GPS Records Standardization
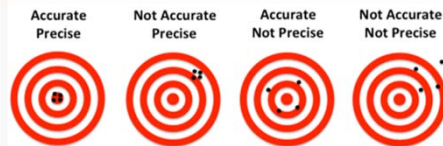

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Current Electronic Record Keeping Requirements

		IFTA	IRP
1.	Original GPS Location	200.005	1010(b)(i)
2.	Beginning Odometer	200.020	1010(b)(iv)
3.	Ending Odometer	200.020	1010(b)(iv)
4.	Total Distance	200.035	1010(b)(vii)
5.	VIN	200.045	1010(b)(ix)
6.	Date of Ping	200.010	1010(b)(ii)
7.	Time of Ping	200.010	1010(b)(ii)
8.	Calculated Distance Between Pings	200.025	1010(b)(v)
9.	Route	200.030	1010(b)(vi)
10.	Location of each system reading	200.015	1010(b)(iii)
11.	Total Distance by Jurisdiction	200.040	1010(b)(viii)

What Do They Mean?

POINT #1. lets differentiate *Precision* from *Accuracy*

Accurate Precise | Not Accurate Precise | Accurate Not Precise | Not Accurate Not Precise

As it is clear from the picture we can talk about *Accuracy* of a measurement (e.g. GPS measurement) if we already know the actual value (exact position). Then we can say how accurate a measurement is. On the other hand if you have some measurements and don't know the actual value you can just talk about the precision of the measurement.

What is…
- a Location?
- a Sufficient Interval?
- a Trip?
- Distance?
- a Reasonable Error Tolerance?

Better Definitions Will Help

def·i·ni·tion
\dĕ-fə′-nĭ-shən\

meaning of a word;
can be subjective

- Help a **carrier** make better decisions when selecting a product
- Help a **vendor** understand and deliver the required data
- Help in an **audit** by providing the data needed in a format that can be easily worked

Definition of Terms

Event – AKA Ping

- An Event (aka Ping) is a location establishing event of the vehicle from an onboard global positioning device. An event (or ping) must include date, time, and location at each significant event **_OR_** at sufficient intervals.

- We said significant event **_OR_** sufficient intervals to provide the taxpayer and auditor with flexibility.
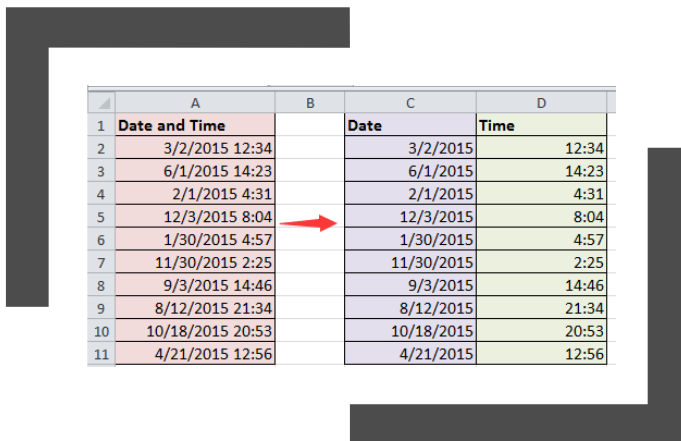
Sufficient Interval and Significant Event

Sufficient Interval

- At least every 15 Min
- Should be enough to catch travel in all jurisdictions but could be expensive for the carrier.

Significant Event

- Triggered by
  - Engine on
  - Engine off
  - Jurisdiction line crossing
- Should also catch distance in every jurisdiction but would require a device with geo fencing.

Date and Time of Events (aka Pings)

	A	B	C	D
1	**Date and Time**		**Date**	**Time**
2	3/2/2015 12:34		3/2/2015	12:34
3	6/1/2015 14:23		6/1/2015	14:23
4	2/1/2015 4:31		2/1/2015	4:31
5	12/3/2015 8:04		12/3/2015	8:04
6	1/30/2015 4:57		1/30/2015	4:57
7	11/30/2015 2:25		11/30/2015	2:25
8	9/3/2015 14:46		9/3/2015	14:46
9	8/12/2015 21:34		8/12/2015	21:34
10	10/18/2015 20:53		10/18/2015	20:53
11	4/21/2015 12:56		4/21/2015	12:56

Time of Event

Carrier's base jurisdiction time in the format of:

HH:MM:am/pm

Date of Event

Carrier's base jurisdiction in the format of:

MM/DD/YYYY

Location

- Location is the latitude, longitude of the vehicle collected from a vehicle event, to a minimum of 6 decimal places.

- It is not:
  - An address
  - A City

Latitude	Longitude
39.946885	-75.099837
39.946885	-75.099837
39.947299	-75.100522
39.947146	-75.100893
39.937735	-75.112169
39.877884	-75.102858
39.853011	-75.169558
39.821609	-75.24147
39.834178	-75.247343
39.83423	-75.247721
39.821707	-75.240354
39.821817	-75.240208
39.835794	-75.203799
39.858731	-75.126153
39.873287	-75.093781
39.872044	-75.063641
40.070076	-74.846533
40.086084	-74.831148

Route

- The Road name or designation

Question for Auditors:

- Is the route still critical to the audit process if you have GPS data?

Odometers

Beginning Odometer
- The first movement odometer at the beginning of the requested reporting time period in the base jurisdiction's time zone.

Ending Odometer
- The last movement odometer at the ending of the requested reporting period in the base jurisdiction's time zone.

Distance

- Odometer readings should be collected with every event. That way the odometer readings can be used to calculate the distance traveled in each jurisdiction.

- This is less expensive to the taxpayer and to the jurisdiction than using the available technologies to calculate distance from the GPS Pings directly.

- How to differentiate between Miles and Kilometers in a standard file format?

GPS Records Standardization

FEEDBACK PLEASE!