

December 29, 2017

California Department of Motor Vehicles  
Occupational Licensing Compliance Section  
2415 1st Ave., Mail Station S441  
Sacramento, CA 95818

RE: Autonomous Vehicle Tester Program Annual Disengagement Report

Dear Sir or Madam:

Enclosed please find the disengagement report for Cruise's registered autonomous vehicles. We provide this report as required by California Code of Regulations Title 13, Article 3.7, Section 227.46.

This report covers the period from December 1, 2016 to November 30, 2017. It addresses (a) miles driven in autonomous mode on public roads in California and, during such driving, (b) deactivations of the autonomous mode when a failure of the autonomous technology was detected or when the safe operation of the vehicle required that the autonomous vehicle test driver disengage the autonomous mode and take immediate manual control of the vehicle.

Last year we drove over 125,000 miles on San Francisco's complex city streets. All the attached data is from this urban driving. We drive in San Francisco because it allows us to improve more quickly. Cities like San Francisco contain significantly more people, cars, and cyclists that our self-driving vehicles must be aware of at any given time. That makes San Francisco one of the hardest places to test a self-driving vehicle, and creates a rich environment for testing our object detection, prediction, and response functions. It also helps us validate our vehicles' self-driving skills faster than testing in a suburban location alone. So, we drive here because by doing so we get better faster.

Cruise self-driving vehicles, which are based on the Chevrolet Bolt platform, were used for all testing. Disengagements were immediate when the safe operation of the vehicle required that the autonomous vehicle test driver disengage the autonomous mode and take immediate manual control of the vehicle, and in this reporting period there were no disengagements made as a result of a failure of the autonomous technology.

Please feel free to contact me if you have any questions regarding the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Albert Boniske".

**Albert Boniske**

Director of Product Integrity

<b>Total autonomous miles</b>	
<b>Month and year</b>	<b>Autonomous miles</b>
December 2016	2948.63
January 2017	4729.82
February 2017	4160.15
March 2017	5595.61
April 2017	6908.4
May 2017	8838.12
June 2017	10487.29
July 2017	10442.18
August 2017	14877.2
September 2017	16594.3
October 2017	27576.32
November 2017	18517.92

<b>Autonomous Miles Per Month Per Vehicle</b>												
<b>Car name</b>	<b>2016-12</b>	<b>2017-01</b>	<b>2017-02</b>	<b>2017-03</b>	<b>2017-04</b>	<b>2017-05</b>	<b>2017-06</b>	<b>2017-07</b>	<b>2017-08</b>	<b>2017-09</b>	<b>2017-10</b>	<b>2017-11</b>
oryx			12.04	275.48	249.88	543.57	640.56	529.49	727.20	1,508.30		
marmot			16.08	237.44	223.82	615.63	708.03	592.5	691.77	251.09		
macaw	229.06	332.32	390.3	255.64	465.65	618.04	718.84	551.23	769.38	921.98		
littlekern												94.61
ayeaye							1.87					
baboon										101.81	90.45	
hawksbill											634.69	200.84
beaver											842.15	276.52
teal										82.7	639.95	695.07
tamarin	264.06	157.04	358.79	444.87	357.42	145.62	650.17	658.43	1,121.03	1,151.32		
albatross	255.47	414.39	315.04	342.28	579.71	640.03	688.69	554.18	714.13	695.07		
elephant												
porpoiuse											31.31	
seladang										237.6	681.64	368.05
wolverine									80.67	161.75	412.24	
hippo										139.93	327.97	136.31
voyager										100.89	756.47	897.1
condor										10.97	735.93	305.11

caracal	211.82	133.91	87.45	457.27	371.73	570.87	742.24	477.27	514.57	421.06		
numbat	142.87	357.34	286.2	360.75	575.78	715.46	635.09	608.77	859.24	416.95	13.64	
gorilla									5.35	115.19	846.48	264.82
bolty mcboltface										90.27	1,000.62	631.47
scorpion										126.43	1,004.02	113.04
oatmeal											2.63	
bear											463.44	322.45
chinchilla									57.8	389.98	577.04	531.65
platypus								167.91	1,731.64	1,656.92		
antelope	178.6	349.79	350.91	416.68	571.02	656.71	508.28	33.97	113.43			
seahorse	155.24	550.74	245.13	412.34	286.13	307.62	430.93	658.69	853.27	602.22		
pygmyhog									55.68	188.53	982.05	373.27
gnatcatcher											397.2	388.73
aries										173.65	218.77	
puma										121.19	638.24	741.47
goshawk												
fennec											690.57	327.21
cub										135.06	950.26	261.82
penguin	362.84	371.24	364.26	378.4	438.32	385.47	627.17	459.29	305.79			
crayfish												171.27
skink												
manatee											638.89	694.66
fruitbat												342.8
hugs												602.51
tanuki											76.59	
carter										19.72		
sunbear	35.28	85.48	77.24	253.38	465.32	532.74	594.64	426.69	886.4			
mongoose	292.97	411.03	261.93	408.2	568.86	613.12	481.82	647.05	759.93	417.25		
snaildarter											32.16	
falcon												
towhee										60.22	737.27	466.1
kagu									55.84	30.07		730.47
kokako										185.04	434.83	620.42
dorado										84.79	977.3	560.27



ostrich												442.54	
maverick													51.19
octopus										74.74		693.63	488.38
honu													213.53
orca										52.13		1,193.90	1,139.03
zeus										292.53		696.61	440.62
pronghorn			24.36						22.33	482.23		1,370.27	
polarbear	18.67												

December 2016 detail		
<b>Total miles driven in autonomous mode</b>	2948.63	
<b>Qualifying disengagements</b>	8	
Disengagements detail		
Date	Time	Causal factors
2016-12-02	13:58	Precautionary takeover to address planning
2016-12-02	17:46	Precautionary takeover to address planning
2016-12-02	18:05	Precautionary takeover to address planning
2016-12-05	13:35	Other road user behaving poorly
2016-12-09	11:21	Other road user behaving poorly
2016-12-19	15:34	Other road user behaving poorly
2016-12-19	17:34	Precautionary takeover to address perception
2016-12-22	18:02	Precautionary takeover to address planning

January 2017 detail		
<b>Total miles driven in autonomous mode</b>	4729.82	
<b>Qualifying disengagements</b>	12	
Disengagements detail		
Date	Time	Causal factors
2017-01-03	18:18	Precautionary takeover to address controls
2017-01-04	13:45	Precautionary takeover to address planning

2017-01-04	13:41	Precautionary takeover to address perception
2017-01-05	18:38	Other road user behaving poorly
2017-01-06	17:05	Other road user behaving poorly
2017-01-08	10:40	Other road user behaving poorly
2017-01-11	9:51	Precautionary takeover to address planning
2017-01-18	17:28	Precautionary takeover to address planning
2017-01-19	17:50	Precautionary takeover to address construction behavior
2017-01-24	16:16	Precautionary takeover to address perception
2017-01-26	16:48	Precautionary takeover to address planning
2017-01-26	17:12	Precautionary takeover to address planning

**February 2017 detail**

<b>Total miles driven in autonomous mode</b>	4160.15	
<b>Qualifying disengagements</b>	10	
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-02-01	20:39	Precautionary takeover to address perception
2017-02-06	21:01	Other road user behaving poorly
2017-02-08	22:40	Precautionary takeover to address planning
2017-02-08	18:46	Other road user behaving poorly
2017-02-10	22:40	Precautionary takeover to address controls
2017-02-14	21:00	Other road user behaving poorly
2017-02-20	16:59	Other road user behaving poorly
2017-02-22	11:09	Other road user behaving poorly
2017-02-22	11:40	Precautionary takeover to address planning
2017-02-27	16:25	Other road user behaving poorly

**March 2017 detail**

<b>Total miles driven in autonomous mode</b>		5595.61
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<b>Qualifying disengagements</b>		8
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-03-01	9:08	Other road user behaving poorly
2017-03-06	18:02	Other road user behaving poorly
2017-03-23	14:42	Other road user behaving poorly
2017-03-27	11:30	Precautionary takeover to address planning
2017-03-27	17:35:42	Precautionary takeover to address controls
2017-03-27	20:46:49	Precautionary takeover to address planning
2017-03-28	11:50:26	Precautionary takeover to address construction behavior
2017-03-28	14:59	Other road user behaving poorly

<b>April 2017 detail</b>		
<b>Total miles driven in autonomous mode</b>		6908.4
<b>Qualifying disengagements</b>		19
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-04-11	15:46	Other road user behaving poorly
2017-04-14	11:44	Other road user behaving poorly
2017-04-19	10:58	Precautionary takeover to address planning
2017-04-19	11:47	Other road user behaving poorly
2017-04-21	11:46	Other road user behaving poorly
2017-04-21	15:13	Precautionary takeover to address perception
2017-04-23	16:28	Precautionary takeover to address perception
2017-04-24	8:50	Precautionary takeover to address controls
2017-04-24	10:47	Other road user behaving poorly
2017-04-24	13:41	Precautionary takeover to address planning
2017-04-24	18:57	Precautionary takeover to address controls
2017-04-24	18:41	Precautionary takeover to address controls
2017-04-25	18:09	Precautionary takeover to address perception

2017-04-26	17:09	Other road user behaving poorly
2017-04-27	13:53	Precautionary takeover to address planning
2017-04-27	16:11	Precautionary takeover to address controls
2017-04-27	16:12	Other road user behaving poorly
2017-04-27	18:54	Precautionary takeover to address planning
2017-04-28	21:53	Precautionary takeover to address controls

**May 2017 detail**

<b>Total miles driven in autonomous mode</b>		8838.12
<b>Qualifying disengagements</b>		7
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-05-01	8:16	Other road user behaving poorly
2017-05-02	14:47	Precautionary takeover to address planning
2017-05-03	14:44	Other road user behaving poorly
2017-05-05	23:12	Precautionary takeover to address planning
2017-05-10	18:32	Other road user behaving poorly
2017-05-17	21:01	Precautionary takeover to address planning
2017-05-23	11:04	Other road user behaving poorly

**June 2017 detail**

<b>Total miles driven in autonomous mode</b>		10487.29
<b>Qualifying disengagements</b>		9
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-06-02	14:21	Precautionary takeover to address controls
2017-06-13	9:34	Other road user behaving poorly
2017-06-14	22:33	Other road user behaving poorly
2017-06-15	10:58	Precautionary takeover to address perception



2017-06-20	15:40	Precautionary takeover to address planning
2017-06-22	9:27	Other road user behaving poorly
2017-06-23	17:41	Other road user behaving poorly
2017-06-23	22:49	Precautionary takeover to address planning
2017-06-30	12:56	Precautionary takeover to address perception

July 2017 detail		
<b>Total miles driven in autonomous mode</b>		10442.18
<b>Qualifying disengagements</b>		12
Disengagements detail		
Date	Time	Causal factors
2017-07-01	17:55	Precautionary takeover to address planning
2017-07-10	10:37	Precautionary takeover to address controls
2017-07-10	23:13	Precautionary takeover to address controls
2017-07-11	11:31	Precautionary takeover to address controls
2017-07-13	10:14	Precautionary takeover to address planning
2017-07-13	23:00	Other road user behaving poorly
2017-07-18	19:58	Precautionary takeover to address planning
2017-07-20	10:56	Other road user behaving poorly
2017-07-20	18:03	Other road user behaving poorly
2017-07-25	18:55	Precautionary takeover to address perception
2017-07-26	18:14	Other road user behaving poorly
2017-07-28	9:13	Precautionary takeover to address perception

August 2017 detail		
<b>Total miles driven in autonomous mode</b>		14877.2
<b>Qualifying disengagements</b>		8
Disengagements detail		
Date	Time	Causal factors

2017-08-03	11:50	Precautionary takeover to address planning
2017-08-06	13:26	Precautionary takeover to address planning
2017-08-07	10:53	Other road user behaving poorly
2017-08-07	13:35	Precautionary takeover to address controls
2017-08-17	14:29	Other road user behaving poorly
2017-08-19	2:19	Precautionary takeover to address perception
2017-08-24	8:20	Other road user behaving poorly
2017-08-31	9:29	Precautionary takeover to address construction behavior

**September 2017 detail**

<b>Total miles driven in autonomous mode</b>		16594.3
<b>Qualifying disengagements</b>		5
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-09-03	12:22	Other road user behaving poorly
2017-09-22	9:32	Other road user behaving poorly
2017-09-22	18:57	Other road user behaving poorly
2017-09-27	13:31	Precautionary takeover to address planning
2017-09-28	7:10	Precautionary takeover to address controls

**October 2017 detail**

<b>Total miles driven in autonomous mode</b>		27576.32
<b>Qualifying disengagements</b>		3
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-10-19	13:04	Other road user behaving poorly
2017-10-19	21:30	Precautionary takeover to address perception
2017-10-31	14:56	Precautionary takeover to address controls

**November 2017 detail**

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<b>Total miles driven in autonomous mode</b>		18517.92
<b>Qualifying disengagements</b>		4
<b>Disengagements detail</b>		
<b>Date</b>	<b>Time</b>	<b>Causal factors</b>
2017-11-06	17:57	Other road user behaving poorly
2017-11-06	21:48	Other road user behaving poorly
2017-11-13	22:05	Other road user behaving poorly
2017-11-19	9:27	Precautionary takeover to address planning