



# California's Autonomous Vehicles Testing Program

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# California Senate Bill 1298 (2012)

## Vehicle Code §38750

- Develop regulations setting forth requirements for
  - Manufacturer's *testing* of autonomous vehicles on public roadways
  - *Operation* of autonomous vehicles on public roadways
  
- Ensure the safe operation on public roadways, with or without the presence of a driver



# California's Definition of Autonomous Vehicle

**“Autonomous technology”**: technology that has the capability to drive a vehicle without the active physical control or monitoring by a human operator.

**“Autonomous vehicle”**: any vehicle equipped with autonomous technology that has been integrated into that vehicle.



# Autonomous Vehicle Steering Committee



# Regulations Summary: Testing with a Driver



- \$5 million in insurance, bond, or self-insurance
- Test driver requirements:
  - No DUI, not an at-fault driver, and no more than 1 point
  - Successful completion of test driver training program
  - Employee, contractor, or designee of manufacturer
- Test driver must be seated in driver seat during testing
- Report any accident within 10 days
- Report unanticipated disengagements of autonomous technology annually
- Testing permit valid for one year
- Vehicles excluded from testing:
  - Commercial vehicles
  - > 10,000 lbs GVW
  - Motorcycles



# Approved Testing Permits Today





# Approved Testing Permits Today (55 current)

1. Volkswagen Group of America
2. Mercedes Benz
3. Waymo LLC
4. Delphi Automotive
5. Tesla Motors
6. Bosch
7. Nissan
8. GM Cruise LLC
9. BMW
10. Honda
11. Ford
12. Zoox, Inc.
13. Drive.ai, Inc.
14. Faraday & Future Inc.
15. Baidu USA LLC
- ~~16. Wheego Electric Cars~~
17. Valeo North America, Inc.
18. NIO USA, Inc.
19. Telenav, Inc.
20. NVIDIA Corporation
21. AutoX Technologies Inc
22. Subaru
23. Udacity, Inc
24. Navya Inc.
25. Renovo.auto
- ~~26. UATC LLC~~
27. PlusAi Inc
28. Nuro, Inc
29. CarOne LLC
30. Apple Inc.
- ~~31. Bauer's Intelligent Transportation~~
32. Pony.AI
33. TuSimple
34. Jingchi Corp
35. SAIC Innovation Center, LLC
36. Almotive Inc
37. Aurora Innovation
38. Nullmax
39. Samsung Electronics
40. Continental Automotive Systems Inc
41. Voyage
42. CYNGN, Inc
43. Roadstar.Ai
44. Changan Automobile
45. Lyft, Inc.
46. Phantom AI
47. Qualcomm Technologies, Inc.
48. aiPod, Inc.
49. SF Motors Inc.
50. Toyota Research Institute
51. Apex.AI
52. Intel Corp
53. Ambarella Corporation
54. Gatik AI Inc
55. Didi Research America LLC
56. TORC Robotics Inc
57. Boxbot Inc
58. EasyMile



# California by the Numbers

**55** active permits to test with a driver

**468** autonomous vehicles permitted for testing on public roads

**1,677** test drivers

**1.6 million+** autonomous miles  
driven

**85** crashes





# A (Very) Brief History of California AV Regulation



- **September 25, 2012:** Senate Bill 1298 authorizes the DMV to adopt regulations for the operation of autonomous vehicles in California.
- **September 16, 2014:** First set of regulations governing how manufacturers could test autonomous vehicles (with a driver) on California roads went into effect.
- **April 2, 2018:** DMV can begin approving applications for autonomous vehicle testing without a driver and deployment (public use).



# Regulations Summary: Testing Without a Driver

- \$5 million insurance, bond, or self-insurance
- Communication link with the remote operator.
- Process to display or communicate vehicle owner or operator information to a law enforcement officer.
- AV complies with all FMVSS and CVC Div. 12 (Equipment of Vehicles), or NHTSA has approved an exemption.
- Meets the description of level 4 or 5 automated driving system.
- Law enforcement interaction plan
- Remote operators + training program
- Passengers that are not employees/contractors will be notified what personal information, if any, may be collected and how it will be used.
- Annual report of disengagements to the DMV.
- Report collision resulting in damage of property, bodily injury, or death to DMV within 10 days.
- No charging of a fee or receiving other compensation for providing a ride to members of the public.



# California and Model State Policy

American Association of Motor Vehicle Administrators (AAMVA) Autonomous Vehicles Working Group

- Sixteen states and two Canadian provinces
  - Members represent technology, licensing, and law enforcement areas
  - California (Chair) and Michigan (Vice-Chair)
- 
- NHTSA-funded
  - Framework for states to follow as technology develops



# Questions?

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