (cont'd)

- Event data location stability
  - Both internal and external
  - Handles the tough cases
- Handle the tough problems
  - Concurrent routes, multiple LRMs, temporality, lane-level events

QUESTIONS & DISCUSSION

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