

Introducing TIDES

Transit ITS Data Exchange Specification

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ITS = Revolution in Transit Data

- Archived AVL/APC/AFC data: Every Day, Every Trip, Every Stop = Millions of rows of data!
- Raw Data: Arrival and departure times, boardings and alightings, fare transactions
- Calculated values: Adherence (on-time performance), dwell, running time, speed, headway, load, journey origin/destination
- Aggregated over multiple days of observation
- Summarized at the trip, route, time period levels

Using Transit ITS Data

- Archived transit ITS data is an extremely valuable resource for transit service planning and management
- There are significant challenges in making effective use of archived ITS data
 - Access to data
 - Data matching and data quality
 - Data integration and cross validation
 - Large data sets

Using Transit ITS Data

- Many agencies are addressing the same challenges, but it is difficult to share work
- Not all agencies have staff capacity to effectively manage and manipulate data
- Private sector and research institutions are interested in helping, but it is difficult to leverage opportunities

A Solution

- A standard approach to managing and accessing archived Transit ITS data that:
 - Can be connected to data from existing systems
 - Is flexible to meet differing needs
 - Will be continually improved, and shared across the industry
 - Facilitates further exchange of reports, tools, and analytical techniques

TIDES

Transit ITS Data Exchange Specification

- To date: informal collaboration of staff from transit agencies, academic/research institutions and private sector
- Define the challenges, scope out a solution, collaborate on design, promote implementation
- Committed to open source, shared solutions

TIDES - Databases

- Base data is existing, local data sources
- Integrated Database and Aggregated Database
 - Can be existing agency data sources
 - **OR** Can be based on reference structure
 - Can be local or hosted externally

TIDES – Two Types of APIs

- Data API – SQL query transfers data in defined table format
- Web API – Web service call transfers data in JSON or XML format
- Need to balance desire for standardization with need for efficiency in working with very large data sets

TIDES - Processors

- Stand alone applications that interact through defined Data APIs
- Ideally open source, continual improvement
- Can be implemented locally or via Internet (e.g., software-as-a-service model)

TIDES – Next Steps

- Define Data and Web APIs
- Define reference database structures for Integrated and Aggregated data sources
- Define functionality of processors
- Implement APIs against source data systems
- Implement APIs against reference databases
- Program processors

TIDES Contact

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