Quality Control
Lessons Learned from Deployment and Evaluation of GTFS-realtime Feeds

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Background

- Real-time transit info has many benefits, including shorter perceived and actual wait times, lower learning curve for new riders, increased ridership, and increased feeling of safety at night, and better perception of the agency.
- Nearly ¾ of users in one study said they relied solely on real-time info instead of schedule info.
- However, accuracy is important – 9% of surveyed riders said they took the bus less often due to real-time errors.

Open transit data

- General Transit Feed Specification (GTFS) has become de facto format for open schedule data, shared by over 1,500 agencies worldwide.
- GTFS-realtime feeds, which power mobile transit apps, are becoming more widely available, with over 50 agencies sharing data.

- GTFS-realtime v1.0 has lacked well-defined requirements and validation tools.
- This results in confusion and disagreements between transit agencies, Automatic Vehicle Location (AVL) vendors, and application developers as to what data should actually appear in a GTFS-realtime feed.
- Increases the time, effort, and cost to deploy a new GTFS-realtime feed.
- Errors in real-time info affect riders and operators.

GTFS-realtime example

- 3 feed types – TripUpdates contain delay information, VehiclePositions show where vehicle is, and Alerts are human-readable impacts on service.

GTFS-realtime example

- Missing fields lead to poor quality data.

GTFS-realtime v1.0 problems

- Defines new transit-specific field requirements:
  - Required
  - Optional
  - Conditionally required (see description field for when this field is required).

GTFS-realtime v1.0 examples

- Developed using experience from OneBusAway mobile app deployment at new transit agencies using GTFS-realtime.
- Alpha version hosted at http://transittools.forest.usf.edu

GTFS-realtime v2.0

- Created open-source tool to batch validate 78 out of 130 GTFS-realtime feeds catalogued on TransitFeeds.com.
- 69% (54) feeds had errors, and 74% (58) had warnings.
- Recommend that all agencies produce GTFS-realtime v2.0 feeds, validate feeds prior to accepting feed from vendor.

Evaluation of industry feeds

- Shows summary of all errors/warnings
- Shows message with all error occurrences

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References


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