SIRI data summary

The SIRI-VR data that we are currently receiving essentially consists of a series of `<VehicleActivity>` blocks like this:

```
<VehicleActivity>
  <RecordedAtTime>2017-09-03T23:59:51+01:00</RecordedAtTime>
  <ValidUntilTime>2017-09-03T23:59:51+01:00</ValidUntilTime>
  <VehicleMonitoringRef>SCCM-54307</VehicleMonitoringRef>
  <MonitoredVehicleJourney>
    <LineRef>X5</LineRef>
    <DirectionRef>OUTBOUND</DirectionRef>
    <FramedVehicleJourneyRef>
      <DataFrameRef>1</DataFrameRef>
      <DatedVehicleJourneyRef>467</DatedVehicleJourneyRef>
    </FramedVehicleJourneyRef>
    <PublishedLineName>X5</PublishedLineName>
    <OperatorRef>SCCM</OperatorRef>
    <VehicleFeatureRef>lowFloor</VehicleFeatureRef>
    <OriginRef>0500CCITY476</OriginRef>
    <OriginName>Parkside Bay 16</OriginName>
    <DestinationRef>0500HSTNS064</DestinationRef>
    <DestinationName>Market Sq Stop D</DestinationName>
    <OriginAimedDepartureTime>2017-09-03T23:30:00+01:00</OriginAimedDepartureTime>
    <Monitored>true</Monitored>
    <InPanic>0</InPanic>
    <VehicleLocation>
      <Longitude>-0.2354520</Longitude>
      <Latitude>52.2262192</Latitude>
    </VehicleLocation>
    <Bearing>288</Bearing>
    <Delay>PT35S</Delay>
    <VehicleRef>SCCM-54307</VehicleRef>
  </MonitoredVehicleJourney>
</VehicleActivity>
```

From a review of actual data on three weekdays 2017-04-26, 2017-08-30 and 2017-09-04 the following appear to be true:

RecordedAtTime

A plausible timestamp for the event. Generally a few seconds in the past relative to time of receipt, very occasionally up to 75 minutes in the past or up to 60 seconds in the future.

ValidUntilTime

Always the same as RecordedAtTime.

VehicleMonitoringRef

Looks plausibly to be a vehicle identifier qualified by it's operator. Always the same as VehicleRef. Appears to match a field on a Whippet ticket issued on the Universal.

LineRef

Looks to be an identifier for the *Line* (e.g. Timetable) to which this journey relates. Probably needs to be qua;lified by OperatorRef for uniqueness. Always the same as PublishedLineName

DirectionRef

Always 'INBOUND" or 'OUTBOUND'.

DataFrameRef

Always '1'

DatedVehicleJourneyRef

Integers from 1 to about 10,000, occasionally appearing with one or more leading zeros -- unclear if they should be interpreted as numbers or strings.

These seem to indicate vehicle journey in some sense, and increase throughout the day resetting to 1 at midnight. They are however not unique even in one day, empirically with low numbers occurring more often than higher ones.

For any one day, most combinations of DatedVehicleJourneyRef and VehicleMonitoringRef have a 1:1 relationship with the combination of OriginRef and OriginAimedDepartureTime (which we understand to represent a 'Journey'), but even this breaks down with ~100 examples per day of DatedVehicleJourneyRef/VehicleMonitoringRef corresponding to 2, 3 or 4 separate instances of OriginRef/OriginAimedDepartureTime (and vice versa).

PublishedLineName

See LineRef

OperatorRef

One of

ATS CBLE FECS GP SCCM SCNH WP ZSIN

VehicleFeatureRef

Present in only 16% of records. If present, only ever 'lowFloor'.

OriginRef, OriginName, DestinationRef, DestinationName

One of about 420 Naptan stops

OriginAimedDepartureTime

Monitored

Always 'true'

InPanic

Always '0'

Longitude

-0.755235 to 0.63038

Latitude

52.0085564 to 52.8346291

Bearing

0.0 to 354.0

Delay

A time delta in ISO format. Positive and negative.

VehicleRef

See VehicleMonitoringRef