Appendix C-1
Canada Data Quality Control Tables

Data Cleaning

This section documents further data cleaning on *AP+®* acquired data with recorded speeds of at least 30 mph. Data from Canada Study Phase 1 1 is used to illustrate the processes involved in data quality control.

Excluded drivers

The following lists the identification numbers of 7 Canadian drivers whose data were excluded from the cleaned analysis sample used for technology assessment because of insufficient data under at least one of the two experimental conditions (FEEDBACK and NO FEEDBACK).

- Driver 3 (no ***AP+®* data** under the NO FEEDBACK condition—presumed lost due to technical problems in recording data on truck)
- Driver 9 (no ***AP+®*** data under the FEEDBACK condition—presumed lost due to technical problems in recording data on truck)
- Driver 14 (no data under FEEDBACK condition—dropped out of study for a personal matter; re-enrolled later as Driver 28.)
- Driver 16 (insufficient data due to noncompliance to protocol)
- Driver 20 (no ***AP+®*** data under the FEEDBACK condition—presumed lost due to technical problems in recording data on truck)
- Driver 24 (too little ***AP+®*** data to analyze—presumed lost due to technical problems in recording data on truck)
- Driver 27 (too little ***AP+®*** data to analyze—presumed lost due to technical problems in recording data on truck)
- Driver 28 (no ***AP+®*** data under the NO FEEDBACK condition—presumed lost due to technical problems in recording data on truck)

This resulted in analyzable ***AP+®*** black box data for n = 20 Canadian drivers (i.e., 71% complete data acquisition rate relative to the n = 28 drivers empanelled). These were used in technology assessment analyses and hypothesis testing. For data acquisition procedures other than AP+, data on more drivers was often available. For example, completed post-experimental debriefing surveys (i.e., Human Factors Questionnaire, see Appendix F) were

obtained on all Canadian drivers who completed both segments of the study, regardless of whether electronic data from the ***AP+®*** black box were available. Consequently, the sample sizes for different dependent variables within and between measurement systems can vary considerably as to the number of drivers on which data are available.

Decisions made by the research team while meeting on October 11, 2002

During a research team meeting at ATRI in Alexandria, VA in the fall of 2002, the Biostatistics-Analysis Core (directed by G. Maislin) distributed documentation of additional problematic. These were discussed in depth and strategic data handling decisions were made as described below.

Records with durations greater than 30 seconds

The ***AP+®*** device stored data electronically in 1 second or longer bins. Bins longer than 1 second occurred when there were no changes in parameters being stored by the ***AP+®***. In the "no records excluded" Canadian study phase sample, more than 80% of ***AP+®*** records (82% from the NO FEEDBACK condition and 81% from the FEEDBACK condition) summarized truck and driver status over 1 second. Approximately 12% summarized truck and driver status for 2 seconds. The remaining records (approximately 6%) summarized truck and driver status for 3 or more seconds. The distributions of record duration categories by driver and feedback condition from the Canada Study Phase 1 data are summarized in **Data Quality Table 2 (Appendix C-1)**. **Data Quality Table 3** (Appendix C-1) repeats this summary for the sample defined as "at least 30 mph" (n = 20 Canadian drivers used for data analyses on effects of FMT feedback). Further investigation identified extraordinarily long duration records that appeared to result from the ***AP+®*** clock registering elapsed time while the truck was not in use. Therefore, when attention was restricted to records in which speed was at least 30 mph, these records were excluded with some few exceptions. These exceptions were investigated for data validity. **Data Quality Table 4** (Appendix C-1) for the Canada Study Phase 1 compares the total duration of records for each driver under both conditions for the "no excluded records" samples and for the sample restricted to records with speeds of at least 30 mph. The main difference in total durations of records is exclusion of records in which the truck was standing still while other records were excluded because the truck was traveling at less than 30 mph.

All ***AP+*** records in the ≥ 30 mph sample with durations longer than 20 seconds were examined. A decision was made to exclude records with durations greater than 30 seconds, because it was deemed unlikely that none of the multiple AP+ measured truck and driver parameters would have failed to change for even a second over a period of 30 seconds or longer when the truck was operating at speeds of at least 30 mph. Excluded records amounted to 9 out of 4.7 million records (i.e., only 0.0000019%). **Data Quality Tables 5 and 6** (Appendix C-1) provide driver specific distributions of record durations under the NO FEEDBACK and FEEDBACK conditions, respectively. The same procedures were applied to data acquired in the USA drivers in study phase 2 (Appendix C-2).

Lane tracking confidence < 50%

Data Quality Table 7 (Appendix C-1) provides the ***SafeTRAC®*** Lane Tracking (Offset) Confidence Category (0% vs. > 0 to < 100% vs. 100%) in the "no records excluded" sample. As is evident in Data Quality Table 7 (Appendix C-1), a number of drivers had lane confidence values equal to 0%, unreliable values at certain times. After discussion with ***AP+®*** and ***SafeTRAC®*** representatives, lane-tracking offset values were deemed insufficiently reliable if lane tracking confidence was less than 50%. Therefore, lane tracking offsets were set to missing for all records with lane tracking confidence less than 50%. A total of 3.8% and 2.1% of records in the ≥ 30 mph sample had confidence values below 50% from ***SafeTRAC®***. Lateral distance, a primary outcome measure, is a function of lane tracking and so this was set to missing also for these records. Data Quality Table 8 (Appendix C-1) provides the same information for the cleaned analysis sample. Data Quality Tables 9 and 10 (Appendix C-1) provide greater detail with regard to the distributions of Lane Tracking Confidence values. The same procedures were applied to data acquired in the USA drivers in study phase 2 (Appendix C-2).

Driver 13 *SafeTRAC®* variables

Further examination of ***AP+®*** records for Driver 13 indicated technological failure. Therefore, all ***SafeTRAC®*** variables were set to missing for this driver (i.e., lane track confidence, lane track offset, and lateral distance including driver's alertness, ambient

light, light/dark, indicator, event category). Also, this driver was eliminated ***CoPilot®*** (for PERCLOS) with daylight = 0 since daylight information came from ***SafeTRAC®***, which was deemed nonfunctional on this Driver's truck.

Vehicle offset and lateral distance

Data Quality Table 11 for the Canada Study Phase 1 (Appendix C-1) provides summary statistics after all exclusions contained in the cleaned analysis sample for the values of the ***SafeTRAC®*** vehicle offset indicator as recorded by the ***AP+®*** system (Byte 6 of ***SafeTRAC®***). These exclusions include the setting of values with offset confidence < 50% to missing.

According to AssistWare Technology, the makers of ***SafeTRAC®***, the final five values in the 0 - 255 range of the lateral offset data byte are never used, so the translated range goes from -250 to +250cm in 2-cm increments, with a data byte value of 125 corresponding to a 0-cm lateral offset. Therefore, numbers lower than 125 indicate the vehicle is left of center while numbers higher than 125 indicate the vehicle is right of center. Specifically, a value of 0 for this byte in the output message indicates a ***SafeTRAC®*** assessment that the vehicle's current lateral offset to be –250 cm, or 2.5 meters left of lane center. A value of 1 for this byte in the output message corresponds to a lateral offset of –248 cm, etc. In order to provide a more interpretable value, lateral distance was computed from the vehicle-offset values as:

Lateral Distance = (2*Vehicle Offset-250)

Data Quality Table 12 for the Canada Study Phase 1 (Appendix C-1) provides summary statistics for the computed lateral distance values analogous to the summary in Data Quality Table 11 provided for vehicle offset. Data Quality Tables 13 and 14 (Appendix C-1) provide details regarding the distributions of lateral distances in the NO FEEDBACK and FEEDBACK conditions, respectively. In these tables, the distributions are summarized by providing the minimum and maximum values as well as the 10^{th}, 20^{th}, 30^{th}, 40^{th}, 50^{th} (median), 60^{th}, 70^{th}, 80^{th}, and 90^{th} percentiles.

SafeTRAC® Driver Alertness

"Driver alertness" is an output provided by the ***SafeTRAC®*** based on a proprietary algorithm using lane tracking input. The output ranges from 0 to 99. When the system is not measuring "alertness," the score is equal to 100. Data Quality Table 15 for the Canada Study Phase 1 (Appendix C-1; comparable data for the USA study phase is in the Table 15 of Appendix C-2) provides summary statistics for ***SafeTRAC®*** alertness for each driver under both conditions using the cleaned analysis. Data Quality Tables 16 and 17 (Appendix C-1) provide details of the distributions for each driver in the NO FEEDBACK and FEEDBACK conditions, respectively. Examination of Driver 11's NO FEEDBACK distributions of ***SafeTRAC®*** Driver's Alertness and lateral distance (computed from vehicle offset) revealed extreme values. Therefore, this Driver's alertness and vehicle offset (and lateral distance) were set to missing under both conditions for the cleaned analysis sample. Data Quality Table 34 (Appendix C-1) provides the distributions of SafeTRAC events for each driver under each condition.

Steering Wheel and Wheel Movements

Examination of the ***AP+®*** variables "steering wheel movements" and "wheel movements" suggested that these values were reversed in some Canadian trucks due to sensor reversal at installation, which was a function of truck manufacturer type. ("Steering wheel movements" were supposed to be relatively lower values compared to "wheel movements," which were relatively larger values.) Initial programming was implemented to fix wheel movement/steering wheel movement data problems assuming the problem was truck specific. Taking into account information on which truck each driver drove, the values of wheel movements and steering wheel movements were switched for Drivers 7, 9, 13, 17, 22, 22, and 28.

We expected that within truck, there would be consistency if the cause was a mechanical switching of sensors. This proved to be the case, although there remained a few instances of inconsistencies. For example, Drivers 1, 2, and 4 had values in the range expected for steering wheel movements in both channels. Driver 11 had values that appeared to flip channels going from the NO FEEDBACK and FEEDBACK condition. That is, Driver 11 had wheel movement and steering wheel movement data switched only for FEEDBACK condition. This was the only driver with a reversal in one condition only. This is impossible under the assumption that Driver 11 used the same equipment during both conditions. Thus, wheel movement data for Drivers 1, 2, 4, 6, and 11 could not be reconciled with expected values and consequently "wheel movement" and "steering wheel movement" data for these drivers were set to missing.

Data Quality Table 18 for the Canada Study Phase 1 (Appendix C-1) provides summary statistics for ***AP+®*** recorded steering wheel movement for each driver under both conditions using the cleaned analysis sample. Data Quality Tables 19 and 20 (Appendix C-1) provide details of the cleaned analysis sample steering wheel distributions for each driver in the NO FEEDBACK and FEEDBACK conditions, respectively. Data Quality Table 21 (Appendix C-1) provides summary statistics for ***AP+®*** recorded wheel movement for each driver under both conditions using the cleaned analysis sample. Data Quality Tables 22 and 23 (Appendix C-1) provide details of the cleaned analysis sample wheel distributions for each driver in the NO FEEDBACK and FEEDBACK conditions, respectively. (The comparable tables numbered for the USA study phase can be found in Appendix C-2.)

CoPilot® *measures of PERCLOS*

All ***CoPilot®*** measures of PERCLOS values recorded when the ***AP+®*** daylight sensor indicated the presence of daylight (value of 1) were set to missing in the cleaned analysis sample, since the infrared-based ***CoPilot®*** was considered accurate primarily at night. Data Quality Tables 28 and 29 for the Canada Study Phase 1 (Appendix C-1) provide the number of records in the no exclusions sample and the cleaned analysis sample, respectively, in which the daylight indicator was equal to 0 (no daylight) or 1 (daylight). In addition, Data Quality Table 24 provides a summary of the ambient light values for each driver under both conditions.

Data Quality Table 25 for the Canada Study Phase 1 (Appendix C-1) provides summary statistics for PERCLOS values recorded during no daylight records in the cleaned analysis sample. Data Quality Tables 26 and 27 (Appendix C-1) provide details of the cleaned analysis sample PERCLOS distributions for each driver in the NO FEEDBACK and FEEDBACK conditions, respectively. (Appendix C-2 has comparable data for the USA study phase.)

Vehicle speed, engine rotation, longitudinal and lateral acceleration

Data Quality Tables 30 to 33 for the Canada Study Phase 1 (Appendix C-1) provide summary statistics for vehicle speed, engine rotation, longitudinal ("X") and lateral ("Y") acceleration respectively. The ranges of the longitudinal and lateral acceleration are both from -1.28g to +1.28g.

Canada Study Phase 1 Data Quality Control

DQ Table 1: No Records Excluded
Speed Categories (mph)

	No Feedback						Feedback					
	=0.62		0.62-<30		>=30		=0.62		0.62-<30		>=30	
Driver	N	%	N	%	N	%	N	%	N	%	N	%
1	16063	10.9%	41925	28.4%	89424	60.7%	10480	13.0%	18826	23.4%	51283	63.6%
2	18523	10.4%	29823	16.7%	130500	73.0%	8994	5.3%	27582	16.4%	131890	78.3%
3	.	.	.	.	.	.	4913	2.8%	28619	16.3%	142204	80.9%
4	3352	1.4%	51251	21.6%	182506	77.0%	4597	2.2%	43276	20.8%	160403	77.0%
5	186	0.2%	13674	17.0%	66564	82.8%	35	0.2%	2860	13.1%	18969	86.8%
6	175	0.2%	16364	20.2%	64301	79.5%	46	0.1%	5639	13.5%	35984	86.4%
7	346	0.3%	17375	13.0%	115930	86.7%	691	0.4%	29555	18.6%	128588	81.0%
8	483	0.3%	23068	16.2%	118854	83.5%	165	0.1%	12149	10.1%	107403	89.7%
9	1104	0.6%	45482	23.6%	146222	75.8%	.	.	.	.	.	.
10	696	0.2%	41023	13.1%	272512	86.7%	692	0.2%	50511	15.5%	274781	84.3%
11	69	0.3%	5676	22.1%	19926	77.6%	738	0.4%	32719	18.6%	142818	81.0%
12	43	0.2%	6304	36.1%	11105	63.6%	131	0.2%	15872	24.2%	49527	75.6%
13	1168	0.8%	44123	28.9%	107503	70.4%	780	0.5%	33376	20.8%	126580	78.8%
15	1136	0.5%	62381	25.7%	178800	73.8%	740	0.3%	44492	18.2%	199487	81.5%
17	902	0.8%	48775	43.4%	62833	55.8%	142	0.4%	8267	26.0%	23433	73.6%
18	1183	0.3%	68560	15.9%	361800	83.8%	372	0.2%	27322	13.6%	173511	86.2%
19	160	0.5%	10764	36.4%	18620	63.0%	151	0.5%	11825	40.5%	17241	59.0%
20	96	0.4%	6097	25.9%	17363	73.7%	.	.	.	.	.	.
21	714	0.3%	46550	21.2%	171890	78.4%	854	0.3%	49925	20.1%	197442	79.5%
22	1086	0.5%	46474	21.8%	166041	77.7%	1258	0.6%	51143	23.6%	164070	75.8%
23	202	0.6%	18158	54.9%	14716	44.5%	278	0.7%	20746	51.4%	19338	47.9%
24	5	3.0%	162	97.0%	.	.	.	.	1	100.0%	.	.
25	788	0.6%	28846	21.9%	102015	77.5%	1044	0.6%	36697	21.0%	136953	78.4%
26	1414	0.5%	67471	21.5%	244947	78.1%	500	0.4%	23922	21.3%	87806	78.2%
27	13	0.8%	1221	72.5%	449	26.7%	1	0.5%	219	99.5%	.	.
28	.	.	.	.	.	.	100	0.8%	7015	52.6%	6211	46.6%
Total/Mean	49907	1.4%	741547	29.8%	2664821	71.8%	37702	1.3%	582558	29.1%	2395922	75.9%

Canada Study Phase 1 Data Quality Control

DQ Table 2: No Records Excluded
Record Duration Category (seconds)

	No Feedback						Feedback					
	1 sec		2 sec		>=3 sec		1 sec		2 sec		>=3 sec	
Driver	N	%	N	%	N	%	N	%	N	%	N	%
1	114612	77.8%	19408	13.2%	13379	9.1%	65216	80.9%	9656	12.0%	5700	7.1%
2	139779	78.2%	24653	13.8%	14372	8.0%	105028	62.4%	31999	19.0%	31400	18.6%
3	.	.	.	.	.	.	135952	77.4%	24917	14.2%	14753	8.4%
4	194605	82.1%	29135	12.3%	13334	5.6%	165059	79.3%	27839	13.4%	15352	7.4%
5	63160	78.6%	11565	14.4%	5641	7.0%	15569	71.2%	3965	18.1%	2330	10.7%
6	69891	86.5%	8090	10.0%	2828	3.5%	34815	83.6%	4881	11.7%	1952	4.7%
7	113777	85.2%	14837	11.1%	4872	3.6%	138023	87.0%	15866	10.0%	4804	3.0%
8	119312	83.8%	16539	11.6%	6536	4.6%	98883	82.6%	15399	12.9%	5435	4.5%
9	153418	79.7%	25764	13.4%	13334	6.9%	.	.	.	.	.	.
10	257477	81.9%	40174	12.8%	16555	5.3%	273484	83.9%	37174	11.4%	15295	4.7%
11	21153	82.5%	2923	11.4%	1577	6.1%	141897	80.6%	23505	13.4%	10631	6.0%
12	13638	78.2%	2332	13.4%	1480	8.5%	48886	74.7%	9328	14.2%	7252	11.1%
13	112602	73.8%	22550	14.8%	17482	11.5%	129876	80.9%	21049	13.1%	9675	6.0%
15	196417	81.1%	30419	12.6%	15453	6.4%	196822	80.4%	31897	13.0%	15953	6.5%
17	94289	83.9%	12269	10.9%	5806	5.2%	25821	81.1%	4279	13.4%	1723	5.4%
18	360905	83.6%	51127	11.8%	19471	4.5%	171392	85.2%	22135	11.0%	7630	3.8%
19	23496	79.5%	3715	12.6%	2331	7.9%	23184	79.4%	3572	12.2%	2453	8.4%
20	16911	71.9%	3648	15.5%	2947	12.5%	.	.	.	.	.	.
21	177701	81.1%	28082	12.8%	13348	6.1%	204169	82.3%	29879	12.0%	14156	5.7%
22	167838	78.7%	29994	14.1%	15493	7.3%	182884	84.6%	23931	11.1%	9317	4.3%
23	27176	82.2%	3892	11.8%	2001	6.1%	32423	80.4%	4895	12.1%	3028	7.5%
24	154	92.8%	8	4.8%	4	2.4%	.	.	.	.	1	100.0%
25	114276	86.9%	12784	9.7%	4479	3.4%	148390	85.0%	18581	10.6%	7560	4.3%
26	276103	88.0%	28018	8.9%	9642	3.1%	99979	89.1%	9477	8.4%	2751	2.5%
27	1502	89.3%	95	5.6%	85	5.1%	196	89.5%	17	7.8%	6	2.7%
28	.	.	.	.	.	.	10611	79.7%	1604	12.0%	1105	8.3%
Total/Mean	2830192	82.0%	422021	11.8%	202450	6.2%	2448559	80.9%	375845	12.5%	190262	10.5%

DQ Table 3: Cleaned Analysis Sample
Record Duration Category (seconds)

	No Feedback						Feedback					
	1 sec		2 sec		>=3 sec		1 sec		2 sec		>=3 sec	
Driver	N	%	N	%	N	%	N	%	N	%	N	%
1	65873	73.7%	14590	16.3%	8956	10.0%	41373	80.7%	6964	13.6%	2934	5.7%
2	101278	77.6%	19907	15.3%	9282	7.1%	75313	57.1%	28557	21.7%	27991	21.2%
4	143961	78.9%	26784	14.7%	11754	6.4%	121451	75.7%	25425	15.9%	13514	8.4%
5	50467	75.9%	10831	16.3%	5214	7.8%	12964	68.3%	3780	19.9%	2225	11.7%
6	54247	84.4%	7545	11.7%	2483	3.9%	29455	81.9%	4683	13.0%	1825	5.1%
7	96927	83.7%	14313	12.4%	4555	3.9%	109346	85.1%	14904	11.6%	4224	3.3%
8	96995	81.6%	15866	13.4%	5981	5.0%	87149	81.1%	15050	14.0%	5204	4.8%
10	218251	80.1%	38618	14.2%	15620	5.7%	225095	81.9%	35355	12.9%	14309	5.2%
11	15805	79.4%	2680	13.5%	1425	7.2%	110466	77.4%	22343	15.7%	9820	6.9%
12	7911	71.2%	1898	17.1%	1296	11.7%	34411	69.6%	8324	16.8%	6734	13.6%
13	71260	66.4%	20196	18.8%	15938	14.8%	98099	77.6%	19649	15.5%	8728	6.9%
15	136708	76.5%	28078	15.7%	13995	7.8%	154360	77.4%	30203	15.1%	14880	7.5%
17	48179	76.8%	9901	15.8%	4670	7.4%	18149	77.5%	3777	16.1%	1498	6.4%
18	294879	81.5%	48840	13.5%	18049	5.0%	145021	83.6%	21333	12.3%	7121	4.1%
19	13405	72.0%	3219	17.3%	1996	10.7%	12461	72.3%	2868	16.6%	1912	11.1%
21	133335	77.6%	26238	15.3%	12296	7.2%	156042	79.0%	28324	14.3%	13061	6.6%
22	124439	75.0%	27262	16.4%	14117	8.5%	134244	82.0%	21583	13.2%	7975	4.9%
23	10933	74.3%	2556	17.4%	1222	8.3%	14016	72.5%	3268	16.9%	2039	10.6%
25	86323	84.7%	11882	11.7%	3729	3.7%	112675	82.3%	17585	12.9%	6569	4.8%
26	210769	86.1%	26071	10.6%	8043	3.3%	76827	87.5%	8785	10.0%	2176	2.5%
Total/Mean	1981945	77.9%	357275	14.9%	160621	7.3%	1768917	77.5%	322760	14.9%	154739	7.6%

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Data Quality Table 4: No Exclusions and >=30 mph
Sum of Record Durations (hours)

	No Feedback		Feedback	
	All Records	>=30 mph	All Records	>=30 mph
Driver	Sum	Sum	Sum	Sum
1	248.9	36.5	308.0	18.4
2	254.6	48.7	319.9	70.1
3	.	.	269.8	55.2
4	247.2	67.0	307.2	62.5
5	274.3	25.2	282.1	8.0
6	325.9	21.6	133.7	12.6
7	299.4	39.3	324.9	42.7
8	172.7	41.7	189.2	37.6
9	260.5	56.9	.	.
10	291.3	97.9	289.8	96.6
11	89.6	7.4	340.6	53.1
12	106.6	4.8	243.8	22.0
13	350.5	50.6	302.6	47.1
15	354.8	68.3	307.9	75.2
17	341.3	23.6	314.0	8.6
18	365.7	126.8	304.4	59.1
19	216.1	7.7	207.4	7.2
20	57.2	18.8	.	.
21	334.3	64.4	320.4	72.6
22	312.2	64.9	335.2	59.6
23	316.5	5.7	334.4	7.9
24	2.2	.	407.5	.
25	310.3	34.2	338.3	47.6
26	359.0	81.1	118.1	28.3
27	130.9	0.2	0.1	.
28	.	.	322.1	2.9
Mean	250.9	43.2	275.9	40.7

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DQ Table 5: Cleaned Analysis Sample
NF Record Duration Distributions (seconds)

	No Feedback (Number of records at each duration)											
Driver	**N**	**1 sec**	**2 sec**	**3 sec**	**4 sec**	**5 sec**	**6-10 sec**	**11-15 sec**	**16-20 sec**	**21-25 sec**	**26-30 sec**	**>30 sec**
1	89393	65873	14590	4809	1971	982	1094	55	17	2	.	.
2	130453	101278	19907	5854	1958	778	655	15	4	4	.	.
4	182480	143961	26784	7279	2556	1024	854	17	4	1	.	.
5	66510	50467	10831	3348	1141	429	291	2	1	.	.	.
6	64273	54247	7545	1749	518	130	84	.	.	.	.	.
7	115791	96927	14313	3177	897	300	177	.	.	.	.	.
8	118840	96995	15866	3944	1257	438	337	2	1	.	.	.
10	272473	218251	38618	10022	3321	1263	976	16	4	2	.	.
11	19909	15805	2680	791	341	139	148	5	.	.	.	.
12	11095	7911	1898	636	286	135	200	26	2	1	.	.
13	107276	71260	20196	7565	3601	1882	2480	207	61	16	8	.
15	178751	136708	28078	8356	3123	1233	1210	40	3	.	.	.
17	62743	48179	9901	2921	1028	405	296	11	2	.	.	.
18	361754	294879	48840	12091	3745	1241	948	10	.	.	.	.
19	18614	13405	3219	1146	398	227	209	5	5	.	.	.
21	171847	133335	26238	7507	2604	1131	1000	26	5	1	.	.
22	165774	124439	27262	8301	3064	1321	1302	55	15	9	6	.
23	14710	10933	2556	752	272	108	87	1	1	.	.	.
25	101934	86323	11882	2616	727	242	143	1	.	.	.	.
26	244864	210769	26071	5455	1551	559	418	21	15	3	2	.
Total/Mean	2499484	99097	17864	4916	1718	698	645	29	9	4	5	

Canada Study Phase 1 Data Quality Control

DQ Table 6: Cleaned Analysis Sample
FB Record Duration Distributions (seconds)

	Feedback (Number of records at each duration)											
Driver	**N**	**1 sec**	**2 sec**	**3 sec**	**4 sec**	**5 sec**	**6-10 sec**	**11-15 sec**	**16-20 sec**	**21-25 sec**	**26-30 sec**	**>30 sec**
1	51266	41373	6964	1856	593	249	221	10	.	.	.	.
2	131697	75313	28557	13061	6618	3506	4347	231	52	12	.	.
4	160346	121451	25425	7809	2892	1373	1319	59	17	.	1	.
5	18965	12964	3780	1316	507	208	186	3	1	.	.	.
6	35963	29455	4683	1232	379	122	90	2	.	.	.	.
7	128474	109346	14904	3055	790	252	127	.	.	.	.	.
8	107401	87149	15050	3615	1049	345	192	1	.	.	.	.
10	274740	225095	35355	9141	3040	1193	900	15	1	.	.	.
11	142616	110466	22343	6195	2081	822	690	18	1	.	.	.
12	49454	34411	8324	3296	1559	808	1013	26	15	2	.	.
13	126468	98099	19649	5434	1931	757	581	15	1	1	.	.
15	199417	154360	30203	8853	3350	1389	1231	23	6	2	.	.
17	23423	18149	3777	969	333	120	74	1	.	.	.	.
18	173470	145021	21333	4841	1459	504	310	2	.	.	.	.
19	17232	12461	2868	1054	408	202	219	13	5	2	.	.
21	197408	156042	28324	8021	2789	1143	1055	30	4	.	.	.
22	163799	134244	21583	5235	1678	616	436	7	.	.	.	.
23	19322	14016	3268	1162	475	201	200	.	.	.	.	.
25	136826	112675	17585	4300	1339	556	367	4	.	.	.	.
26	87787	76827	8785	1588	407	116	64	.	.	.	.	.
Total/Mean	2246074	88446	16138	4602	1684	724	681	27	10	4	1	

Canada Study Phase 1 Data Quality Control

DQ Table 7: No Records Excluded
SafeTRAC Lane Tracking (Offset) Confidence Category

	No Feedback						Feedback					
	0%		>0% to <100%		100%		0%		>0% to <100%		100%	
Driver	N	%	N	%	N	%	N	%	N	%	N	%
1	735	3.2%	21977	94.3%	584	2.5%	1273	11.3%	9745	86.9%	201	1.8%
2	675	2.0%	32124	93.9%	1429	4.2%	364	1.6%	21517	94.0%	1021	4.5%
3	.	.	.	.	.	.	339	1.3%	23629	93.5%	1305	5.2%
4	320	1.6%	18820	96.1%	451	2.3%	435	2.8%	14464	93.9%	498	3.2%
5	99	1.4%	6781	93.7%	357	4.9%	14	1.0%	1256	89.4%	135	9.6%
6	63	0.7%	8242	91.6%	691	7.7%	17	0.6%	2657	95.7%	101	3.6%
7	3748	26.8%	9665	69.1%	566	4.0%	85	0.6%	12501	94.6%	631	4.8%
8	83	0.8%	9635	96.4%	273	2.7%	35	0.7%	5016	96.8%	131	2.5%
9	17140	54.6%	14018	44.7%	235	0.7%	.	.	.	.	.	.
10	16787	48.0%	17401	49.7%	794	2.3%	224	1.0%	21393	93.5%	1255	5.5%
11	2164	22.0%	7574	77.1%	88	0.9%	262	2.3%	11091	95.3%	280	2.4%
12	96	5.9%	1453	90.0%	66	4.1%	198	4.2%	4338	92.5%	153	3.3%
13	150912	99.8%	325	0.2%	4	0.0%	123	1.0%	11740	96.1%	353	2.9%
15	303	1.6%	18221	96.1%	444	2.3%	239	1.4%	16464	96.1%	438	2.6%
17	228	1.5%	14440	96.0%	373	2.5%	18	0.7%	2643	97.1%	61	2.2%
18	450	1.5%	29464	95.6%	909	2.9%	2981	18.8%	12395	78.3%	456	2.9%
19	22	0.5%	4348	96.9%	118	2.6%	36	0.9%	3778	95.8%	128	3.2%
20	52	1.9%	2530	90.1%	225	8.0%	.	.	.	.	.	.
21	289	1.8%	15353	96.1%	336	2.1%	639	4.0%	15166	94.3%	285	1.8%
22	14413	45.1%	16636	52.0%	914	2.9%	258	0.9%	27344	92.8%	1874	6.4%
23	117	1.7%	6463	96.0%	149	2.2%	121	1.6%	7517	96.5%	155	2.0%
24	2	3.7%	52	96.3%	.	.	.	.	.	.	.	.
25	88	0.7%	11621	93.4%	729	5.9%	131	0.7%	16959	94.6%	834	4.7%
26	498	1.6%	29372	95.2%	977	3.2%	128	1.3%	9263	94.6%	401	4.1%
27	4	0.8%	470	94.8%	22	4.4%	220	100.0%	.	.	.	.
28	.	.	.	.	.	.	107	3.7%	2686	94.1%	61	2.1%
Total/Mean	209288	13.7%	296985	83.1%	10734	3.3%	8247	7.1%	253562	93.5%	10757	3.7%

Canada Study Phase 1 Data Quality Control

DQ Table 8: Cleaned Analysis Sample
SafeTRAC Lane Tracking (Offset) Confidence Category

	No Feedback						Feedback					
	0%		>0% to <100%		100%		0%		>0% to <100%		100%	
Driver	N	%	N	%	N	%	N	%	N	%	N	%
1	1	0.0%	2965	93.5%	206	6.5%	.	.	1394	93.1%	104	6.9%
2	19	0.1%	12320	91.3%	1156	8.6%	4	0.0%	8248	90.6%	854	9.4%
4	8	0.3%	2674	93.4%	180	6.3%	1	0.0%	2582	93.6%	176	6.4%
5	.	.	1909	88.6%	245	11.4%	.	.	383	85.5%	65	14.5%
6	.	.	3728	86.1%	601	13.9%	.	.	681	88.9%	85	11.1%
7	3	0.1%	3992	89.4%	470	10.5%	.	.	3956	89.6%	459	10.4%
8	1	0.0%	2242	94.1%	139	5.8%	.	.	1507	95.1%	78	4.9%
10	3	0.0%	5585	91.6%	508	8.3%	5	0.1%	6922	91.2%	661	8.7%
11	1928	27.4%	5049	71.9%	49	0.7%	6	0.2%	2382	94.7%	126	5.0%
12	.	.	246	94.3%	15	5.7%	.	.	834	91.5%	77	8.5%
13	.	.	.	.	.	.	.	.	.	.	.	.
15	4	0.1%	2736	95.4%	128	4.5%	32	0.7%	4670	94.9%	219	4.5%
17	.	.	1421	91.4%	134	8.6%	1	0.2%	447	90.9%	44	8.9%
18	15	0.2%	9240	94.0%	572	5.8%	11	0.2%	4498	93.8%	284	5.9%
19	1	0.1%	681	90.4%	71	9.4%	.	.	681	90.3%	73	9.7%
21	7	0.2%	2758	94.7%	146	5.0%	9	0.3%	3009	95.8%	123	3.9%
22	1	0.0%	5477	89.4%	645	10.5%	4	0.0%	12255	89.7%	1399	10.2%
23	2	0.3%	656	92.5%	51	7.2%	1	0.1%	876	92.4%	71	7.5%
25	3	0.1%	4513	91.7%	406	8.2%	3	0.1%	5461	91.7%	489	8.2%
26	144	1.1%	12235	93.5%	706	5.4%	8	0.2%	3893	92.8%	292	7.0%
Total/Mean	2140	2.0%	80427	90.9%	6428	7.5%	85	0.2%	64679	91.9%	5679	8.0%

Canada Study Phase 1 Data Quality Control

DQ Table 9: Cleaned Analysis Sample
NF SafeTRAC Lane Tracking (Offset) Confidence Category

	No Feedback (Percentages in Each Category)											
Driver	**N**	**0%**	**>0-10%**	**>10-20%**	**>20-30%**	**>30-40%**	**>40-50%**	**>50-60%**	**>60-70%**	**>70-80%**	**>80-90%**	**>90-100%**
1	89424	1.02%	0.59%	0.26%	0.19%	0.17%	0.14%	0.16%	0.14%	0.17%	0.19%	96.98%
2	130500	2.37%	1.30%	0.49%	0.40%	0.36%	0.34%	0.36%	0.32%	0.28%	0.22%	93.55%
4	182506	1.32%	0.55%	0.21%	0.17%	0.15%	0.16%	0.17%	0.14%	0.14%	0.13%	96.85%
5	66564	0.88%	0.44%	0.17%	0.12%	0.12%	0.09%	0.14%	0.11%	0.11%	0.13%	97.69%
6	64301	0.40%	0.16%	0.07%	0.08%	0.06%	0.06%	0.06%	0.06%	0.07%	0.09%	98.90%
7	115930	3.57%	0.40%	0.18%	0.12%	0.10%	0.10%	0.12%	0.08%	0.10%	0.09%	95.15%
8	118854	1.58%	0.81%	0.26%	0.21%	0.17%	0.18%	0.18%	0.16%	0.17%	0.17%	96.13%
10	272512	5.98%	0.25%	0.14%	0.11%	0.09%	0.10%	0.12%	0.09%	0.09%	0.10%	92.94%
11	19926	11.53%	1.27%	0.65%	0.49%	0.43%	0.35%	4.52%	0.25%	0.37%	0.40%	79.76%
12	11105	0.57%	0.36%	0.26%	0.17%	0.15%	0.23%	0.22%	0.13%	0.15%	0.19%	97.58%
13	.	.	.	.	.	.	.	.	.	.	.	.
15	178800	0.89%	0.47%	0.26%	0.24%	0.20%	0.22%	0.24%	0.19%	0.16%	0.17%	96.95%
17	62833	0.68%	0.50%	0.17%	0.15%	0.10%	0.10%	0.11%	0.10%	0.08%	0.08%	97.93%
18	361800	2.32%	0.94%	0.33%	0.24%	0.21%	0.19%	0.22%	0.19%	0.17%	0.18%	95.01%
19	18620	0.89%	0.32%	0.14%	0.12%	0.15%	0.08%	0.11%	0.09%	0.06%	0.07%	97.99%
21	171890	0.45%	0.21%	0.12%	0.10%	0.10%	0.08%	0.09%	0.07%	0.05%	0.07%	98.66%
22	166040	5.26%	0.31%	0.14%	0.11%	0.09%	0.08%	0.11%	0.08%	0.09%	0.09%	93.64%
23	14716	1.38%	0.84%	0.47%	0.30%	0.27%	0.16%	0.37%	0.16%	0.20%	0.21%	95.64%
25	102015	1.14%	0.58%	0.31%	0.24%	0.19%	0.15%	0.21%	0.15%	0.12%	0.15%	96.78%
26	244947	4.33%	0.44%	0.28%	0.22%	0.17%	0.16%	0.50%	0.14%	0.12%	0.11%	93.53%
Total/Mean	2393283	2.45%	0.57%	0.26%	0.20%	0.17%	0.16%	0.42%	0.14%	0.14%	0.15%	95.35%

Canada Study Phase 1 Data Quality Control

DQ Table 10: Cleaned Analysis Sample
FB SafeTRAC Lane Tracking (Offset) Confidence Category

	Feedback (Percentages in Each Category)											
Driver	**N**	**0%**	**>0-10%**	**>10-20%**	**>20-30%**	**>30-40%**	**>40-50%**	**>50-60%**	**>60-70%**	**>70-80%**	**>80-90%**	**>90-100%**
1	51283	1.49%	0.72%	0.22%	0.17%	0.13%	0.10%	0.24%	0.08%	0.13%	0.14%	96.58%
2	131890	0.71%	0.47%	0.18%	0.16%	0.14%	0.12%	0.15%	0.12%	0.10%	0.12%	97.73%
4	160402	0.76%	0.39%	0.18%	0.15%	0.12%	0.12%	0.12%	0.11%	0.11%	0.11%	97.83%
5	18969	0.33%	0.17%	0.14%	0.07%	0.08%	0.11%	0.13%	0.18%	0.21%	0.29%	98.29%
6	35984	0.24%	0.10%	0.08%	0.05%	0.03%	0.04%	0.07%	0.03%	0.04%	0.02%	99.30%
7	128588	0.93%	0.44%	0.18%	0.14%	0.17%	0.17%	0.21%	0.18%	0.14%	0.13%	97.32%
8	107403	0.33%	0.16%	0.10%	0.09%	0.06%	0.07%	0.08%	0.05%	0.05%	0.05%	98.97%
10	274781	0.39%	0.27%	0.14%	0.12%	0.10%	0.07%	0.11%	0.08%	0.09%	0.08%	98.55%
11	142818	0.92%	0.32%	0.15%	0.10%	0.10%	0.09%	0.12%	0.10%	0.10%	0.11%	97.87%
12	49527	0.44%	0.20%	0.07%	0.07%	0.05%	0.05%	0.08%	0.07%	0.04%	0.07%	98.87%
13	.	.	.	.	.	.	.	.	.	.	.	.
15	199487	1.44%	0.57%	0.20%	0.16%	0.14%	0.13%	0.21%	0.11%	0.11%	0.13%	96.81%
17	23433	0.35%	0.13%	0.05%	0.02%	0.03%	0.04%	0.09%	0.04%	0.01%	0.06%	99.20%
18	173511	3.75%	1.62%	0.36%	0.25%	0.24%	0.22%	0.28%	0.19%	0.22%	0.20%	92.67%
19	17241	1.00%	0.42%	0.17%	0.17%	0.13%	0.10%	0.10%	0.08%	0.12%	0.14%	97.57%
21	197442	0.48%	0.36%	0.24%	0.18%	0.18%	0.82%	0.16%	0.12%	0.11%	0.10%	97.25%
22	164069	1.76%	0.93%	0.41%	0.28%	0.27%	0.31%	0.45%	0.28%	0.29%	0.29%	94.73%
23	19338	0.64%	0.64%	0.42%	0.31%	0.26%	0.25%	0.25%	0.23%	0.26%	0.21%	96.52%
25	136953	1.44%	0.59%	0.24%	0.18%	0.16%	0.17%	0.19%	0.21%	0.17%	0.17%	96.47%
26	87806	0.66%	0.49%	0.25%	0.18%	0.17%	0.15%	0.15%	0.13%	0.13%	0.13%	97.56%
Total/Mean	2120925	0.95%	0.47%	0.20%	0.15%	0.14%	0.17%	0.17%	0.12%	0.13%	0.13%	97.37%

Canada Study Phase 1 Data Quality Control

Data Quality Table 11: Cleaned Analysis Sample
SafeTRAC Vehicle Offset (unweighted by record duration)

	No Feedback						Feedback					
Driver	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	87319	125.6	16.7	126.0	0.0	247.0	49834	126.6	16.1	127.0	1.0	247.0
2	123664	118.5	19.7	119.0	0.0	250.0	129556	120.2	17.4	120.0	0.0	250.0
4	177846	130.5	13.4	131.0	0.0	250.0	157669	128.8	13.2	129.0	0.0	249.0
5	65364	121.8	14.0	122.0	1.0	249.0	18798	123.9	12.8	124.0	2.0	246.0
6	63768	119.2	13.7	120.0	4.0	247.0	35789	121.8	12.5	122.0	7.0	245.0
7	110761	122.3	14.3	123.0	0.0	250.0	126005	122.3	13.6	123.0	1.0	249.0
8	115069	128.9	15.0	129.0	0.0	250.0	106549	129.6	12.9	130.0	1.0	246.0
10	254388	130.4	15.3	131.0	0.0	250.0	271790	129.9	16.2	130.0	0.0	248.0
11	0	.	.	.	.	.	0	.	.	.	.	.
12	10915	129.1	14.4	129.0	3.0	246.0	49098	126.4	12.7	127.0	2.0	246.0
13	0	.	.	.	.	.	0	.	.	.	.	.
15	174757	137.0	15.8	138.0	0.0	250.0	194255	138.5	17.8	140.0	0.0	250.0
17	61770	127.3	14.8	127.0	3.0	249.0	23291	127.6	14.4	128.0	0.0	246.0
18	346546	137.9	18.6	139.0	0.0	250.0	162376	137.2	18.5	138.0	0.0	250.0
19	18306	124.4	16.3	125.0	0.0	249.0	16897	123.7	16.5	124.0	2.0	249.0
21	170081	136.0	15.2	137.0	0.0	249.0	193010	136.7	15.6	137.0	0.0	250.0
22	156105	124.4	15.2	125.0	0.0	250.0	157614	120.1	17.7	120.0	0.0	250.0
23	14217	129.3	19.2	130.0	0.0	248.0	18852	130.5	20.7	131.0	0.0	248.0
25	99382	126.5	17.7	127.0	0.0	250.0	133168	127.2	17.5	127.0	0.0	250.0
26	231285	133.3	22.3	135.0	0.0	250.0	86148	133.5	20.8	134.0	0.0	250.0
Mean		127.9		128.5				128.0		128.4		

Canada Study Phase 1 Data Quality Control

Data Quality Table 12: Cleaned Analysis Sample
Lateral Distance (2*Vehicle Offset-250) (unweighted by record duration)

	No Feedback						Feedback					
Driver	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	87319	1.3	33.5	2.0	-250.0	244.0	49834	3.2	32.3	4.0	-248.0	244.0
2	123664	-13.0	39.4	-12.0	-250.0	250.0	129556	-9.6	34.7	-10.0	-250.0	250.0
4	177846	10.9	26.9	12.0	-250.0	250.0	157669	7.6	26.4	8.0	-250.0	248.0
5	65364	-6.5	28.0	-6.0	-248.0	248.0	18798	-2.2	25.6	-2.0	-246.0	242.0
6	63768	-11.5	27.3	-10.0	-242.0	244.0	35789	-6.4	25.0	-6.0	-236.0	240.0
7	110761	-5.3	28.5	-4.0	-250.0	250.0	126005	-5.3	27.1	-4.0	-248.0	248.0
8	115069	7.8	30.1	8.0	-250.0	250.0	106549	9.2	25.8	10.0	-248.0	242.0
10	254388	10.8	30.6	12.0	-250.0	250.0	271790	9.7	32.3	10.0	-250.0	246.0
11	0	.	.	.	.	.	0	.	.	.	.	.
12	10915	8.1	28.8	8.0	-244.0	242.0	49098	2.8	25.4	4.0	-246.0	242.0
13	0	.	.	.	.	.	0	.	.	.	.	.
15	174757	24.0	31.5	26.0	-250.0	250.0	194255	27.0	35.7	30.0	-250.0	250.0
17	61770	4.7	29.7	4.0	-244.0	248.0	23291	5.2	28.9	6.0	-250.0	242.0
18	346546	25.9	37.3	28.0	-250.0	250.0	162376	24.5	37.0	26.0	-250.0	250.0
19	18306	-1.1	32.5	0.0	-250.0	248.0	16897	-2.6	33.0	-2.0	-246.0	248.0
21	170081	21.9	30.4	24.0	-250.0	248.0	193010	23.4	31.3	24.0	-250.0	250.0
22	156105	-1.1	30.5	0.0	-250.0	250.0	157614	-9.8	35.5	-10.0	-250.0	250.0
23	14217	8.6	38.4	10.0	-250.0	246.0	18852	10.9	41.4	12.0	-250.0	246.0
25	99382	2.9	35.4	4.0	-250.0	250.0	133168	4.4	35.0	4.0	-250.0	250.0
26	231285	16.6	44.6	20.0	-250.0	250.0	86148	17.1	41.5	18.0	-250.0	250.0
Mean		5.8	32.4	7.0				6.1	31.9	6.8		

Canada Study Phase 1 Data Quality Control

Data Quality Table 13: Clean Analysis
No Feedback Percentiles of Lateral Distance (2*Vehicle

	No Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	8731	-	-	-	-	-	2.0	8.0	12.	20.	30.	244.
2	12366	-	-	-	-	-	-	-	2.0	10.	22.	250.
4	17784	-	-	-	4.0	8.0	12.	16.	22.	26.	34.	250.
5	6536	-	-	-	-	-	-	-	4.0	12.	22.	248.
6	6376	-	-	-	-	-	-	-	0.0	6.0	18.	244.
7	11076	-	-	-	-	-	-	0.0	6.0	12.	22.	250.
8	11506	-	-	-	-	4.0	8.0	14.	20.	24.	36.	250.
10	25438	-	-	-	0.0	6.0	12.	18.	24.	32.	42.	250.
11	0	.	.	.	.	.	.	.	.	.	.	.
12	1091	-	-	-	0.0	4.0	8.0	14.	18.	24.	34.	242.
13	0	.	.	.	.	.	.	.	.	.	.	.
15	17475	-	-	6.0	14.	20.	26.	32.	38.	44.	56.	250.
17	6177	-	-	-	-	0.0	4.0	10.	16.	22.	32.	248.
18	34654	-	-	2.0	12.	20.	28.	36.	44.	52.	66.	250.
19	1830	-	-	-	-	-	0.0	6.0	12.	20.	30.	248.
21	17008	-	-	4.0	12.	18.	24.	28.	34.	40.	50.	248.
22	15610	-	-	-	-	-	0.0	4.0	12.	18.	30.	250.
23	1421	-	-	-	-	4.0	10.	18.	26.	34.	48.	246.
25	9938	-	-	-	-	-	4.0	10.	18.	26.	38.	250.
26	23128	-	-	-	2.0	12.	20.	28.	36.	48.	62.	250.
Total/Mean	228154	-	-	-	-	1.3	7.0	12.	19.	26.	37.	248.

Canada Study Phase 1 Data Quality Control

Data Quality Table 14: Clean Analysis Sample
FB Percentiles of Lateral Distance (2*Vehicle Offset-250)

	Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	49834	-248.0	-24.0	-14.0	-6.0	-2.0	4.0	8.0	14.0	22.0	32.0	244.0
2	129556	-250.0	-42.0	-30.0	-22.0	-16.0	-10.0	-4.0	2.0	10.0	22.0	250.0
4	157669	-250.0	-16.0	-6.0	0.0	4.0	8.0	14.0	18.0	22.0	30.0	248.0
5	18798	-246.0	-30.0	-20.0	-12.0	-8.0	-2.0	4.0	8.0	16.0	26.0	242.0
6	35789	-236.0	-30.0	-22.0	-16.0	-10.0	-6.0	-2.0	4.0	8.0	18.0	240.0
7	126005	-248.0	-32.0	-22.0	-16.0	-10.0	-4.0	0.0	6.0	12.0	20.0	248.0
8	106549	-248.0	-16.0	-6.0	0.0	4.0	10.0	14.0	20.0	26.0	36.0	242.0
10	271790	-250.0	-24.0	-12.0	-2.0	4.0	10.0	18.0	24.0	32.0	44.0	246.0
11	0	.	.	.	.	.	.	.	.	.	.	.
12	49098	-246.0	-20.0	-12.0	-6.0	0.0	4.0	8.0	12.0	18.0	26.0	242.0
13	0	.	.	.	.	.	.	.	.	.	.	.
15	194255	-250.0	-8.0	6.0	16.0	22.0	30.0	36.0	42.0	50.0	62.0	250.0
17	23291	-250.0	-22.0	-12.0	-6.0	0.0	6.0	10.0	16.0	22.0	32.0	242.0
18	162376	-250.0	-14.0	2.0	12.0	20.0	26.0	34.0	42.0	50.0	62.0	250.0
19	16897	-246.0	-36.0	-24.0	-16.0	-8.0	-2.0	4.0	10.0	18.0	30.0	248.0
21	193010	-250.0	-6.0	6.0	12.0	20.0	24.0	30.0	36.0	44.0	54.0	250.0
22	157614	-250.0	-46.0	-32.0	-24.0	-16.0	-10.0	-2.0	4.0	14.0	24.0	250.0
23	18852	-250.0	-32.0	-14.0	-4.0	4.0	12.0	20.0	28.0	40.0	54.0	246.0
25	133168	-250.0	-32.0	-18.0	-10.0	-2.0	4.0	12.0	20.0	28.0	42.0	250.0
26	86148	-250.0	-28.0	-10.0	2.0	10.0	18.0	26.0	36.0	46.0	62.0	250.0
Total/Mean	1930699	-248.2	-25.4	-13.3	-5.4	0.9	6.8	12.8	19.0	26.6	37.6	246.6

Canada Study Phase 1 Data Quality Control

Data Quality Table 15: Cleaned Analysis Sample
SafeTRAC Driver Alertness Summary (unweighted by record duration)

	No Feedback						Feedback					
Driver	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	89424	85.4	6.3	86.0	40.0	100.0	51283	85.0	6.9	85.0	44.0	100.0
2	130500	76.9	10.2	78.0	30.0	100.0	131890	77.7	9.4	79.0	22.0	100.0
4	182506	93.3	3.7	94.0	37.0	100.0	160402	93.3	3.9	94.0	48.0	100.0
5	66564	82.4	6.7	84.0	45.0	100.0	18969	80.0	6.4	80.0	52.0	100.0
6	64301	88.5	4.8	89.0	66.0	100.0	35984	88.3	3.8	89.0	67.0	100.0
7	115930	82.9	14.1	85.0	0.0	100.0	128588	85.2	5.2	86.0	53.0	100.0
8	118854	85.0	6.3	85.0	38.0	100.0	107403	85.5	5.6	86.0	39.0	100.0
10	272512	75.8	19.4	80.0	0.0	100.0	274781	75.6	7.7	76.0	17.0	100.0
11	0	.	.	.	.	.	0	.	.	.	.	.
12	11105	91.0	5.6	92.0	54.0	100.0	49527	90.5	3.9	91.0	58.0	100.0
13	0	.	.	.	.	.	0	.	.	.	.	.
15	178800	90.1	4.6	91.0	46.0	100.0	199487	86.8	9.7	88.0	0.0	100.0
17	62833	86.2	6.4	86.0	35.0	100.0	23433	85.1	3.8	85.0	70.0	100.0
18	361800	78.5	9.4	79.0	27.0	100.0	173511	76.3	13.3	78.0	0.0	100.0
19	18620	81.7	7.4	82.0	60.0	100.0	17241	78.0	7.1	78.0	56.0	100.0
21	171890	91.4	3.9	92.0	58.0	100.0	197442	90.5	5.1	91.0	0.0	100.0
22	166040	78.0	18.7	82.0	0.0	100.0	164069	79.8	9.4	79.0	0.0	100.0
23	14716	75.0	11.6	75.0	41.0	100.0	19338	70.1	10.7	69.0	24.0	100.0
25	102015	73.6	9.5	74.0	37.0	100.0	136953	75.1	9.3	75.0	30.0	100.0
26	244947	70.8	16.8	74.0	0.0	100.0	87806	69.7	18.1	74.0	0.0	100.0
Mean		82.6		83.8				81.8		82.4		

Canada study phase Data Quality Control

Data Quality Table 16: Cleaned Analysis Sample
NF SafeTRAC Driver Alertness Distribution (unweighted by record duration)

	No Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	89424	40.0	77.0	81.0	83.0	85.0	86.0	87.0	88.0	89.0	92.0	100.0
2	130500	30.0	64.0	71.0	74.0	76.0	78.0	80.0	82.0	84.0	87.0	100.0
4	182506	37.0	89.0	91.0	92.0	93.0	94.0	95.0	95.0	96.0	97.0	100.0
5	66564	45.0	73.0	77.0	80.0	82.0	84.0	85.0	86.0	87.0	89.0	100.0
6	64301	66.0	83.0	85.0	87.0	88.0	89.0	89.0	91.0	92.0	94.0	100.0
7	115930	0.0	75.0	81.0	82.0	84.0	85.0	86.0	87.0	90.0	92.0	100.0
8	118854	38.0	77.0	80.0	82.0	84.0	85.0	87.0	89.0	90.0	92.0	100.0
10	272512	0.0	70.0	75.0	77.0	79.0	80.0	82.0	83.0	85.0	87.0	100.0
11	0	.	.	.	.	.	.	.	.	.	.	.
12	11105	54.0	85.0	88.0	89.0	90.0	92.0	93.0	94.0	96.0	96.0	100.0
13	0	.	.	.	.	.	.	.	.	.	.	.
15	178800	46.0	85.0	87.0	89.0	90.0	91.0	92.0	92.0	93.0	95.0	100.0
17	62833	35.0	79.0	82.0	84.0	85.0	86.0	87.0	89.0	91.0	93.0	100.0
18	361800	27.0	67.0	73.0	75.0	78.0	79.0	81.0	83.0	85.0	88.0	100.0
19	18620	60.0	72.0	76.0	79.0	81.0	82.0	83.0	85.0	87.0	89.0	100.0
21	171890	58.0	87.0	89.0	90.0	91.0	92.0	92.0	93.0	94.0	95.0	100.0
22	166040	0.0	70.0	74.0	77.0	80.0	82.0	84.0	86.0	88.0	90.0	100.0
23	14716	41.0	61.0	67.0	71.0	73.0	75.0	78.0	81.0	82.0	85.0	100.0
25	102015	37.0	62.0	67.0	70.0	72.0	74.0	76.0	78.0	80.0	83.0	100.0
26	244947	0.0	48.0	57.0	63.0	69.0	74.0	77.0	80.0	83.0	88.0	100.0
Total/Mean	2373357	34.1	73.6	77.8	80.2	82.2	83.8	85.2	86.8	88.4	90.7	100.0

Canada Study Phase 1 Data Quality Control

Data Quality Table 17: Cleaned Analysis Sample
FB SafeTRAC Driver Alertness Distribution (unweighted by record duration)

	Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	51283	44.0	77.0	81.0	82.0	84.0	85.0	86.0	88.0	90.0	92.0	100.0
2	131890	22.0	67.0	72.0	75.0	77.0	79.0	81.0	82.0	84.0	87.0	100.0
4	160402	48.0	89.0	91.0	92.0	93.0	94.0	95.0	95.0	96.0	97.0	100.0
5	18969	52.0	73.0	76.0	78.0	79.0	80.0	82.0	82.0	84.0	87.0	100.0
6	35984	67.0	84.0	86.0	87.0	88.0	89.0	89.0	90.0	91.0	92.0	100.0
7	128588	53.0	78.0	81.0	83.0	85.0	86.0	87.0	88.0	89.0	90.0	100.0
8	107403	39.0	79.0	82.0	83.0	85.0	86.0	87.0	88.0	90.0	91.0	100.0
10	274781	17.0	66.0	70.0	72.0	74.0	76.0	78.0	79.0	81.0	84.0	100.0
11	0	.	.	.	.	.	.	.	.	.	.	.
12	49527	58.0	86.0	88.0	89.0	90.0	91.0	92.0	93.0	94.0	95.0	100.0
13	0	.	.	.	.	.	.	.	.	.	.	.
15	199487	0.0	80.0	84.0	85.0	87.0	88.0	90.0	91.0	92.0	94.0	100.0
17	23433	70.0	80.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	100.0
18	173511	0.0	63.0	70.0	73.0	76.0	78.0	80.0	82.0	85.0	88.0	100.0
19	17241	56.0	69.0	73.0	75.0	77.0	78.0	80.0	81.0	82.0	84.0	100.0
21	197442	0.0	84.0	87.0	89.0	90.0	91.0	92.0	93.0	94.0	96.0	100.0
22	164069	0.0	68.0	72.0	75.0	77.0	79.0	81.0	84.0	87.0	92.0	100.0
23	19338	24.0	58.0	63.0	65.0	67.0	69.0	71.0	73.0	76.0	81.0	100.0
25	136953	30.0	64.0	68.0	71.0	73.0	75.0	77.0	79.0	81.0	85.0	100.0
26	87806	0.0	46.0	57.0	65.0	69.0	74.0	77.0	80.0	83.0	88.0	100.0
Total/Mean	1978107	32.2	72.8	76.8	79.0	80.8	82.4	83.9	85.3	87.1	89.6	100.0

Canada Study Phase 1 Data Quality Control

Data Quality Table 18: Cleaned Analysis Sample
Steering Wheel Movements Summary (unweighted by record duration)

	No Feedback						Feedback					
Driver	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	89424	7.5	1.5	7.0	5.0	16.0	51283	6.2	1.3	6.0	4.0	14.0
2	130500	15.2	16.2	12.0	0.0	90.0	131890	3.0	2.0	3.0	0.0	28.0
4	182506	13.8	3.9	13.0	9.0	39.0	160402	10.5	1.7	10.0	8.0	25.0
5	66564	2.0	2.6	1.0	0.0	28.0	18969	5.3	6.3	2.0	0.0	30.0
6	64301	8.7	1.5	9.0	5.0	15.0	35984	7.9	0.8	8.0	5.0	11.0
7	115930	13.8	2.3	13.0	10.0	68.0	128588	11.9	1.5	12.0	9.0	22.0
8	118854	15.3	2.1	15.0	12.0	36.0	107403	15.0	2.1	14.0	12.0	44.0
10	272512	14.3	2.1	14.0	11.0	31.0	274781	13.8	2.1	13.0	11.0	30.0
11	19926	6.1	0.9	6.0	5.0	11.0	142818	11.2	1.3	11.0	8.0	24.0
12	11105	6.1	4.5	4.0	2.0	17.0	49527	16.9	8.4	18.0	1.0	45.0
13	107490	11.0	1.4	11.0	8.0	27.0	126580	10.6	1.4	10.0	8.0	22.0
15	178800	13.1	1.8	13.0	10.0	28.0	199487	12.9	1.9	12.0	10.0	27.0
17	62833	11.2	1.7	11.0	8.0	28.0	23433	10.6	1.6	10.0	8.0	19.0
18	361800	13.1	1.8	13.0	10.0	30.0	173511	13.5	1.9	13.0	10.0	27.0
19	18620	22.3	10.5	21.0	0.0	66.0	17241	6.4	1.7	6.0	2.0	20.0
21	171890	13.2	1.6	13.0	10.0	25.0	197442	13.5	1.9	13.0	10.0	31.0
22	166040	9.3	1.4	9.0	7.0	24.0	164069	11.2	2.3	11.0	7.0	37.0
23	0	.	.	.	.	.	0	.	.	.	.	.
25	102015	10.4	1.7	10.0	7.0	28.0	136953	9.6	1.8	9.0	6.0	30.0
26	244947	14.1	1.7	14.0	10.0	27.0	87806	14.0	1.8	14.0	10.0	25.0
		11.6		11.0	6.8	33.4		10.7		10.3	6.8	26.9

Canada Study Phase 1 Data Quality Control

Data Quality Table 19: Cleaned Analysis Sample
NF Steering Wheel Movements Distribution

	No Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	89424	5.0	6.0	6.0	7.0	7.0	7.0	8.0	8.0	9.0	9.0	16.0
2	130500	0.0	0.0	1.0	1.0	1.0	12.0	21.0	25.0	27.0	38.0	90.0
4	182506	9.0	10.0	11.0	12.0	12.0	13.0	13.0	14.0	16.0	19.0	39.0
5	66564	0.0	0.0	0.0	1.0	1.0	1.0	2.0	2.0	3.0	5.0	28.0
6	64301	5.0	7.0	7.0	8.0	8.0	9.0	9.0	9.0	10.0	11.0	15.0
7	115930	10.0	11.0	12.0	12.0	13.0	13.0	14.0	15.0	16.0	17.0	68.0
8	118854	12.0	13.0	14.0	14.0	14.0	15.0	15.0	16.0	16.0	18.0	36.0
10	272512	11.0	12.0	13.0	13.0	13.0	14.0	14.0	15.0	16.0	17.0	31.0
11	19926	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	11.0
12	11105	2.0	3.0	3.0	3.0	4.0	4.0	5.0	6.0	7.0	16.0	17.0
13	107490	8.0	9.0	10.0	10.0	10.0	11.0	11.0	12.0	12.0	13.0	27.0
15	178800	10.0	11.0	12.0	12.0	12.0	13.0	13.0	14.0	14.0	15.0	28.0
17	62833	8.0	9.0	10.0	10.0	10.0	11.0	11.0	12.0	13.0	14.0	28.0
18	361800	10.0	11.0	12.0	12.0	12.0	13.0	13.0	14.0	14.0	15.0	30.0
19	18620	0.0	10.0	13.0	15.0	20.0	21.0	22.0	23.0	32.0	39.0	66.0
21	171890	10.0	11.0	12.0	12.0	13.0	13.0	13.0	14.0	14.0	15.0	25.0
22	166040	7.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0	10.0	11.0	24.0
23	0	.	.	.	.	.	.	.	.	.	.	.
25	102015	7.0	9.0	9.0	9.0	10.0	10.0	10.0	11.0	12.0	13.0	28.0
26	244947	10.0	12.0	13.0	13.0	14.0	14.0	14.0	15.0	15.0	16.0	27.0
Total/Mean	2486057	6.8	8.3	9.0	9.4	9.9	11.0	11.7	12.7	13.8	16.2	33.4

Canada Study Phase 1 Data Quality Control

Data Quality Table 20: Cleaned Analysis Sample
FB Steering Wheel Movements Distribution

	Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	51283	4.0	5.0	5.0	5.0	6.0	6.0	6.0	7.0	7.0	8.0	14.0
2	131890	0.0	0.0	1.0	2.0	2.0	3.0	3.0	4.0	4.0	6.0	28.0
4	160402	8.0	9.0	9.0	10.0	10.0	10.0	10.0	11.0	11.0	12.0	25.0
5	18969	0.0	0.0	0.0	0.0	1.0	2.0	3.0	11.0	11.0	15.0	30.0
6	35984	5.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0	11.0
7	128588	9.0	10.0	11.0	11.0	11.0	12.0	12.0	12.0	13.0	14.0	22.0
8	107403	12.0	13.0	14.0	14.0	14.0	14.0	15.0	15.0	16.0	18.0	44.0
10	274781	11.0	12.0	12.0	12.0	13.0	13.0	14.0	14.0	15.0	17.0	30.0
11	142818	8.0	10.0	10.0	10.0	11.0	11.0	11.0	12.0	12.0	13.0	24.0
12	49527	1.0	5.0	9.0	12.0	14.0	18.0	20.0	21.0	22.0	26.0	45.0
13	126580	8.0	9.0	9.0	10.0	10.0	10.0	11.0	11.0	12.0	13.0	22.0
15	199487	10.0	11.0	12.0	12.0	12.0	12.0	13.0	13.0	14.0	15.0	27.0
17	23433	8.0	9.0	9.0	10.0	10.0	10.0	11.0	11.0	12.0	13.0	19.0
18	173511	10.0	11.0	12.0	12.0	13.0	13.0	14.0	14.0	15.0	16.0	27.0
19	17241	2.0	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	9.0	20.0
21	197442	10.0	11.0	12.0	12.0	13.0	13.0	14.0	14.0	15.0	16.0	31.0
22	164069	7.0	9.0	10.0	10.0	10.0	11.0	11.0	12.0	12.0	14.0	37.0
23	0	.	.	.	.	.	.	.	.	.	.	.
25	136953	6.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0	11.0	12.0	30.0
26	87806	10.0	12.0	12.0	13.0	13.0	14.0	14.0	15.0	15.0	16.0	25.0
Total/Mean	2228167	6.8	8.2	8.8	9.3	9.8	10.3	10.8	11.7	12.3	13.8	26.9

Canada Study Phase 1 Data Quality Control

Data Quality Table 21: Cleaned Analysis Sample
Wheel Movements Summary (unweighted by record duration)

	No Feedback						Feedback					
Driver	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**
1	0	.	.	.	.	.	0	.	.	.	.	.
2	0	.	.	.	.	.	0	.	.	.	.	.
4	0	.	.	.	.	.	0	.	.	.	.	.
5	66564	179.7	3.0	180.0	163.0	188.0	18969	182.3	2.1	183.0	171.0	188.0
6	0	.	.	.	.	.	0	.	.	.	.	.
7	0	.	.	.	.	.	0	.	.	.	.	.
8	118854	171.8	6.8	173.0	129.0	184.0	107403	181.5	3.2	182.0	145.0	187.0
10	272512	186.1	2.8	187.0	149.0	193.0	274781	186.2	2.5	186.0	158.0	194.0
11	0	.	.	.	.	.	0	.	.	.	.	.
12	11105	182.2	3.4	182.0	167.0	190.0	49527	184.9	2.4	185.0	164.0	192.0
13	107490	167.1	4.3	168.0	64.0	178.0	126580	172.2	4.1	173.0	75.0	183.0
15	178800	188.7	2.1	189.0	168.0	195.0	199487	189.4	2.2	190.0	167.0	195.0
17	62833	173.8	3.3	174.0	91.0	183.0	23433	174.7	3.3	176.0	137.0	182.0
18	361800	189.9	2.3	190.0	164.0	196.0	173511	190.2	2.6	191.0	165.0	196.0
19	18620	186.7	2.9	187.0	160.0	192.0	17241	183.7	4.0	184.0	154.0	191.0
21	171890	190.2	2.2	191.0	168.0	196.0	197442	190.4	2.3	191.0	171.0	197.0
22	166040	175.5	3.3	176.0	84.0	184.0	164069	175.9	4.4	176.0	87.0	187.0
23	14716	183.7	2.7	184.0	169.0	191.0	19338	187.5	2.8	188.0	160.0	193.0
25	102015	175.0	4.5	176.0	78.0	186.0	136953	177.3	4.5	178.0	82.0	187.0
26	244947	191.6	2.1	192.0	166.0	197.0	87806	191.3	2.3	192.0	170.0	197.0
		181.6		182.1	137.1	189.5		183.4		183.9	143.3	190.6

Canada Study Phase 1 Data Quality Control

Data Quality Table 22: Cleaned Analysis Sample
NF Wheel Movements Distribution

	No Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	0	.	.	.	.	.	.	.	.	.	.	.
2	0	.	.	.	.	.	.	.	.	.	.	.
4	0	.	.	.	.	.	.	.	.	.	.	.
5	66564	163.0	176.0	178.0	179.0	180.0	180.0	181.0	182.0	182.0	183.0	188.0
6	0	.	.	.	.	.	.	.	.	.	.	.
7	0	.	.	.	.	.	.	.	.	.	.	.
8	118854	129.0	162.0	166.0	168.0	171.0	173.0	175.0	176.0	178.0	179.0	184.0
10	272512	149.0	183.0	185.0	185.0	186.0	187.0	187.0	187.0	188.0	189.0	193.0
11	0	.	.	.	.	.	.	.	.	.	.	.
12	11105	167.0	178.0	179.0	180.0	181.0	182.0	183.0	184.0	186.0	187.0	190.0
13	107490	64.0	161.0	164.0	166.0	167.0	168.0	169.0	170.0	170.0	172.0	178.0
15	178800	168.0	187.0	187.0	188.0	189.0	189.0	189.0	190.0	190.0	191.0	195.0
17	62833	91.0	170.0	172.0	173.0	174.0	174.0	175.0	176.0	176.0	177.0	183.0
18	361800	164.0	187.0	189.0	189.0	190.0	190.0	191.0	191.0	192.0	192.0	196.0
19	18620	160.0	183.0	185.0	186.0	187.0	187.0	188.0	188.0	189.0	190.0	192.0
21	171890	168.0	188.0	189.0	190.0	190.0	191.0	191.0	191.0	192.0	192.0	196.0
22	166040	84.0	172.0	173.0	174.0	175.0	176.0	177.0	177.0	178.0	179.0	184.0
23	14716	169.0	180.0	182.0	183.0	183.0	184.0	185.0	185.0	186.0	187.0	191.0
25	102015	78.0	170.0	172.0	174.0	175.0	176.0	177.0	177.0	178.0	180.0	186.0
26	244947	166.0	189.0	190.0	191.0	191.0	192.0	192.0	193.0	193.0	194.0	197.0
Total/Mean	1898186	137.1	177.6	179.4	180.4	181.4	182.1	182.9	183.4	184.1	185.1	189.5

Canada Study Phase 1 Data Quality Control

Data Quality Table 23: Cleaned Analysis Sample
FB Wheel Movements Distribution

	Feedback											
Driver	N	Min	10.0%	20%	30%	40%	50%	60%	70%	80%	90%	Max
1	0	.	.	.	.	.	.	.	.	.	.	.
2	0	.	.	.	.	.	.	.	.	.	.	.
4	0	.	.	.	.	.	.	.	.	.	.	.
5	18969	171.0	180.0	181.0	181.0	182.0	183.0	183.0	183.0	184.0	185.0	188.0
6	0	.	.	.	.	.	.	.	.	.	.	.
7	0	.	.	.	.	.	.	.	.	.	.	.
8	107403	145.0	178.0	180.0	181.0	182.0	182.0	183.0	183.0	184.0	185.0	187.0
10	274781	158.0	184.0	185.0	185.0	186.0	186.0	187.0	187.0	188.0	189.0	194.0
11	0	.	.	.	.	.	.	.	.	.	.	.
12	49527	164.0	182.0	183.0	184.0	184.0	185.0	185.0	186.0	187.0	188.0	192.0
13	126580	75.0	167.0	169.0	171.0	172.0	173.0	174.0	175.0	176.0	177.0	183.0
15	199487	167.0	187.0	188.0	189.0	189.0	190.0	190.0	191.0	191.0	192.0	195.0
17	23433	137.0	170.0	172.0	173.0	175.0	176.0	176.0	177.0	177.0	178.0	182.0
18	173511	165.0	187.0	189.0	189.0	190.0	191.0	191.0	192.0	192.0	193.0	196.0
19	17241	154.0	178.0	180.0	182.0	183.0	184.0	185.0	186.0	187.0	188.0	191.0
21	197442	171.0	188.0	189.0	190.0	190.0	191.0	191.0	192.0	192.0	193.0	197.0
22	164069	87.0	171.0	173.0	174.0	175.0	176.0	177.0	178.0	179.0	181.0	187.0
23	19338	160.0	184.0	185.0	187.0	187.0	188.0	189.0	189.0	190.0	190.0	193.0
25	136953	82.0	172.0	174.0	176.0	177.0	178.0	179.0	180.0	181.0	182.0	187.0
26	87806	170.0	188.0	190.0	190.0	191.0	192.0	192.0	193.0	193.0	194.0	197.0
Total/Mean	1596540	143.3	179.7	181.3	182.3	183.1	183.9	184.4	185.1	185.8	186.8	190.6

Canada Study Phase 1 Data Quality Control

Data Quality Table 24: Clean Analysis Sample
Ambient Light (unweighted by record duration)

	No Feedback						Feedback					
Driver	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**
1	89424	98.1	65.6	138.0	0.0	163.0	51283	129.2	41.6	142.0	0.0	174.0
2	130500	94.3	76.5	151.0	0.0	177.0	131890	106.0	74.5	157.0	0.0	179.0
4	182506	124.5	49.2	143.0	0.0	168.0	160402	130.1	41.0	142.0	0.0	176.0
5	66564	109.3	73.3	156.0	0.0	174.0	18969	134.8	56.2	159.0	0.0	170.0
6	64301	66.9	68.6	0.0	0.0	165.0	35984	89.4	70.6	138.0	0.0	159.0
7	115930	84.9	70.9	138.0	0.0	171.0	128588	94.0	66.3	141.0	0.0	170.0
8	118854	112.4	61.6	146.0	0.0	167.0	107403	125.0	52.6	147.0	0.0	164.0
10	272512	110.2	62.0	143.0	0.0	165.0	274781	114.2	57.9	141.0	0.0	173.0
11	19926	0.0	0.1	0.0	0.0	2.0	142818	123.0	54.9	149.0	0.0	170.0
12	11105	140.0	37.0	150.0	0.0	168.0	49527	152.6	5.6	153.0	128.0	216.0
13	0	.	.	.	.	.	0	.	.	.	.	.
15	178800	123.4	53.9	146.0	0.0	211.0	199487	124.1	53.2	146.0	0.0	173.0
17	62833	125.0	48.6	143.0	0.0	170.0	23433	141.9	6.8	143.0	128.0	168.0
18	361800	105.0	61.1	134.0	0.0	169.0	173511	119.7	52.1	138.0	0.0	182.0
19	18620	91.3	76.0	151.0	0.0	171.0	17241	119.9	62.2	151.0	0.0	221.0
21	171890	101.3	62.3	135.0	0.0	165.0	197442	87.6	68.7	132.0	0.0	222.0
22	166040	121.5	55.7	147.0	0.0	197.0	164069	116.7	60.1	148.0	0.0	182.0
23	14716	127.3	58.6	154.0	0.0	171.0	19338	106.4	70.5	152.0	0.0	177.0
25	102015	112.8	61.0	146.0	0.0	168.0	136953	102.1	66.7	145.0	0.0	175.0
26	244947	86.8	68.6	129.0	0.0	166.0	87806	84.6	70.4	132.0	0.0	167.0
Mean		101.8		128.9				115.9		145.1		

Canada Study Phase 1 Data Quality Control

Data Quality Table 25: Cleaned Analysis Sample
PERCLOS Camera Summary (where daylight=0) (unweighted by record duration)

	No Feedback						Feedback					
Driver	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	0	.	.	.	.	.	0	.	.	.	.	.
2	26268	1.2	2.3	0.0	0.0	37.0	45195	2.5	6.3	2.0	0.0	100.0
4	10862	6.2	5.4	5.0	0.0	36.0	14282	9.0	7.0	8.0	0.0	42.0
5	20826	5.4	5.9	4.0	0.0	49.0	2768	6.6	4.8	5.0	0.0	28.0
6	32851	0.5	1.6	0.0	0.0	27.0	13717	0.4	1.2	0.0	0.0	11.0
7	48603	7.5	7.5	6.0	0.0	74.0	50562	8.7	12.6	5.0	0.0	93.0
8	28990	5.4	7.2	3.0	0.0	60.0	16245	4.5	8.6	2.0	0.0	87.0
10	50939	8.9	6.3	8.0	0.0	52.0	57148	9.2	11.2	6.0	0.0	87.0
11	19926	3.8	5.1	2.0	0.0	44.0	28241	1.7	2.9	0.0	0.0	31.0
12	708	2.3	2.8	2.0	0.0	11.0	0	.	.	.	.	.
13	0	.	.	.	.	.	0	.	.	.	.	.
15	29008	4.4	4.3	4.0	0.0	42.0	31712	3.9	3.5	3.0	0.0	38.0
17	8654	5.5	3.9	5.0	0.0	21.0	0	.	.	.	.	.
18	92462	6.2	5.2	5.0	0.0	59.0	25296	6.4	4.7	6.0	0.0	50.0
19	7683	12.0	13.2	7.0	0.0	79.0	3831	3.2	7.2	0.0	0.0	42.0
21	49521	5.0	5.0	4.0	0.0	49.0	79370	5.7	6.7	4.0	0.0	69.0
22	23816	8.5	14.3	2.0	0.0	79.0	40350	1.7	5.5	0.0	0.0	63.0
23	2754	7.5	10.3	2.0	0.0	49.0	6198	6.7	13.1	0.0	0.0	74.0
25	25283	9.0	9.4	7.0	0.0	73.0	46252	5.8	7.4	4.0	0.0	65.0
26	95283	14.8	30.2	3.0	0.0	100.0	36427	4.3	5.5	3.0	0.0	54.0
Mean		6.3		3.8				5.0		3.0		

Canada Study Phase 1 Data Quality Control

Data Quality Table 26: Cleaned Analysis Sample
NF PERCLOS Camera (where daylight=0) Distribution (unweighted by duration)

	No Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	0	.	.	.	.	.	.	.	.	.	.	.
2	26268	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	3.0	37.0
4	10862	0.0	0.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	14.0	36.0
5	20826	0.0	0.0	0.0	2.0	3.0	4.0	5.0	7.0	9.0	13.0	49.0
6	32851	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	27.0
7	48603	0.0	2.0	2.0	4.0	5.0	6.0	7.0	9.0	11.0	15.0	74.0
8	28990	0.0	0.0	0.0	2.0	2.0	3.0	4.0	6.0	9.0	14.0	60.0
10	50939	0.0	2.0	4.0	5.0	6.0	8.0	9.0	11.0	13.0	17.0	52.0
11	19926	0.0	0.0	0.0	0.0	2.0	2.0	3.0	4.0	6.0	9.0	44.0
12	708	0.0	0.0	0.0	0.0	1.0	2.0	2.0	3.0	3.0	7.0	11.0
13	0	.	.	.	.	.	.	.	.	.	.	.
15	29008	0.0	0.0	2.0	2.0	3.0	4.0	4.0	5.0	7.0	9.0	42.0
17	8654	0.0	0.0	2.0	4.0	4.0	5.0	6.0	7.0	8.0	11.0	21.0
18	92462	0.0	0.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	59.0
19	7683	0.0	0.0	2.0	3.0	5.0	7.0	11.0	16.0	21.0	29.0	79.0
21	49521	0.0	0.0	2.0	2.0	3.0	4.0	5.0	6.0	8.0	11.0	49.0
22	23816	0.0	0.0	0.0	0.0	0.0	2.0	3.0	8.0	15.0	28.0	79.0
23	2754	0.0	0.0	0.0	0.0	0.0	2.0	5.0	10.0	15.0	25.0	49.0
25	25283	0.0	0.0	0.0	3.0	5.0	7.0	9.0	11.0	15.0	21.0	73.0
26	95283	0.0	0.0	0.0	2.0	2.0	3.0	5.0	7.0	11.0	100.0	100.0
Total/Mean	574437	0.0	0.2	1.0	1.9	2.7	3.8	5.1	7.1	9.6	18.9	52.3

Canada Study Phase 1 Data Quality Control

Data Quality Table 27: Cleaned Analysis Sample
FB PERCLOS Camera (where daylight=0) Distribution (unweighted by duration)

	Feedback											
Driver	**N**	**Min**	**10.0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**	**80%**	**90%**	**Max**
1	0	.	.	.	.	.	.	.	.	.	.	.
2	45195	0.0	0.0	0.0	0.0	2.0	2.0	2.0	3.0	4.0	5.0	100.0
4	14282	0.0	2.0	3.0	5.0	6.0	8.0	9.0	11.0	14.0	18.0	42.0
5	2768	0.0	2.0	3.0	3.0	4.0	5.0	7.0	8.0	10.0	14.0	28.0
6	13717	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	11.0
7	50562	0.0	0.0	2.0	3.0	4.0	5.0	6.0	8.0	11.0	17.0	93.0
8	16245	0.0	0.0	0.0	2.0	2.0	2.0	3.0	4.0	6.0	11.0	87.0
10	57148	0.0	0.0	2.0	3.0	5.0	6.0	8.0	10.0	14.0	20.0	87.0
11	28241	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	3.0	4.0	31.0
12	0	.	.	.	.	.	.	.	.	.	.	.
13	0	.	.	.	.	.	.	.	.	.	.	.
15	31712	0.0	0.0	2.0	2.0	3.0	3.0	4.0	5.0	6.0	8.0	38.0
17	0	.	.	.	.	.	.	.	.	.	.	.
18	25296	0.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	10.0	12.0	50.0
19	3831	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.0	12.0	42.0
21	79370	0.0	0.0	2.0	2.0	3.0	4.0	5.0	6.0	9.0	13.0	69.0
22	40350	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	63.0
23	6198	0.0	0.0	0.0	0.0	0.0	0.0	2.0	3.0	11.0	23.0	74.0
25	46252	0.0	0.0	0.0	0.0	2.0	4.0	5.0	7.0	10.0	14.0	65.0
26	36427	0.0	0.0	0.0	2.0	2.0	3.0	4.0	5.0	7.0	10.0	54.0
Total/Mean	497594	0.0	0.4	1.1	1.6	2.4	3.0	4.0	5.1	7.4	11.7	58.4

Canada Study Phase 1 Data Quality Control

Data Quality Table 28: No Records Excluded
APP On/Off Sensor Status (Numbers of Records)

	No Feedback						Feedback					
	HPCS		S/T Not Calib.		Day Light		HPCS		S/T Not Calib.		Day Light	
Driver	0	1	0	1	0	1	0	1	0	1	0	1
1	.	.	.	.	.	.	.	.	.	.	.	.
2	94087	.	93964	123	35787	58300	168466	.	168215	251	57415	111051
3	.	.	.	.	.	.	175736	.	175390	346	159822	15914
4	52599	53461	105992	68	14477	91583	6045	202231	208189	87	17868	190408
5	80424	.	80415	9	22999	57425	21864	.	21851	13	3112	18752
6	73978	6862	80811	29	38670	42170	3427	38242	41662	7	14360	27309
7	133651	.	129327	4324	54408	79243	158834	.	158780	54	59603	99231
8	103547	38858	142372	33	34487	107918	30454	89263	119684	33	17323	102394
9	192808	.	171317	21491	58220	134588	.	.	.	.	.	.
10	314231	.	297828	16403	56913	257318	2	325982	325977	7	67487	258497
11	25671	.	22548	3123	23999	1672	176275	.	175708	567	32805	143470
12	17452	.	17328	124	975	16477	65530	.	65530	.	222	65308
13	152794	.	1352	151442	1385	151409	160736	.	160423	313	40030	120706
15	240627	1690	242252	65	38591	203726	243188	1531	244443	276	36454	208265
17	112510	.	112505	5	15595	96915	31842	.	31839	3	267	31575
18	402242	29301	431493	50	111166	320377	23064	178141	196452	4753	27811	173394
19	29544	.	29544	.	9187	20357	29217	.	28693	524	6485	22732
20	23556	.	23498	58	8012	15544	.	.	.	.	.	.
21	217771	1383	219153	1	61041	158113	137154	111067	244305	3916	98527	149694
22	213601	.	198946	14655	32404	181197	216471	.	216201	270	49796	166675
23	33076	.	33054	22	4531	28545	40362	.	40362	.	10359	30003
24	167	.	167	.	.	167	1	.	1	.	1	.
25	131649	.	131489	160	29676	101973	174694	.	174502	192	58079	116615
26	284764	29068	313351	481	116660	197172	.	112228	112122	106	43942	68286
27	1683	.	1677	6	4	1679	220	.	.	220	.	220
28	.	.	.	.	.	.	13326	.	12978	348	6118	7208
Total	2932432	160623	2880383	212672	769187	2323868	1876908	1058685	2923307	12286	807886	2127707

Canada Study Phase 1 Data Quality Control

Data Quality Table 28: No Records Excluded (Continued)
APP On/Off Sensor Status (Numbers of Records)

	No Feedback						Feedback					
	Memo Error		Foot Brake				Memo Error		Foot Brake			
Driver	0	1	0	1			0	1	0	1		
1	.	.	.	.			.	.	.	.		
2	94082	5	89859	4228			168466	.	161652	6814		
3	.	.	.	.			175726	10	169010	6726		
4	106059	1	101719	4341			208274	2	200620	7656		
5	80420	4	77757	2667			21864	.	21238	626		
6	80840	.	78419	2421			41669	.	40766	903		
7	133650	1	128403	5248			158834	.	149798	9036		
8	142403	2	136383	6022			119717	.	116643	3074		
9	192807	1	183077	9731			.	.	.	.		
10	314231	.	301261	12970			325984	.	310452	15532		
11	25669	2	24667	1004			176275	.	167676	8599		
12	17452	.	16132	1320			65530	.	61738	3792		
13	152794	.	142814	9980			160736	.	153929	6807		
15	242317	.	226902	15415			244719	.	232147	12572		
17	112510	.	105062	7448			31842	.	30639	1203		
18	431543	.	410101	21442			201205	.	192468	8737		
19	29544	.	27551	1993			29217	.	26609	2608		
20	23556	.	22416	1140			.	.	.	.		
21	219154	.	209101	10053			248221	.	236178	12043		
22	213601	.	199339	14262			216471	.	195155	21316		
23	33075	1	29703	3373			40362	.	36258	4104		
24	167	.	149	18			1	.	1	.		
25	131649	.	120529	11120			174694	.	161691	13003		
26	313832	.	295981	17851			112228	.	105922	6306		
27	1683	.	1430	253			220	.	213	7		
28	.	.	.	.			13326	.	11448	1878		
Total	3093038	17	2928755	164300			2935581	12	2782251	153342		

Canada Study Phase 1 Data Quality Control

Data Quality Table 29: Cleaned Analysis Sample
APP On/Off Sensor Status (Numbers of Records)

	No Feedback						Feedback					
	HPCS		S/T Not Calib.		Day Light		HPCS		S/T Not Calib.		Day Light	
Driver	0	1	0	1	0	1	0	1	0	1	0	1
1	.	.	.	.	.	.	.	.	.	.	.	.
2	64989	.	64956	33	26268	38721	131890	.	131887	3	45195	86695
4	37454	43046	80452	48	10862	69638	3919	156483	160402	.	14282	146120
5	66564	.	66555	9	20826	45738	18969	.	18956	13	2768	16201
6	58564	5737	64276	25	32851	31450	2380	33604	35977	7	13717	22267
7	115930	.	112685	3245	48603	67327	128588	.	128546	42	50562	78026
8	84131	34723	118854	.	28990	89864	20139	87264	107403	.	16245	91158
10	272512	.	257337	15175	50939	221573	.	274781	274781	.	57148	217633
11	19926	.	17552	2374	19926	.	142818	.	142614	204	28241	114577
12	11105	.	11105	.	708	10397	49527	.	49527	.	.	49527
13	107490	.	217	107273	.	.	126580	.	126320	260	.	.
15	178057	743	178796	4	29008	149792	197956	1531	199233	254	31712	167775
17	62833	.	62833	.	8654	54179	23433	.	23430	3	.	23433
18	336279	25521	361786	14	92462	269338	19810	153701	170155	3356	25296	148215
19	18620	.	18620	.	7683	10937	17241	.	17173	68	3831	13410
21	171034	856	171890	.	49521	122369	102245	95197	194749	2693	79370	118072
22	166040	.	158337	7703	23816	142224	164069	.	163806	263	40350	123719
23	14716	.	14694	22	2754	11962	19338	.	19338	.	6198	13140
25	102015	.	101868	147	25283	76732	136953	.	136785	168	46252	90701
26	220759	24188	244531	416	95283	149664	.	87806	87742	64	36427	51379
Total	2109018	134814	2107344	136488	574437	1561905	1305855	890367	2188824	7398	497594	1572048

Canada Study Phase 1 Data Quality Control

Data Quality Table 29: Cleaned Analysis Sample (Continued)
APP On/Off Sensor Status (Numbers of Records)

	No Feedback						Feedback					
	Memo Error		Foot Brake				Memo Error		Foot Brake			
Driver	0	1	0	1			0	1	0	1		
1	.	.	.	.			.	.	.	.		
2	64989	.	63644	1345			131890	.	129914	1976		
4	80500	.	79843	657			160402	.	159299	1103		
5	66560	4	66041	523			18969	.	18844	125		
6	64301	.	63966	335			35984	.	35808	176		
7	115930	.	113577	2353			128588	.	125186	3402		
8	118854	.	116937	1917			107403	.	106442	961		
10	272512	.	267548	4964			274781	.	269656	5125		
11	19926	.	19714	212			142818	.	139674	3144		
12	11105	.	10764	341			49527	.	48539	988		
13	107490	.	105267	2223			126580	.	124939	1641		
15	178800	.	175029	3771			199487	.	194867	4620		
17	62833	.	61553	1280			23433	.	23098	335		
18	361800	.	356299	5501			173511	.	171071	2440		
19	18620	.	18282	338			17241	.	16683	558		
21	171890	.	169416	2474			197442	.	194458	2984		
22	166040	.	161446	4594			164069	.	155735	8334		
23	14716	.	14178	538			19338	.	18497	841		
25	102015	.	97385	4630			136953	.	132452	4501		
26	244947	.	239838	5109			87806	.	86370	1436		
Total	2243828	4	2200727	43105			2196222	0	2151532	44690		

Canada Study Phase 1 Data Quality Control

Data Quality Table 30: Cleaned Analysis Sample
Vehicle Speed (converted to mph) (unweighted by record duration)

	No Feedback						Feedback					
Driver	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**
1	89424	56.6	8.8	61.4	30.4	70.1	51283	58.1	7.6	61.4	30.4	68.2
2	130500	57.1	8.0	60.8	30.4	73.8	131890	58.6	6.5	61.4	30.4	70.1
4	182506	59.0	6.6	61.4	30.4	68.2	160402	59.0	6.8	61.4	30.4	67.0
5	66564	57.8	6.7	61.4	30.4	67.6	18969	59.3	5.2	61.4	30.4	65.1
6	64301	56.0	7.0	58.9	30.4	73.2	35984	57.9	6.1	60.8	30.4	70.7
7	115930	57.9	6.6	61.4	30.4	73.2	128588	56.5	7.7	60.8	30.4	71.3
8	118854	57.9	7.3	61.4	30.4	78.1	107403	60.0	4.8	61.4	30.4	72.5
10	272512	58.5	6.3	61.4	30.4	68.2	274781	58.6	6.3	61.4	30.4	69.4
11	19926	58.6	6.4	61.4	30.4	65.1	142818	58.0	6.4	61.4	30.4	71.9
12	11105	53.4	8.2	57.7	30.4	63.2	49527	56.5	6.8	59.5	30.4	66.3
13	107490	57.5	7.5	60.8	30.4	70.1	126580	58.9	6.2	61.4	30.4	70.7
15	178800	56.9	7.6	61.4	30.4	69.4	199487	57.6	7.4	61.4	30.4	73.2
17	62833	54.7	8.7	58.3	30.4	65.7	23433	58.4	6.1	61.4	30.4	67.6
18	361800	56.9	7.7	61.4	30.4	67.0	173511	56.8	7.9	61.4	30.4	65.1
19	18620	58.0	7.8	61.4	30.4	67.6	17241	55.4	9.7	61.4	30.4	67.6
21	171890	58.2	7.6	61.4	30.4	70.1	197442	58.2	8.2	61.4	30.4	70.7
22	166040	58.0	6.7	61.4	30.4	71.3	164069	56.1	8.1	60.8	30.4	76.9
23	14716	53.7	9.9	58.9	30.4	67.0	19338	53.1	9.6	56.4	30.4	67.0
25	102015	55.5	8.8	60.8	30.4	70.1	136953	56.9	8.0	61.4	30.4	69.4
26	244947	57.9	8.9	61.4	30.4	74.4	87806	58.2	9.0	61.4	30.4	70.1
Mean		57.0		60.7				57.6		60.9		

Data Quality Table 31: Cleaned Analysis
Engine Rotation (unweighted by record

	No						Feedbac					
Drive	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	8942	1472.	140.	1540.	680.	1960.	5128	1498.	120.	1560.	700.	1940.
2	13050	1493.	120.	1540.	680.	1920.	13189	1508.	99.3	1540.	660.	1800.
4	18250	1516.	90.9	1540.	580.	1940.	16040	1518.	91.4	1540.	580.	1920.
5	6656	1514.	91.4	1540.	680.	1980.	1896	1517.	78.0	1540.	740.	1860.
6	6430	1445.	137.	1500.	620.	1860.	3598	1484.	120.	1540.	700.	1900.
7	11593	1496.	105.	1540.	640.	2020.	12858	1474.	122.	1540.	720.	1960.
8	11885	1499.	115.	1540.	580.	2100.	10740	1529.	74.2	1540.	580.	2000.
10	27251	1492.	115.	1540.	580.	1920.	27478	1493.	115.	1540.	580.	1940.
11	1992	1518.	95.2	1560.	720.	1800.	14281	1484.	123.	1540.	580.	2100.
12	1110	1384.	148.	1460.	660.	1580.	4952	1458.	117.	1500.	680.	1660.
13	10749	1481.	124.	1540.	580.	1840.	12658	1508.	102.	1540.	580.	1820.
15	17880	1479.	117.	1540.	580.	1840.	19948	1499.	106.	1540.	580.	1840.
17	6283	1427.	152.	1480.	680.	1900.	2343	1490.	117.	1540.	580.	1780.
18	36180	1469.	135.	1540.	560.	1940.	17351	1472.	131.	1540.	580.	1940.
19	1862	1498.	144.	1560.	680.	2000.	1724	1465.	163.	1540.	660.	1960.
21	17189	1499.	128.	1540.	580.	1800.	19744	1505.	140.	1540.	580.	1780.
22	16604	1487.	126.	1540.	580.	1920.	16406	1461.	143.	1540.	580.	2000.
23	1471	1430.	176.	1520.	660.	2000.	1933	1434.	163.	1520.	600.	1940.
25	10201	1447.	157.	1540.	580.	1820.	13695	1463.	151.	1540.	580.	1840.
26	24494	1510.	151.	1540.	580.	2100.	8780	1514.	158.	1540.	580.	2020.
Mea		1478.		1532.				1489.		1538.		

Canada Study Phase 1 Data Quality Control

Data Quality Table 32: Cleaned Analysis Sample
"X" Longitudinal Acceleration (unweighted by record duration)

	No Feedback						Feedback					
Driver	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**	**N**	**Mean**	**Std**	**Med**	**Min**	**Max**
1	89424	0.039	0.039	0.040	-0.550	0.610	51283	0.042	0.037	0.040	-0.360	0.300
2	130500	0.076	0.042	0.080	-0.350	0.480	131890	0.090	0.043	0.090	-0.420	0.440
4	182506	-0.014	0.034	-0.020	-0.360	0.280	160402	-0.006	0.036	-0.010	-0.370	0.320
5	66564	0.090	0.040	0.090	-0.260	0.390	18969	0.091	0.036	0.090	-0.190	0.340
6	64301	0.046	0.035	0.050	-0.260	0.540	35984	0.043	0.036	0.040	-0.290	0.340
7	115930	0.006	0.037	0.000	-1.210	0.240	128588	-0.001	0.038	0.000	-1.190	0.310
8	118854	0.004	0.039	0.000	-0.310	0.330	107403	0.024	0.040	0.020	-0.380	0.280
10	272512	0.024	0.045	0.020	-0.390	0.460	274781	0.032	0.043	0.030	-0.570	0.460
11	19926	0.092	0.089	0.060	-0.220	0.430	142818	-0.014	0.033	-0.010	-0.320	1.250
12	11105	0.099	0.038	0.100	-0.200	0.300	49527	0.098	0.037	0.100	-0.220	0.370
13	107490	-0.010	0.046	-0.010	-0.390	1.270	126580	-0.018	0.037	-0.020	-1.240	0.380
15	178800	0.044	0.042	0.040	-0.280	0.530	199487	0.064	0.042	0.060	-0.360	0.460
17	62833	-0.024	0.033	-0.020	-1.280	1.250	23433	-0.040	0.035	-0.040	-0.300	0.140
18	361800	0.283	0.244	0.170	-0.260	1.040	173511	0.612	0.047	0.610	0.240	0.980
19	18620	0.090	0.041	0.090	-0.290	0.400	17241	0.088	0.044	0.090	-0.300	0.430
21	171890	0.589	0.043	0.590	0.240	0.920	197442	0.576	0.042	0.580	0.010	1.010
22	166040	0.330	0.039	0.330	-0.700	0.690	164069	0.325	0.043	0.320	-0.730	0.700
23	14716	0.085	0.046	0.090	-0.220	0.320	19338	0.083	0.046	0.080	-0.440	0.350
25	102015	0.311	0.046	0.310	-0.760	0.720	136953	-0.275	0.313	-0.430	-0.880	0.720
26	244947	0.565	0.046	0.560	0.120	0.880	87806	0.544	0.044	0.540	-0.040	0.830
Mean		0.136		0.129				0.118		0.109		

Canada Study Phase 1 Data Quality Control

Data Quality Table 33: Cleaned Analysis Sample
"Y" Lateral Acceleration (unweighted by record duration)

	No Feedback						Feedback					
Driver	N	Mean	Std	Med	Min	Max	N	Mean	Std	Med	Min	Max
1	89424	0.094	0.038	0.100	-0.250	0.660	51283	0.082	0.037	0.080	-0.260	0.390
2	130500	0.038	0.041	0.040	-0.280	0.340	131890	0.045	0.038	0.050	-0.320	0.310
4	182506	-0.021	0.036	-0.020	-0.380	0.250	160402	-0.019	0.037	-0.020	-0.400	0.260
5	66564	0.047	0.037	0.050	-0.210	0.290	18969	0.047	0.036	0.050	-0.260	0.280
6	64301	0.070	0.034	0.070	-0.210	0.330	35984	0.053	0.036	0.050	-0.320	0.400
7	115930	0.049	0.039	0.050	-1.210	0.450	128588	0.068	0.039	0.070	-0.240	0.380
8	118854	-0.003	0.038	0.000	-0.370	0.260	107403	0.017	0.034	0.020	-0.350	0.290
10	272512	0.016	0.041	0.020	-0.310	0.340	274781	0.026	0.038	0.030	-0.290	0.360
11	19926	0.118	0.104	0.070	-0.290	0.500	142818	0.070	0.034	0.070	-1.140	0.350
12	11105	0.052	0.041	0.050	-0.230	0.380	49527	0.052	0.040	0.050	-0.320	0.400
13	107490	0.087	0.060	0.080	-1.100	0.600	126580	0.088	0.047	0.080	-1.090	0.500
15	178800	0.044	0.037	0.040	-0.300	0.310	199487	0.054	0.038	0.060	-0.300	0.380
17	62833	0.077	0.034	0.080	-1.260	0.310	23433	0.096	0.029	0.100	-0.100	0.250
18	361800	-0.159	0.365	0.050	-1.070	0.340	173511	-0.812	0.042	-0.810	-1.070	-0.520
19	18620	0.049	0.040	0.050	-0.270	0.240	17241	0.042	0.043	0.040	-0.340	0.400
21	171890	-0.843	0.043	-0.840	-1.150	-0.480	197442	-0.860	0.039	-0.860	-1.230	-0.400
22	166040	-0.654	0.057	-0.650	-0.990	0.180	164069	-0.736	0.048	-0.740	-1.100	-0.040
23	14716	0.042	0.043	0.040	-0.310	0.310	19338	0.038	0.046	0.040	-0.330	0.290
25	102015	-0.747	0.053	-0.750	-1.030	-0.080	136953	-0.614	0.094	-0.590	-1.040	0.310
26	244947	-0.878	0.047	-0.880	-1.190	-0.510	87806	-0.908	0.042	-0.910	-1.190	-0.570
Mean		-0.126		-0.118				-0.158		-0.157		

Data Quality Table 34: Safe Track Events by Driver and Condition

			Safe Track Event Types																			
Driver	Equipment	F/B	0	1	2	3	4	5	6	7	8	9	11	13	14	16	17	19	20	21	23	Sum of Record Durations
1	Truck #1868: Volvo	0	87603	.	.	.	152	161	25	17	.	1	.	69	126	.	63	1126	.	81	.	36:27:00
1	Truck #1868: Volvo	1	50400	.	.	.	53	62	10	12	.	1	.	39	63	.	47	545	2	49	.	18:23
2	Truck #1740: Volvo	0	127808	.	1	.	212	166	202	39	.	.	12	87	160	.	175	1516	1	121	.	48:42:00
2	Truck #1740: Volvo	1	128942	.	.	.	216	188	191	44	.	.	.	141	221	.	154	1706	.	87	.	70:05:00
4	Truck #2330: Freightliner	0	178924	.	.	2	283	216	9	9	.	1	.	155	220	.	343	2338	.	6	.	66:57:00
4	Truck #2330: Freightliner	1	156952	.	.	.	257	234	6	6	.	.	.	160	208	.	226	2347	.	6	.	62:28:00
5	Truck #1740: Volvo	0	65318	.	.	.	83	92	62	46	.	.	8	49	78	.	68	717	.	43	.	25:14:00
5	Truck #1740: Volvo	1	18670	.	.	.	14	16	34	24	.	.	8	23	25	.	19	128	.	8	.	8:01:38
6	Truck #1868: Volvo	0	63578	.	.	.	43	58	22	1	.	4	.	52	66	.	77	378	.	22	.	21:38
6	Truck #1868: Volvo	1	35523	.	.	.	30	37	24	5	.	1	.	29	36	.	38	255	.	6	.	12:34
7	Truck #2051: Freightliner	0	112315	.	.	.	209	132	624	388	.	.	.	80	148	7	101	1924	.	1	1	39:16:00
7	Truck #2051: Freightliner	1	125190	.	.	.	204	109	662	404	.	.	.	95	161	7	116	1638	.	.	2	42:40:00
8	Truck #2330: Freightliner	0	116420	.	.	.	157	151	21	33	.	.	.	89	143	.	140	1689	.	11	.	41:41:00
8	Truck #2330: Freightliner	1	105805	.	.	.	99	103	7	35	.	.	.	107	122	.	135	988	.	2	.	37:35:00
10	Truck #2330: Freightliner	0	267331	.	.	.	302	348	70	158	.	.	.	204	295	.	344	3449	.	11	.	97:51:00
10	Truck #2330: Freightliner	1	269130	.	.	.	339	354	92	222	.	.	.	214	329	.	320	3764	.	16	1	96:37:00
11	Truck #1868: Volvo	0	17362	.	.	5	51	13	14	12	.	.	.	.	22	.	316	2091	.	40	.	7:25:14
11	Truck #1868: Volvo	1	139622	.	.	.	169	218	202	403	.	.	.	129	169	2	136	1764	.	4	.	53:07:00
12	Truck #1740: Volvo	0	10792	.	.	.	16	10	5	3	.	.	.	15	14	.	20	215	.	15	.	4:49:49
12	Truck #1740: Volvo	1	48383	.	.	.	87	66	8	11	.	.	.	53	67	.	74	763	.	15	.	22:01
13	Truck #2051: Freightliner	0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50:25:00
13	Truck #2051: Freightliner	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	47:05:00
15	Truck #2330: Freightliner	0	174794	.	.	.	259	233	15	67	.	.	.	158	233	.	235	2798	.	8	.	68:17:00
15	Truck #2330: Freightliner	1	194568	1	1	4	239	241	51	150	.	.	83	153	247	.	428	3313	.	8	.	75:14:00
17	Truck #2051: Freightliner	0	61365	.	.	.	97	69	195	311	.	.	.	58	94	.	61	581	.	1	1	23:38
17	Truck #2051: Freightliner	1	22946	.	.	.	34	25	61	135	.	.	.	22	35	1	19	155	.	.	.	8:37:38
18	Truck #2330: Freightliner	0	355255	.	.	.	446	302	271	714	.	.	17	243	415	.	390	3723	.	22	2	126:50:00
18	Truck #2330: Freightliner	1	170369	.	.	.	206	149	112	330	.	.	15	99	190	.	192	1833	1	14	1	59:05:00
19	Truck #1740: Volvo	0	18179	.	.	.	30	31	21	25	.	.	.	16	28	.	17	258	.	15	.	7:41:48
19	Truck #1740: Volvo	1	16729	.	.	.	32	32	32	38	.	.	.	14	21	.	15	304	1	23	.	7:12:37
21	Truck #2330: Freightliner	0	168153	.	.	.	274	241	8	41	.	.	.	149	197	.	231	2587	.	9	.	64:26:00
21	Truck #2330: Freightliner	1	191788	.	.	.	302	281	6	63	.	.	.	174	219	.	280	4318	1	10	.	72:36:00
22	Truck #2051: Freightliner	0	161637	.	1	.	210	165	890	862	.	1	.	149	220	6	249	1642	1	5	2	64:51:00
22	Truck #2051: Freightliner	1	159147	.	.	2	296	178	895	614	.	2	.	97	201	8	363	2261	.	3	2	57:13:00
23	Truck #1740: Volvo	0	14159	.	.	.	44	28	27	80	.	.	19	5	31	.	8	288	.	27	.	5:42:34
23	Truck #1740: Volvo	1	18474	.	.	.	64	59	17	123	.	.	.	10	39	.	23	499	.	30	.	7:51:50
25	Truck #2051: Freightliner	0	89821	.	1	.	168	156	.	.	.	1	.	65	113	.	266	11424	.	.	.	34:10:00
25	Truck #2051: Freightliner	1	128512	.	.	.	207	178	10	57	26	.	184	90	150	.	110	7420	.	9	.	47:37:00
26	Truck #2330: Freightliner	0	211707	1	1	5	721	406	.	.	.	.	165	148	266	.	530	30995	1	1	.	81:06:00
26	Truck #2330: Freightliner	1	75551	.	.	.	153	145	.	.	.	.	9	56	79	.	165	11648	.	.	.	28:16:00
	Total			2	4	11	3523	2686	2596	3543	26	4	492	1548	2545	15	3347	83249	5	177	8	