Docket No. 1089-001 **PATENT**

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Examiner :	David E. England		
Customer No.:	88360		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Sir:

This Supplemental Response is being submitted in the above-identified Reexamination. Please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 29 of this paper.

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.

2. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing; and

means for comparing manifold pressure to said manifold pressure set point;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point.

3. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said fuel overinjection circuit further comprises a horn for issuing a tone for a preselected time period.

4. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said fuel overinjection notification

circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

5. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing;

means for comparing manifold pressure to said manifold pressure set point; and

means for comparing engine speed to said RPM set point;

said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.

6. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said upshift notification circuit further comprises a horn for issuing a tone for a preselected time period.

7. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.

8. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing; and

means for comparing manifold pressure to said manifold pressure set point;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and

manifold pressure for said vehicle is above said manifold pressure set point.

9. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said fuel overinjection circuit further comprises a horn for issuing a tone for a preselected time period.

10. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

11. (Original) Apparatus for optimizing operation of a vehicle according to claim 10 wherein said downshift notification circuit further comprises a horn for issuing a tone for a preselected time period.

12. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said fuel overinjection notification circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

13. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an engine speed set point and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said

upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive engine speed;

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, said upshift notification circuit and said downshift notification circuit.

14. (Original) Apparatus for optimizing operation of a vehicle according to claim 13 wherein:

said fuel overinjection circuit further comprises a first horn for issuing a first tone for a first preselected time period;

said upshift notification circuit further comprises a second horn for issuing a second tone for a second preselected time period; and

said downshift notification circuit further comprises a third horn for issuing a third tone for a third preselected time period.

15. (Original) Apparatus for optimizing vehicle performance according to claim 13 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing or decreasing

means for determining when throttle position for said vehicle is increasing;

means for comparing manifold pressure to said manifold pressure set point;

means for comparing engine speed to said RPM set point;

means for determining when manifold pressure is increasing; and

means for determining when engine speed is increasing or decreasing;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing;

said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point; and

said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

16. (Original) Apparatus for optimizing operation of a vehicle according to claim 15 wherein:

said fuel overinjection circuit further comprises a first horn for issuing a first tone for a first preselected time period;

said upshift notification circuit further comprises a second horn for issuing a second tone for a second preselected time period; and

said downshift notification circuit further comprises a third horn for issuing a third tone for a third preselected time period.

17. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor;

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is

being operated at an excessive speed;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.

18. (Original) Apparatus for optimizing operation of a vehicle according to claim 17 wherein:

said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and

said memory subsystem further storing a second vehicle speed/stopping distance table.

19. (Original) Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:

a throttle controller for controlling a throttle of said engine of said vehicle; and

said processor subsystem selectively reducing said throttle based upon data received from said radar detector, said at least one sensor and said memory subsystem.

20. (Original) Apparatus for optimizing operation of a vehicle according to claim 19 wherein said at least one sensor further includes a brake sensor for indicating

whether a brake system of said vehicle is activated.

21. (Original) Apparatus for optimizing operation of a vehicle according to claim 19 wherein said processor subsystem further comprises:

means for counting a total number of vehicle proximity alarms determined by said processor subsystem;

means for selectively reducing said throttle based upon said total number of vehicle proximity alarms.

22. (Original) Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said downshift notification circuit.

23. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position

sensor;

a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.

24. (Original) Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing or decreasing;

means for determining when throttle position for said vehicle is increasing or decreasing; and

means for comparing manifold pressure to said manifold pressure set point;

means for determining when manifold pressure for said vehicle is increasing or decreasing; and

means for determining when engine speed for said vehicle is increasing or decreasing;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

25. (Original) Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing;

means for comparing manifold pressure to said manifold pressure set point; and

means for comparing engine speed to said RPM set point;

said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.

26. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

a downshift notification circuit coupled to said processor subsystem, said

downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.

27. (Original) Apparatus for optimizing operation of a vehicle according to claim 26 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

28. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.

29. (Original) Apparatus according to claim 28 and further comprising:

a memory subsystem, coupled to said processor subsystem, said memory subsystem maintaining a manifold pressure set point;

said processor subsystem activating said fuel overinjection notification circuit upon determining that:

(1) based upon data received from said road speed sensor, road speed of said vehicle is increasing;

(2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; and

(3) based upon data received from said manifold pressure sensor, manifold

pressure for said vehicle exceeds said manifold pressure set point.

30. (Original) Apparatus according to claim 28, wherein:

said plurality of sensors coupled to said vehicle further include an engine speed sensor;

said processor subsystem activating said fuel overinjection notification circuit upon determining that:

(1) based upon data received from said road speed sensor, road speed of said vehicle is decreasing;

(2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing;

(3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle is increasing; and

(4) based upon data received from said engine speed sensor, engine speed for said vehicle is decreasing.

31. (Amended) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

[at least one] a plurality of sensors coupled to said vehicle for monitoring operation thereof, said [at least one] plurality of sensors including a road speed sensor and an engine speed sensor;

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem; and

a throttle controller for controlling a throttle of said engine of said vehicle;

wherein said processor subsystem selectively reduces said throttle based upon the data received from said radar detector;

further wherein the processor subsystem includes (i) an active mode in which the processor subsystem activates the vehicle proximity alarm circuit to issue the vehicle proximity alarm and reduces the throttle based upon the data received from said radar detector, and (ii) an inactive mode in which the processor subsystem activates the vehicle proximity alarm circuit to issue the alarm and the throttle is not selectively reduced based upon the data received from said radar detector.

32. (Original) Apparatus for optimizing operation of a vehicle according to claim 31 wherein:

said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and

said memory subsystem further storing a second vehicle speed/stopping distance table;

if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem;

if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.

33. (New) Apparatus for optimizing operation of a vehicle according to claim 1 further comprising:

means for determining a distance separating a vehicle and an object, wherein the vehicle includes an engine; and

a vehicle proximity alarm circuit coupled to said processor subsystem, wherein the vehicle proximity alarm circuit includes at least one of a visual notification and an audible notification;

wherein, upon the processor subsystem receiving the distance from said means for determining a distance and determining said distance is less than a predetermined distance, the processor subsystem activates the vehicle proximity alarm circuit.

34. (New) Apparatus for optimizing operation of a vehicle according to claim 33, further comprising:

a throttle controller for controlling a throttle of said engine of said vehicle;

wherein, upon the processor subsystem receiving the distance from said means for determining a distance and determining said distance received is less than a predetermined distance, the processor subsystem reduces said throttle.

35. (New) Apparatus for optimizing operation of a vehicle according to claim 33, further wherein the processor subsystem determines whether the brakes of the vehicle are activated.

36. (New) Apparatus for optimizing operation of a vehicle according to claim 33, wherein the vehicle proximity alarm circuit further comprises a display for displaying at least one of the speed of the object, and the distance to the object.

37. (New) Apparatus for optimizing operation of a vehicle according to claim 34, wherein the processor subsystem includes (i) an active mode wherein the processor subsystem activates an alarm and reduces the throttle based upon the distance received from said means for determining, and (ii) an inactive mode wherein the processor subsystem activates an alarm and the processor subsystem does not reduce the throttle based upon the distance received from said means for determining.

38. (New) Apparatus for optimizing operation of a vehicle according to claim 37, further comprising a means for mode selection between said active mode and said inactive mode.

39. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said plurality of sensors is the engine speed sensor and the vehicle speed sensor.

40. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said notification that the engine is being operated an excessive speed comprises an automatic corrective action by the vehicle.

41. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said notification that the engine is being operated at an excessive speed notifies a driver that an upshift should be performed.

42. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said notification that excessive fuel is being supplied to said engine of said vehicle notifies a driver that the vehicle is not being operated fuel efficiently.

43. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said manifold pressure set point is a manifold pressure threshold value.

44. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said manifold pressure set point is a threshold value above which the manifold pressure should not exceed.

45. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem determines when to activate said fuel overinjection circuit and said upshift notification circuit based upon said manifold pressure set point and said RPM set point.

46. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination to activate said fuel overinjection circuit is based on data from the road speed sensor.

47. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination to activate said fuel overinjection circuit is based on data from the manifold pressure sensor.

48. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination to activate said fuel overinjection circuit is based on data from the throttle position sensor.

49. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem is configured to automatically power on when the vehicle is started.

50. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination when to activate said fuel overinjection circuit and said determination when to activate said upshift notification circuit is based upon said present and prior levels for said plurality of sensors stored in said memory subsystem.

51. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem is configured to periodically communicate with said plurality of sensors.

52. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem is configured to retrieve data from the plurality of sensors and store the data in said memory subsystem.

53. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein the processor subsystem includes (i) an active mode wherein the processor subsystem activates an alarm and reduces the throttle based upon a distance received from said radar detector, and (ii) an inactive mode wherein the processor subsystem activates an alarm and the processor subsystem does not reduce the throttle based upon a distance received from said radar detector.

54. (New) Apparatus for optimizing operation of a vehicle according to claim 53, further comprising a means for mode selection between said active mode and said inactive mode.

55. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein said processor subsystem activates said upshift notification circuit based on the manifold pressure set point and RPM set point.

56. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein said at least one sensor is the road speed sensor.

57. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein the first speed/stopping distance table is based on National Safety Council guidelines.

58. (New) Apparatus for optimizing operation of a vehicle according to claim 17, further wherein said processor subsystem automatically applies the brakes based upon data received from said radar detector, said at least one sensor and said memory subsystem.

59. (New) Apparatus for optimizing operation of a vehicle according to claim 28 further comprising:

a means for determining a distance separating a vehicle and an object, wherein the vehicle includes an engine; and

a vehicle proximity alarm circuit coupled to said processor subsystem;

wherein said processor subsystem activates said vehicle proximity alarm circuit based at least upon the data received from said road speed sensor, and the means for determining the distance separating the vehicle and the object.

60. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising:

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

wherein said processor subsystem determines whether to activate said fuel overinjection notification circuit based upon at least the data received from said road speed sensor.

61. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising:

a display;

wherein the vehicle proximity alarm includes at least one of an audible indication, and a visual indication; and

wherein the visual indication is displayed on the display.

62. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising means for mode selection between said active mode and said inactive mode.

63. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a selector for selecting a type of vehicle proximity alarm, wherein the type of vehicle proximity alarm is selected from the group consisting of an audible indication, a visual indication, and combinations thereof.

64. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said first speed/stopping distance table is a lookup table.

65. (New) Apparatus for optimizing operation of a vehicle according to claim 65, wherein said first speed/stopping distance table is based upon National Safety Council guidelines.

66. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising an upshift notification circuit coupled to said processor subsystem.

67. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further wherein said processor subsystem determines whether the brakes of the vehicle are activated.

68. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a bus for bidirectional exchanges of address, data and control signals between said processor subsystem and said memory subsystem.

69. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said memory subsystem includes at least one register for holding the level of said road speed sensor.

70. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a tachometer.

71. (New) Apparatus for optimizing operation of a vehicle according to claim 70, further comprising a speedometer.

72. (New) Apparatus of optimizing operation of a vehicle according to claim 31, wherein said vehicle comprises a truck.

73. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a power source including voltage divider circuitry.

74. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said memory subsystem stores vehicle class information.

75. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to automatically power on when the vehicle is started.

76. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to periodically communicate with said road speed sensor.

77. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to retrieve data from said road speed sensor and store the data in said memory subsystem.

78. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to wait a preselected time period after issuing the vehicle proximity alarm.

79. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to select a type of vehicle proximity alarm based on the determined distance, wherein the type of vehicle proximity

alarm is selected from the group consisting of an audible indication, a visual indication, and combinations thereof.

80. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said first speed/stopping distance table is the relationship between vehicle speed and stopping distance.

81. (New) Apparatus for optimizing operation of a vehicle according to claim 71, further comprising a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.

82. (New) Apparatus for optimizing operation of a vehicle according to claim 71, further comprising an upshift notification circuit coupled to said processor subsystem.

83. (New) Apparatus for optimizing operation of a vehicle according to claim 71, wherein said vehicle proximity alarm includes an audible indication and a visual indication.

84. (New) Apparatus for optimizing operation of a vehicle according to claim 71, further comprising means for mode selection between said active mode and said inactive mode.

Remarks

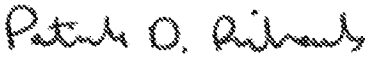
This Supplemental Response is being submitted to correct the form of the claim amendments submitted in the Response dated November 3, 2014. No new matter has been added by the amendments and new claims presented herein. Reconsideration and reexamination of the claims in light of the following remarks contained with in the Response dated November 3, 2014.

Conclusion

In view of the foregoing remarks, Patent Owner submits that all of the currently pending claims are in allowable form and that the application is in condition for allowance. Therefore, Patent Owner respectfully requests that a timely Notice of Allowance be issued in this case. If for any reason the Examiner is unable to allow the application and feels that an interview would be helpful to resolve any remaining issues, the Examiner is requested to contact the undersigned attorney at (312) 283-8555.

Respectfully submitted,

RICHARDS PATENT LAW PC



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Electronic Acknowledgement Receipt

EFS ID:	20658841
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	10-NOV-2014
Filing Date:	22-MAY-2014
Time Stamp:	23:14:48
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	1089SupplementalResponse.pdf	191059 80fa729e593888108c1a3f19626f5a468c30218b	no	30

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-31

Total Files Size (in bytes):	191059

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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Docket No. 1089-001 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	90/013,252	**Confirmation No.** :	9999
Patent No.	:	5,954,781		
Filed	:	May 22, 2014		
Art Unit.	:	3992		
Examiner	:	David E. England		
Customer No.:		88360		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Response and Supplemental IDS is being served on November 4, 2014, by Federal Express on the third party requester at the following address:

Clifford A. Ulrich
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233 S. Wacker Dr., 84th Floor
Chicago, IL 60606
Phone: (312) 283-8555
Date: November 4, 2014

MERCEDES
EXHIBIT 1012-33

Electronic Acknowledgement Receipt

EFS ID:	20625655
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	06-NOV-2014
Filing Date:	22-MAY-2014
Time Stamp:	14:21:58
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Reexam Certificate of Service	1089CertificateofService11-4-14.pdf	75985 c66d4403f1cf08e9ed3383b1d8d8484d5f2b77cb	no	1

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-34

Total Files Size (in bytes):	75985

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Docket No. 1089-001 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Control No. :	90013252	**Confirmation No. :**	9999
Patent No. :	5,954,781		
Applicant :	Harvey Slepian		
Reexam Filed:	May 22, 2014		
Art Unit. :	3992		
Examiner :	David E. England		
Customer No.:	88360		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Sir:

This Response is being submitted in the above-identified Reexamination. Please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 29 of this paper.

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.

2. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing; and

means for comparing manifold pressure to said manifold pressure set point;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point.

3. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said fuel overinjection circuit further comprises a horn for issuing a tone for a preselected time period.

4. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said fuel overinjection notification

circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

5. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing;

means for comparing manifold pressure to said manifold pressure set point; and

means for comparing engine speed to said RPM set point;

said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.

6. (Original) Apparatus for optimizing operation of a vehicle according to claim 1 wherein said upshift notification circuit further comprises a horn for issuing a tone for a preselected time period.

7. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.

8. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing; and

means for comparing manifold pressure to said manifold pressure set point;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and

manifold pressure for said vehicle is above said manifold pressure set point.

9. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said fuel overinjection circuit further comprises a horn for issuing a tone for a preselected time period.

10. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

11. (Original) Apparatus for optimizing operation of a vehicle according to claim 10 wherein said downshift notification circuit further comprises a horn for issuing a tone for a preselected time period.

12. (Original) Apparatus for optimizing operation of a vehicle according to claim 7 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said fuel overinjection notification circuit if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

13. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an engine speed set point and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said

upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive engine speed;

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, said upshift notification circuit and said downshift notification circuit.

14. (Original) Apparatus for optimizing operation of a vehicle according to claim 13 wherein:

said fuel overinjection circuit further comprises a first horn for issuing a first tone for a first preselected time period;

said upshift notification circuit further comprises a second horn for issuing a second tone for a second preselected time period; and

said downshift notification circuit further comprises a third horn for issuing a third tone for a third preselected time period.

15. (Original) Apparatus for optimizing vehicle performance according to claim 13 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing or decreasing

means for determining when throttle position for said vehicle is increasing;

means for comparing manifold pressure to said manifold pressure set point;

means for comparing engine speed to said RPM set point;

means for determining when manifold pressure is increasing; and

means for determining when engine speed is increasing or decreasing;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing;

said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point; and

said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

16. (Original) Apparatus for optimizing operation of a vehicle according to claim 15 wherein:

said fuel overinjection circuit further comprises a first horn for issuing a first tone for a first preselected time period;

said upshift notification circuit further comprises a second horn for issuing a second tone for a second preselected time period; and

said downshift notification circuit further comprises a third horn for issuing a third tone for a third preselected time period.

17. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor;

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is

being operated at an excessive speed;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.

18. (Original) Apparatus for optimizing operation of a vehicle according to claim 17 wherein:

said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and

said memory subsystem further storing a second vehicle speed/stopping distance table.

19. (Original) Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:

a throttle controller for controlling a throttle of said engine of said vehicle; and

said processor subsystem selectively reducing said throttle based upon data received from said radar detector, said at least one sensor and said memory subsystem.

20. (Original) Apparatus for optimizing operation of a vehicle according to claim 19 wherein said at least one sensor further includes a brake sensor for indicating

whether a brake system of said vehicle is activated.

21. (Original) Apparatus for optimizing operation of a vehicle according to claim 19 wherein said processor subsystem further comprises:

means for counting a total number of vehicle proximity alarms determined by said processor subsystem;

means for selectively reducing said throttle based upon said total number of vehicle proximity alarms.

22. (Original) Apparatus for optimizing operation of a vehicle according to claim 17 and further comprising:

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said downshift notification circuit.

23. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position

sensor;

a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.

24. (Original) Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing or decreasing;

means for determining when throttle position for said vehicle is increasing or decreasing; and

means for comparing manifold pressure to said manifold pressure set point;

means for determining when manifold pressure for said vehicle is increasing or decreasing; and

means for determining when engine speed for said vehicle is increasing or decreasing;

said processor subsystem activating said fuel overinjection notification circuit if both road speed and throttle position for said vehicle are increasing and manifold pressure for said vehicle is above said manifold pressure set point or if both throttle position and manifold pressure for said vehicle are increasing and road speed and engine speed for said vehicle are decreasing.

25. (Original) Apparatus for optimizing operation of a vehicle according to claim 23 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is increasing;

means for determining when throttle position for said vehicle is increasing;

means for comparing manifold pressure to said manifold pressure set point; and

means for comparing engine speed to said RPM set point;

said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point.

26. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

a downshift notification circuit coupled to said processor subsystem, said

downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.

27. (Original) Apparatus for optimizing operation of a vehicle according to claim 26 wherein said processor subsystem further comprises:

means for determining when road speed for said vehicle is decreasing;

means for determining when throttle position for said vehicle is increasing;

means for determining when manifold pressure for said vehicle is increasing; and

means for determining when engine speed for said vehicle is decreasing;

said processor subsystem activating said downshift notification circuit if both road speed and engine speed are decreasing and both throttle position and manifold pressure for said vehicle are increasing.

28. (Original) Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.

29. (Original) Apparatus according to claim 28 and further comprising:

a memory subsystem, coupled to said processor subsystem, said memory subsystem maintaining a manifold pressure set point;

said processor subsystem activating said fuel overinjection notification circuit upon determining that:

(1) based upon data received from said road speed sensor, road speed of said vehicle is increasing;

(2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing; and

(3) based upon data received from said manifold pressure sensor, manifold

pressure for said vehicle exceeds said manifold pressure set point.

30. (Original) Apparatus according to claim 28, wherein:

said plurality of sensors coupled to said vehicle further include an engine speed sensor;

said processor subsystem activating said fuel overinjection notification circuit upon determining that:

(1) based upon data received from said road speed sensor, road speed of said vehicle is decreasing;

(2) based upon data received from said throttle position sensor, throttle position for said vehicle is increasing;

(3) based upon data received from said manifold pressure sensor, manifold pressure for said vehicle is increasing; and

(4) based upon data received from said engine speed sensor, engine speed for said vehicle is decreasing.

31. (Amended) Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

~~at least one~~ a plurality of sensors coupled to said vehicle for monitoring operation thereof, said ~~at least one~~ plurality of sensors including a road speed sensor and an engine speed sensor;

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem; and

a throttle controller for controlling a throttle of said engine of said vehicle;

wherein said processor subsystem selectively reduces said throttle based upon the data received from said radar detector;

further wherein the processor subsystem includes (i) an active mode in which the processor subsystem activates the vehicle proximity alarm circuit to issue the vehicle proximity alarm and reduces the throttle based upon the data received from said radar detector, and (ii) an inactive mode in which the processor subsystem activates the vehicle proximity alarm circuit to issue the alarm and the throttle is not selectively reduced based upon the data received from said radar detector.

32. (Original) Apparatus for optimizing operation of a vehicle according to claim 31 wherein:

said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and

said memory subsystem further storing a second vehicle speed/stopping distance table;

if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem;

if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.

33. (New) Apparatus for optimizing operation of a vehicle according to claim 1 further comprising:

means for determining a distance separating a vehicle and an object, wherein the vehicle includes an engine; and

a vehicle proximity alarm circuit coupled to said processor subsystem, wherein the vehicle proximity alarm circuit includes at least one of a visual notification and an audible notification;

wherein, upon the processor subsystem receiving the distance from said means for determining a distance and determining said distance is less than a predetermined distance, the processor subsystem activates the vehicle proximity alarm circuit.

34. (New) Apparatus for optimizing operation of a vehicle according to claim 33, further comprising:

a throttle controller for controlling a throttle of said engine of said vehicle;

wherein, upon the processor subsystem receiving the distance from said means for determining a distance and determining said distance received is less than a predetermined distance, the processor subsystem reduces said throttle.

35. (New) Apparatus for optimizing operation of a vehicle according to claim 33, further wherein the processor subsystem determines whether the brakes of the vehicle are activated.

36. (New) Apparatus for optimizing operation of a vehicle according to claim 33, wherein the vehicle proximity alarm circuit further comprises a display for displaying at least one of the speed of the object, and the distance to the object.

37. (New) Apparatus for optimizing operation of a vehicle according to claim 34, wherein the processor subsystem includes (i) an active mode wherein the processor subsystem activates an alarm and reduces the throttle based upon the distance received from said means for determining, and (ii) an inactive mode wherein the processor subsystem activates an alarm and the processor subsystem does not reduce the throttle based upon the distance received from said means for determining.

38. (New) Apparatus for optimizing operation of a vehicle according to claim 37, further comprising a means for mode selection between said active mode and said inactive mode.

39. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said plurality of sensors is the engine speed sensor and the vehicle speed sensor.

40. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said notification that the engine is being operated an excessive speed comprises an automatic corrective action by the vehicle.

41. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said notification that the engine is being operated at an excessive speed notifies a driver that an upshift should be performed.

42. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said notification that excessive fuel is being supplied to said engine of said vehicle notifies a driver that the vehicle is not being operated fuel efficiently.

43. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said manifold pressure set point is a manifold pressure threshold value.

44. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said manifold pressure set point is a threshold value above which the manifold pressure should not exceed.

45. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem determines when to activate said fuel overinjection circuit and said upshift notification circuit based upon said manifold pressure set point and said RPM set point.

46. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination to activate said fuel overinjection circuit is based on data from the road speed sensor.

47. (New). Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination to activate said fuel overinjection circuit is based on data from the manifold pressure sensor.

48. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination to activate said fuel overinjection circuit is based on data from the throttle position sensor.

49. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem is configured to automatically power on when the vehicle is started.

50. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said determination when to activate said fuel overinjection circuit and said determination when to activate said upshift notification circuit is based upon said present and prior levels for said plurality of sensors stored in said memory subsystem.

51. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem is configured to periodically communicate with said plurality of sensors.

52. (New) Apparatus for optimizing operation of a vehicle according to claim 1, wherein said processor subsystem is configured to retrieve data from the plurality of sensors and store the data in said memory subsystem.

53. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein the processor subsystem includes (i) an active mode wherein the processor subsystem activates an alarm and reduces the throttle based upon a distance received from said radar detector, and (ii) an inactive mode wherein the processor subsystem activates an alarm and the processor subsystem does not reduce the throttle based upon a distance received from said radar detector.

54. (New) Apparatus for optimizing operation of a vehicle according to claim 53, further comprising a means for mode selection between said active mode and said inactive mode.

55. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein said processor subsystem activates said upshift notification circuit based on the manifold pressure set point and RPM set point.

56. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein said at least one sensor is the road speed sensor.

57. (New) Apparatus for optimizing operation of a vehicle according to claim 17, wherein the first speed/stopping distance table is based on National Safety Council guidelines.

58. (New) Apparatus for optimizing operation of a vehicle according to claim 17, further wherein said processor subsystem automatically applies the brakes based upon data received from said radar detector, said at least one sensor and said memory subsystem.

59. (New) Apparatus for optimizing operation of a vehicle according to claim 28 further comprising:

a means for determining a distance separating a vehicle and an object, wherein the vehicle includes an engine; and

a vehicle proximity alarm circuit coupled to said processor subsystem;

wherein said processor subsystem activates said vehicle proximity alarm circuit based at least upon the data received from said road speed sensor, and the means for determining the distance separating the vehicle and the object.

60. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising:

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

wherein said processor subsystem determines whether to activate said fuel overinjection notification circuit based upon at least the data received from said road speed sensor.

61. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising:

a display;

wherein the vehicle proximity alarm includes at least one of an audible indication, and a visual indication; and

wherein the visual indication is displayed on the display.

62. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising means for mode selection between said active mode and said inactive mode.

63. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a selector for selecting a type of vehicle proximity alarm, wherein the type of vehicle proximity alarm is selected from the group consisting of an audible indication, a visual indication, and combinations thereof.

64. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said first speed/stopping distance table is a lookup table.

65. (New) Apparatus for optimizing operation of a vehicle according to claim 65, wherein said first speed/stopping distance table is based upon National Safety Council guidelines.

66. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising an upshift notification circuit coupled to said processor subsystem.

67. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further wherein said processor subsystem determines whether the brakes of the vehicle are activated.

68. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a bus for bidirectional exchanges of address, data and control signals between said processor subsystem and said memory subsystem.

69. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said memory subsystem includes at least one register for holding the level of said road speed sensor.

70. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a tachometer.

71. (New) Apparatus for optimizing operation of a vehicle according to claim 70, further comprising a speedometer.

72. (New) Apparatus of optimizing operation of a vehicle according to claim 31, wherein said vehicle comprises a truck.

73. (New) Apparatus for optimizing operation of a vehicle according to claim 31, further comprising a power source including voltage divider circuitry.

74. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said memory subsystem stores vehicle class information.

75. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to automatically power on when the vehicle is started.

76. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to periodically communicate with said road speed sensor.

77. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to retrieve data from said road speed sensor and store the data in said memory subsystem.

78. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to wait a preselected time period after issuing the vehicle proximity alarm.

79. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said processor subsystem is configured to select a type of vehicle proximity alarm based on the determined distance, wherein the type of vehicle proximity

alarm is selected from the group consisting of an audible indication, a visual indication, and combinations thereof.

80. (New) Apparatus for optimizing operation of a vehicle according to claim 31, wherein said first speed/stopping distance table is the relationship between vehicle speed and stopping distance.

81. (New) Apparatus for optimizing operation of a vehicle according to claim 71, further comprising a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.

82. (New) Apparatus for optimizing operation of a vehicle according to claim 71, further comprising an upshift notification circuit coupled to said processor subsystem.

83. (New) Apparatus for optimizing operation of a vehicle according to claim 71, wherein said vehicle proximity alarm includes an audible indication and a visual indication.

84. (New) Apparatus for optimizing operation of a vehicle according to claim 71, further comprising means for mode selection between said active mode and said inactive mode.

Remarks

New claims 33-84 have been added. No new matter has been added by the amendments and new claims presented herein. Reconsideration and reexamination of the claims in light of the following remarks is requested.

Patentable Claims

Patent Owner thanks the Examiner for identifying and confirming claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17-30 as patentable in the present reexamination proceeding.

Patent Owner agrees that none of the prior art submitted by the Requester anticipates or renders obvious the patent claims. The Patent Owner comments here on certain ambiguities in the Examiner's Statement of Reasons for Patentability and/or Confirmation.

The Examiner notes that none of the prior art of record discloses "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle." The Patent Owner agrees.

When discussing "Jurgen," the Examiner states: "The '781 Patent's thresholds allow the engine to reach a state of overinjection." The Examiner's statement is true. But the statement is ambiguous such that it could be misconstrued to imply that "overinjection" is a consequence of the claimed invention. Any such implication is manifestly inconsistent with the invention and wrong. Rather, every vehicle with an engine can operate in a "state of overinjection" as a result of inefficient driver operation.

In the claimed invention, certain sensor data is used by a processor subsystem to trigger driver notifications regarding driver fuel inefficient operation and/or driver unsafe operation, not affect how fuel is injected into the vehicle's engine.

The Patent describes an inventive system that "notifies a driver of recommended corrections in vehicle operation and, under certain conditions, automatically initiates corrective action." (*See* '781 Patent, at col. 1:7-9.) For example, in the Background of the Invention, the Patent describes how "fuel efficiency of a vehicle may vary dramatically based upon how the vehicle is operated. More specifically, operating a vehicle at excessive speed, excessive RPM and/or excessive manifold pressure will result in both reduced fuel economy and increased operating costs." (See id. at col. 1:11-16.) The Patent continues: "To correct these type of ***improper vehicle operations*** are often surprisingly simple … However, even when the solution is quite simple, oftentimes, the driver will be unaware of the need to take corrective action." (*See id.* at col. 1:19-26 (emphasis added).) Accordingly, the system of the Patent aims to issue notifications that suggest a driver change how he or she is operating a vehicle in order to improve fuel economy/efficiency and safety.

One embodiment of a notification in the Patent is an "overinjection notification." In the preferred embodiment, the system analyzes inputs from one or more sensors to make determinations regarding the vehicle's "fuel consumption." (*See id.* at col. 11:41 & col. 12:28-29.) Based on these determinations, when appropriate, the system provides "overinjection notifications" and/or "upshift/downshift notifications" that advise a driver

if his or her driving is fuel inefficient.[1] The system in the preferred embodiment therefore recommends actions (*e.g.*, easing off the throttle or slowing down when speeding) that, if taken by the driver, will result in "greater fuel efficiency." (*See id.* at col. 13:44.)[2]

Stated another way, the invention of the Patent is not directed at a particular internal combustion engine programmed to inject fuel according to one scheme versus another internal combustion engine programmed to inject fuel according to another scheme. The claims in the Patent discussed by the Examiner are broadly directed at all fuel-consuming engines in vehicles.[3] Accordingly, the Patent describes that all engines in vehicles will inject as much fuel as driver demands by his or her operation of the vehicle. If the driver operates the vehicle in a fuel inefficient manner (*e.g.,* excessively speeding, abruptly accelerating, etc.), the engine will overinject more fuel than the engine would if the vehicle were being operated efficiently. In that circumstance, the inventive system of the Patent will provide the driver with a "overinjection notification" as an alert that his or her driving is fuel inefficient.

Moreover, again in the interest of a clear record, the Patent Owner addresses certain prior art identified by the Requester and discussed by the Examiner. The Patent Owner agrees that none of the prior art anticipates or renders obvious the examined patent claims.

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[1] The upshift and downshift notifications are also related to fuel efficiency and protecting the engine from overreving (excessive engine speed) or lugging (insufficient engine speed).

[2] The preferred embodiment also provides additional notifications regarding safe operation of the vehicle. It also describes situations where the system automatically alters operation of the vehicle in certain situations (*e.g.*, controlling the throttle).

[3] To be clear, Claim 31 is not limited to fuel-consuming engines.

First, the Examiner properly notes that what the Requester calls "Jurgen" does not render the claims invalid. At the threshold, however, the Requester has improperly presented "Jurgen" as a single prior art reference. Jurgen is actually a collection of chapters or articles written by different authors describing different vehicles (or, more accurately, particular implementations of components in different vehicles) entitled by "Automotive Electronics Handbook," and edited by Mr. Jurgen. The sections of the chapter discussed by the Examiner are actually written by Gary Hirschlieb, Gottfried Schiller & Shari Stottler. The chapters Requester calls "Jurgen" therefore are at best a number of discrete prior art references properly analyzed under section 103. *See Kyocera Wireless Corp. v. International Trade Comm'n*, 545 F.3d 1340, 1351-52 (Fed. Cir. 2008) (holding that specifications collected in the GSM standard which had different authors were a section 103 prior art combination, not a single section 102 prior art reference).

Moreover, "unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations ***arranged or combined in the same way as recited in the claim***, it cannot be said to prove prior invention of the thing claimed and thus cannot anticipate[.]") *NetMoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (emphasis added); *see also Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010) (""The way in which elements are arranged or combined in the claim must itself be disclosed … in an anticipatory reference.") Because anticipation requires that prior art elements must themselves be "arranged as in the claim," the claims must not be "treated … as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning." *Lindemann Maschinen-fabrik*

GMBH v. Am. Hoist & Derrick Co., 730 F.2d 1452, 1459 (Fed. Cir. 1984). Beyond mislabeling "Jurgen" as a single prior art reference, Requester made the legal error of treating the patent claims as a mere catalogue of parts from which it may pick and choose from various chapters to construct ***some*** of the elements of the claims. *See In re Arkley*, 455 F.2d 586, 587 (CCPA 1971) (holding that "picking, choosing and combining various disclosures not directed related to each other" is legal error). Of course, Requester does not even allege that what it calls "Jurgen" anticipates any claims. Therefore, Requester made the next step of combining the various unrelated, cobbled-together parts of what it called "Jurgen" with other prior art references. Such hindsight cherry picking (particularly without anything other than conclusory lip service to motivation to combine) is the classic example of what is strictly forbidden for an obviousness inquiry. The Examiner correctly rejected Requester's position. Nevertheless, in the interest of a clear prosecution record, Patent Owner has explained why there is no "Jurgen" reference.

In all events, the sections of the chapter in "Jurgen" referenced by the Examiner do not disclose any notification to a driver. Rather, the sections discuss a fuel shutoff scheme that is invisible to the driver. Under certain circumstances, depending on throttle position, engine speed and vehicle speed, the fuel shutoff scheme will result in turning off fuel injection during braking or coasting. That is, if appropriate, the engine will automatically execute a fuel saving strategy when the vehicle is slowing down to a stop. The sections of the chapter in "Jurgen" referenced by the Examiner, however, say nothing at all about driver contributions to fuel inefficiency that can be corrected. Accordingly, not only does the chapter sections relied upon by the Examiner fail to disclose the notification(s) required by the claim(s), it also does not discuss fuel

inefficient operation by a driver. The Patent Owner respectfully submits that the sections of the chapter of "Jurgen" discussed by the Examiner are marginally relevant at best.

Second, the Patent Owner agrees with the Examiner that "the Volkswagen '070's teachings are directed towards shifting the gears of an engine." The Examiner states that the Volkswagen '070 notes, according to the English translation, "a display of the rout-specific fuel consumption provide in a vehicle." But, as the Examiner correctly concludes, the Volkswagen '070 fails to disclose issuance of notifications (*e.g.*, a light that goes on or off when appropriate, a horn or chime that sounds when appropriate, a visual indication showing a deviation below a mean value when appropriate, etc.) when a driver is operating a vehicle in a fuel inefficient manner.[4]

Litigation Activity

According to 37 C.F.R. 1.565(a), Applicants notify the Office that the following cases have been stayed until resolution of the present reexamination proceeding: *Velocity Patent LLC v. Mercedes-Benz USA, LLC*, Civil Action No. 1:13-cv-08413 (N.D. Ill.); *Velocity Patent LLC v. Audi of America, Inc.*, Civil Action No. 1:13-cv-08418 (N.D. Ill.); *Velocity Patent LLC v. Chrysler Group, LLC*, Civil Action No. 1:13-cv-08419 (N.D. Ill). Under the circumstances, Patent Owner has responded to the Office Action in less than a month so that present reexamination might continue to proceed with special dispatch. Patent Owner thanks the Examiner in advance for the Examiner's diligent attention to this matter so that the litigation stays identified above may be lifted shortly.

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[4] Patent Owner believes that many additional claim elements are not disclosed by the Volkswagen '070, and has identified them in the related litigation(s). Requester of course concedes that the Volkswagen '070 does not anticipate any patent claims.

Patent Owner also notes for the Examiner's attention the pending petition for inter partes review filed by Mercedes-Benz USA, LLC and Mercedes-Benz U.S. International, Inc. concerning claims 31 and 32. The petition can be located at *Mercedes-Benz USA, LLC et. al. v. Velocity Patent, LLC*, Case IPR 2014-0127. Patent Owner believes that, in light of Patent Owner's amendment to Claim 31 here, the petition must denied as a matter of law.

Claim Rejections

Claim 31 is rejected under 35 U.S.C. 102(b) as being unpatentable over Davidian (U.S. Patent No. 5,357,438).

Without conceding that the Examiner's stated reasons in support of the rejection are correct, the Patent Owner has amended Claim 31, thereby mooting the Examiner's rejection. The Patent Owner respectfully submits that the elements added to Claim 31 are not disclosed in either Davidian or Tonkin. Specifically, both Davidian and Tonkin fail to disclose (1) an engine speed sensor, (2) a throttle controller for controlling a throttle of said engine of said vehicle, (3) wherein said processor subsystem selectively reduces said throttle based upon the data received from said radar detector and (4) further wherein the processor subsystem includes (i) an active mode in which the processor subsystem activates the vehicle proximity alarm circuit to issue the vehicle proximity alarm and reduces the throttle based upon the data received from said radar detector, and (ii) an inactive mode in which the processor subsystem activates the vehicle proximity alarm circuit to issue the alarm and the throttle is not selectively reduced based upon the data received from said radar detector. Patent Owner respectfully submits that Claim 31 is now

significantly and patentably distinct from Davidian, Tonkin or any combination of the two (which Patent Owner does not concede threw would be any motivation to do).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidian in view of Tonkin (PCT Pub. No. WO/02853). Claim 32 depends from Claim 31, which is patentable for reasons discussed above. Accordingly, the Examiner's rejection is moot.

New Claims

Because new claims 33-59 depend from confirmed patentable claims 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17-30, the new claims are also patentable. New claims 60-84 depend from amended claim 31, which is patentable for reasons discussed above. While Patent Owner believes that all of the examined claims are patentable over the prior art of record, out of an abundance of caution, Patent Owner has submitted the new dependent claims to further distinguish all of the prior art cited by Requester under the provisions of 35 U.S.C. § 301.

Conclusion

In view of the foregoing remarks, Patent Owner submits that all of the currently pending claims are in allowable form and that the application is in condition for allowance. Therefore, Patent Owner respectfully requests that a timely Notice of Allowance be issued in this case. If for any reason the Examiner is unable to allow the application and feels that an interview would be helpful to resolve any remaining issues, the Examiner is requested to contact the undersigned attorney at (312) 283-8555.

Respectfully submitted,

RICHARDS PATENT LAW PC

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Registration. No. 48,905

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Date: November 3, 2014

PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	90013252
Filing Date	2014-05-22
First Named Inventor	HARVEY SLEPIAN
Art Unit	3992
Examiner Name	England, David E.
Attorney Docket Number	1089-001

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	130	5072703		1991-12-17	Loran W. Sutton	
	131	5222469		1993-06-29	Loran W. Sutton	
	132	5317998		1994-06-07	Jay L. Hanson	
	133	5432497		1995-07-11	Tony Briski	

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

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	1							☐

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
	92	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 49 Velocity Patent LLC's Motion to Compel Local Patent Rule 2.1(b)(1) Disclosures and Responses to Discovery, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-04-08, Chicago, Illinois.	☐
	93	AUDI OF AMERICA, INC, Case No. 13-CV-08418 Docket # 70 Response by Audi of America, Inc. in Opposition to Motion by Plaintiff Velocity Patent LLC to Compel Local Patent Rule 2.1(b)(1) Disclosures and Responses to Discovery, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-05-09, Chicago, Illinois.	☐
	94	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 72 Reply by Velocity Patent LLC In Support of Its Motion to Compel Local Patent Rule 2.1(b)(1) Disclosures and Responses to Discovery, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-05-22, Chicago, Illinois	☐
	95	AUDI OF AMERICA, INC, Case No. 13-CV-08418 Docket # 77 Audi of America's Motion to Strike New Arguments Presented in Velocity Patent LLC's Reply in Support of Its Motion to Compel or, In the Alternative, For Leave to File A Sur-Reply Brief, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-06-05, Chicago, Illinois.	☐
	96	HONORABLE JUDGE MICHAEL T. MASON, Case No. 13-CV-08418 Docket # 79 Minute Entry - Defendant's motion to strike plaintiff's reply or for leave to file a sur-reply [77] is granted as follows. Defendant's sur-reply, attached as Exhibit A to its motion, will be considered by the Court. Plaintiff's reply stands., District Court for the Northern District of Illinois Eastern Division, Judge Minute Entry, 2014-06-05, Chicago, Illinois.	☐
	97	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 80 Velocity Patent LLC's Motion to Compel Local Patent Rule 2.4(a) Disclosures, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-06-06, Chicago, Illinois.	☐
	98	AUDI OF AMERICA, INC, Case No. 13-CV-08418 Docket # 83 Audi of America, Inc's Brief in Opposition to Plaintiff's Motion to Compel Local Patent Rule 2.4(a) Disclosures, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-06-23, Chicago, Illinois.	☐
	99	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 84 Velocity Patent LLC's Reply to Audi's Opposition to Compel Local Patent Rule 2.4(a) Disclosures, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-06-30, Chicago, Illinois.	☐

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	Attorney Docket Number	1089-001

	100	HONORABLE JUDGE MICHAEL T. MASON, Case No. 13-CV-08418 Docket # 91 Order by Honorable Judge Mason Granting in Part and Denying in Part Velocity Patent LLC's Motion to Compel 2.1(b)(1) Discovery, District Court for the Northern District of Illinois Eastern Division, Judge's Order, 2014-07-11, Chicago, Illinois.	☐
	101	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 99 Velocity Patent LLC's Objection to Order Regarding Plaintiff's Motion to Compel LPR 2.1(b)(1) Disclosures and Responses to Discovery and Plaintiff's Motion to Compel LPR 2.4(a) Disclosures, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-07-25, Chicago, Illinois.	☐
	102	AUDI OF AMERICA, INC, Case No. 13-CV-08418 Docket # 101 Audi Of America, Inc.'s Objections to Magistrate Judge Mason's Order Granting-In-Part Plaintiff's Motion to Compel, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-07-28, Chicago, Illinois.	☐
	103	HONORABLE JUDGE John W. Darrah, Case No. 13-CV-08418 Docket # 106 Order - Audi's Motion to Dismiss for Failure to State a Claim [36] is Denied, District Court for the Northern District of Illinois Eastern Division, Judge's Order, 2014-08-20, Chicago, Illinois.	☐
	104	HONORABLE JUDGE John W. Darrah, Case No. 13-CV-08418 Docket # 107 Memorandum Opinion and Order - Audi's Motion to Dismiss for Failure to State a Claim [36] is Denied, District Court for the Northern District of Illinois Eastern Division, Judge's Order, 2014-08-20, Chicago, Illinois.	☐
	105	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 109 Velocity Patent LLC's Motion to Compel Discovery Relating to Past Damages, District Court of the Northern District of Illinois Eastern Division, Case Pleading, 2014-09-03, Chicago, Illinois.	☐
	106	AUDI OF AMERICA, INC, Case No. 13-CV-08418 Docket # 110 Audi's Response to Velocity Patent LLC's Objection to Magistrate Judge Mason's July 11, 2014 Order Granting-In-Part Plaintiff's Motion to Compel, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-09-03, Chicago, Illinois.	☐
	107	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 112 Velocity Patent LLC's Motion for Leave to File a Reply Brief, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-09-15, Chicago, Illinois.	☐
	108	HONORABLE JUDGE John W. Darrah, Case No. 13-CV-08418 Docket # 114 Minute Entry - Plaintiff's Motion for Leave to File Reply to Audi's Opposition to Motion to Compel Discovery Relating to Past Damages [112] is granted, District Court for the Northern District of Illinois Eastern Division, Judge Minute Entry, 2014-09-16, Chicago, Illinois.	☐
	109	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 115 Velocity Patent LLC's Reply to Audi of America, Inc.'s Opposition to Motion to Compel Discovery Relating to Past Damages, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-09-16, Chicago, Illinois.	☐
	110	AUDI OF AMERICA, INC, Case No. 13-CV-08418 Docket # 118 Audi of America, Inc.'s Sur-Reply to Velocity Patent LLC's Objection to Magistrate Mason's July 11, 2014 Order Granting-In-Part Plaintiff's Motion to Compel, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-10-15, Chicago, Illinois.	☐

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	Examiner Name	England, David E.
	Attorney Docket Number	1089-001

	111	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 120 Velocity Patent LLC's Response to Audi of America, Inc.'s Sur-Reply Regarding Velocity Patent LLC's Objection to Judge Mason's July 11, 2014 Order Regarding Plaintiff's Motion to Compel, District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-10-21, Chicago, Illinois.	☐
	112	MERCEDES-BENZ USA, LLC ET. AL. v. VELOCITY PATENT LLC, Case IPR2014-01247, Patent No. 5954781, Application No. 08813270, USPTO, Filing Date 2014-08-04.	☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

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Filing Date	2014-05-22
First Named Inventor	HARVEY SLEPIAN
Art Unit	3992
Examiner Name	England, David E.
Attorney Docket Number	1089-001

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Patrick D. Richards/	Date (YYYY-MM-DD)	2014-11-03
Name/Print	Patrick Richards	Registration Number	48905

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	20594828
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-NOV-2014
Filing Date:	22-MAY-2014
Time Stamp:	18:43:22
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Response.pdf	279416 71f3e3405bd051e86fd63bf6cf1dc86a691f5852	no	37

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-79

2	Information Disclosure Statement (IDS) Form (SB08)	SuppIDSForm.pdf	1908073 72309a362e254c873b0db1d87d4139cc8c83479e	no	6
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Information:					
This is not an USPTO supplied IDS fillable form					
3	Other Reference-Patent/App/Search documents	Ref1-12.pdf	24247073 b396331dce91b8dbab72b0687f3ed61bfc982b2e	no	284
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	Ref25-36-1.pdf	12556895 3fd2b3147f3146d43e2685884eac501f09569690	no	500
Warnings:					
Information:					
5	Other Reference-Patent/App/Search documents	Ref25-36-2.pdf	5128118 4d143262c5889027016d7f2e5e624738af246fef	no	500
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6	Other Reference-Patent/App/Search documents	Ref25-36-3.pdf	5463643 3b289bc864dff6d49025a344804f942d03c2b577	no	501
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7	Other Reference-Patent/App/Search documents	Ref25-36-4.pdf	11822684 6f12ea56863592d65a45af4c392a23a89074a1f3	no	264
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8	Other Reference-Patent/App/Search documents	Ref37-39.pdf	5419113 455086aace536c72d987a91226c0042411544121	no	64
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9	Other Reference-Patent/App/Search documents	14US5357438Davidian.pdf	1944631 93f6d9e27156166861263fc217f93044dce53d25	no	41
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10	Other Reference-Patent/App/Search documents	16EP0549909SecondaryReference.pdf	718992 d1faa094e76459d08c7bf4b9d16d0214753a07e7	no	15

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11	Other Reference-Patent/App/Search documents	13EP0392953Tresse.pdf	2499496 21bc311686b356e8261ea3fa06f445d3bc8c4db5	no	33
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12	Other Reference-Patent/App/Search documents	15WO9107672Montague.pdf	3040852 8c1afb56aafa3255427222d118f746868a0098a1	no	29
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13	Other Reference-Patent/App/Search documents	17WO9602853SecondaryReference.pdf	4941845 2ceb08049b3e45bf056f92e26cf5edd1a50ebddd	no	43
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Information:					
14	Other Reference-Patent/App/Search documents	18DeclofDrChrisGBartoneinSupportofMercedesPetition.pdf	839924 3c3c2a5b23b79e736fae938400a4b44c6ff70c24	no	52
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15	Other Reference-Patent/App/Search documents	19CVofDrChrisBartone.pdf	313573 028d630a7c32081eb867dd201e711a2a20d8fc50	no	23
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16	Other Reference-Patent/App/Search documents	2014-04-08Dkt49MOTIONTOCOMPELLOCALPATENTRULE21b1DISCLOSURESANDRESPONSESTODISCOVERY.pdf	1091830 18baab4ba47e821fa1d680c06755e9aef742f51b	no	90
Warnings:					
Information:					
17	Other Reference-Patent/App/Search documents	2014-05-09Dkt70AudiBriefInOppositiontoVelocityMotionToCompel.pdf	12567390 bb40958e299a062df382e646edf8f83d21e72a48	no	64
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18	Other Reference-Patent/App/Search documents	2014-06-05Dkt77AudiMottoStrikeNewArgumentsorFileaSur-ReplyinVelocityReplyMTC.pdf	182519 f05b775a614a40e4ff2d9f26ed3a160d80d504c8	no	9
Warnings:					
Information:					
19	Other Reference-Patent/App/Search documents	2014-06-05Dkt79MasonEntryAudiSur-ReplyWillbeConsidered610NoticeofMotionStricken.pdf	63737 57e0767496347998fbce25d043894ed78[illegible]baf96	no	1

Warnings:	
Information:	
Total Files Size (in bytes):	95029804

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	20595498
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-NOV-2014
Filing Date:	22-MAY-2014
Time Stamp:	20:36:51
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-1.pdf	317993 884b7dd14eb7d078698b205cd73d12a4275d6bdd	no	20

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-83

2	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-2.pdf	18481510 348d5b16ae8180920eabca44fc3b67093ce9d929	no	20
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Information:					
3	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-3-1.pdf	2102924 bffdae471eda4ec35f5bf308b536edc864155aa1	no	1
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-3-2-1.pdf	15090565 074d0350c09bfd9cdc6284f82d37ec12485d59e0	no	10
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5	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-3-2-2.pdf	14309342 b171e911c15f2859cf5a311354bf974b2fc665db	no	9
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6	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-4-1.pdf	13146011 2bbcb830ee3e366f2d53bf3fcbf90bd1d96a9133	no	10
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7	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-4-2.pdf	14742345 74b2c61ed6dfaec76dac3ebfcb9b296159cfba83	no	10
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8	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-5-1.pdf	1726345 6e093652f1e5c8105e88dfb927c0718719be81a6	no	1
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10	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-6-1.pdf	15216853 01d13033f41784c1608a80a2fd7158d2a7fbd676	no	10
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Information:					

11	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-6-2.pdf	14760007 c49b5380aaf73d0c8eab1c3d816b62526bf42612	no	10
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16	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-9-1.pdf	14768645 c94d2964dfe06b5bfd664af87e5915a7fb65e906	no	10
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17	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-9-2.pdf	13215851 c4e803e0def3b384c5b173c350bd4115c4c7daa2	no	10
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18	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-10-1.pdf	14690684 b69b7955adf20c762d533a830cbc036e18a8b491	no	10
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19	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-10-2.pdf	13632786 17561dd6ffd2d0916660d0ab2a9c280a443af15c	no	10
Warnings:					
Information:					

Total Files Size (in bytes):	237544717

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	20595927
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-NOV-2014
Filing Date:	22-MAY-2014
Time Stamp:	21:11:38
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-11-1.pdf	15013610 87ddd002c243484a4cf57c6f74654fee7d112aa6	no	10

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-87

2	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-11-2.pdf	14494933 051eee8e4313207b8738bb9eea266301d3d708fe	no	10
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3	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-12-1.pdf	16220165 240655760f6d7bdcca73cf01a9a74166f826998d	no	10
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Information:					
4	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-12-2.pdf	15969283 a6231ea7eabc66c176954059e9f3e4f74e21dc91	no	10
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Information:					
5	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-13-1.pdf	15465265 2de26992daf59940202a6eba378733282df340b0	no	10
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6	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-13-2.pdf	13006816 c0f01b48767af9545271110bfce6ea06d8188941	no	10
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Information:					
7	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-14-1.pdf	14708579 c7ad25ec296e7ec2feec5964437fd343bc898620	no	10
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Information:					
8	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-14-2.pdf	12914253 abeb125a5216443b28cec9b580ee2ff1da6a7655	no	10
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9	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-15-1.pdf	13945775 afa3322b69d85cce9723b102b78589c4b557a3f6	no	10
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10	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyreMTC-15-2.pdf	14871699 d2971ef2e69d0c6b4656228953f6c6894085bc41	no	10
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11	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-16-1-1.pdf	17830273 2de89897225187fabbe2b3d0a6ec76fb47e4f736	no	12
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12	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-16-1-2.pdf	19651786 b44d9993463d6b564c9aa9066668881661efafcc	no	13
Warnings:					
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13	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-16-2-1.pdf	16348921 476ee3498d1acc66f527aea42d91eb1d3e129b46	no	12
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14	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-16-2-2.pdf	19673553 a7f090507a573b2b3b3bf12b2a0ab3ffb0274519	no	13
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15	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-17-1.pdf	18679264 f4175a05d307d747d92891a8b76d976e6a443fff	no	15
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16	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-17-2.pdf	16387744 c7f0aacace7e71b9a077a3300a9ee2bc39c02bd8	no	15
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17	Other Reference-Patent/App/Search documents	2014-05-22Dkt72VelocityReplyneMTC-18.pdf	22458043 5143f6f8e999bb9d2d2eefed6b953c56c5c6a662	no	38
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,252	05/22/2014	5,954,781		9999

88360 7590 10/21/2014

Richards Patent Law P.C.
233 S. Wacker Dr., 84th Floor
Chicago, IL 60606

EXAMINER	
ENGLAND, DAVID E	
ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
10/21/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

MERCEDES EXHIBIT 1012-91

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
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KENYON & KENYON LLP

ONE BROADWAY

NEW YORK, NY 10004

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/013,252*.

PATENT NO. *5,954,781*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

MERCEDES
EXHIBIT 1012-92

Office Action in Ex Parte Reexamination	Control No. 90/013,252	Patent Under Reexamination 5,954,781	
	Examiner DAVID ENGLAND	Art Unit 3992	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

a. ☒ Responsive to the communication(s) filed on *06/27/2014* .
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

b. ☐ This action is made FINAL.

c. ☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire _____ month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☒ Information Disclosure Statement, PTO/SB/08.
3. ☐ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☒ Claims *1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 32* are subject to reexamination.

1b. ☒ Claims *3,6,9,11,14 and 16* are not subject to reexamination.

2. ☐ Claims _____ have been canceled in the present reexamination proceeding.

3. ☒ Claims *1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 30* are patentable and/or confirmed.

4. ☒ Claims *31,32* are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ The drawings, filed on _____ are acceptable.

7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.

8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
1 ☐ been received.
2 ☐ not been received.
3 ☐ been filed in Application No. _____ .
4 ☐ been filed in reexamination Control No. _____.
5 ☐ been received by the International Bureau in PCT application No. _____.
* See the attached detailed Office action for a list of the certified copies not received.

9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.

10. ☐ Other: _____

cc: Requester (if third party requester)

DETAILED EX PARTE REEXAMINATION NON-FINAL OFFICE ACTION

I. INTRODUCTION

This is a first Non-Final Office Action on the merits in the *Ex Parte* Reexamination of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 32 of US Patent No. US 5,954,781 to Slepian et al., hereinafter "the '781 Patent".

The present application is being examined under the pre-AIA first to invent provisions.

A. References Cited in this Office Action

1. The prior art patents and/or printed publications, hereinafter "the references", which have been submitted 08/22/2014, have been considered and are relied upon in this Office Action are relisted as follows.

a. Automotive Electronics Handbook, by Ronald Jurgen ("Jurgen").

b. U.S. Patent No. 5,477,452 to Milunas et al. ("Saturn '452").

c. U.S. Patent No. 4,559,599 to Habu et al. ("Toyota '599").

d. German Patent Application Publication No. 29 26 070 ("Volkswagen '070").

e. U.S. Patent No. 5,357,438 to Davidian ("Davidian").

f. PCT Publication No. WO 96/02853 ("Tonkin").

II. REJECTIONS

A. Relevant Statutes – Claim Rejections

1. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

B. Detailed Analysis of the Rejection

The Examiner will use the shorthand notation of "1:1-5" for Column 1, lines 1-5.

1. Claim **31 is** rejected under **pre-AIA 35 U.S.C. 102(b)** as being unpatentable over U.S. Patent No. 5,357,438 to Davidian, hereinafter "**Davidian**".

RE: Claim 31

Apparatus for optimizing operation of a vehicle, comprising:

Davidian discloses an invention relating to an anti-collision system for vehicles. Therefore, preventing a vehicle from colliding with an object could result in the vehicle operating optimally.

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

It is seen in the '781 Patent the "radar detector" or as also stated in the specification, "radar device", is not specifically defined. It only states what its function. Davidian discloses such a device, "Vehicle 2 further includes a front space sensor 8 for sensing the space in front of the vehicle, such as the presence of another vehicle, a corresponding rear space sensor 10, and a pair of side sensors 11. All the space sensors are in the form of pulse (e.g., ultrasonic) transmitters and receivers, for determining the distance of the vehicle from an object, e.g., another vehicle, at front or rear. Space sensors may also be provided at the sides of the vehicle. Vehicle 2 is further equipped with a speed sensor 12 which may sense the speed of the vehicle in any known manner, for example using the speed measuring system of the vehicle itself, or a speed measuring system independent of the vehicle, e.g., an acceleration sensor, or by calculations based on the Doppler effect, etc.", (e.g., Davidian, 4:52-66).

Davidian further discloses, "FIG. 7 is a circuit diagram of the microcomputer 4 and the other components of the electrical system. The microprocessor is indicated by block 100, its power supply by block 102, and its watchdog circuit by block 104. It includes a **transmitter** 106 and a **receiver** 108 for transmitting and receiving the pulses (e.g., RF, ultrasound, laser, IR, etc.) in the front space sensor 8 and the rear space sensor 10 for measuring the distance of the vehicle

from objects in front of and to the rear, of the vehicle, respectively.", (e.g., Davidian, 10:17 – 26).

Davidian further discloses, "As indicated earlier, the distance of the vehicle from an object is determined by the front space sensor 8 with respect to objects in front of the vehicle, and by the rear space sensor 10 with respect to objects at the rear of the vehicle. Each of these space sensors may be of known construction, including a transmitter as indicated at 106 in FIG. 7, and a receiver as indicated at 108. Thus, pulses are continuously transmitted by each transmitter, and the echoes from the objects in front of or to the rear of the vehicle are received by the respective receiver. The computer then measures the round-trip time from the pulse transmission to the echo reception in order to determine the distance of the vehicle from the object.", (e.g., Davidian, 10:38 – 50).

at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor;

Davidian discloses "Vehicle 2 is further equipped with a speed sensor 12 which may sense the speed of the vehicle in any known manner, for example using the speed measuring system of the vehicle itself, or a speed measuring system independent of the vehicle, e.g., an acceleration sensor, or by calculations based on the Doppler effect, etc," (e.g. Davidian, 4:60 – 66).

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

Davidian discloses, "FIGS. 6a, 6b, are a block diagram illustrating the microcomputer 4 and its inputs and outputs described earlier which enable it to continuously monitor the operation of the vehicle and to actuate first a Safety alarm, and then a Collision alarm whenever the vehicle may enter a danger-of-collision situation according to the various preset parameters and automatic parameters introduced into the computer. The microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: a calculation module 90, which receives data concerning the various parameters briefly described above and as will be described more particularly below to enable it to make the necessary computations for actuating the Safety alarm and the Collision alarm.", (e.g., Davidian, 8:29 – 43). "Thus, module 90 receives inputs from the front space sensor 8, the rear space sensor 10, and the vehicle speed sensor 12.", (e.g., Davidian 8:58 – 60).

E.g., Davidian, Figure 6A:

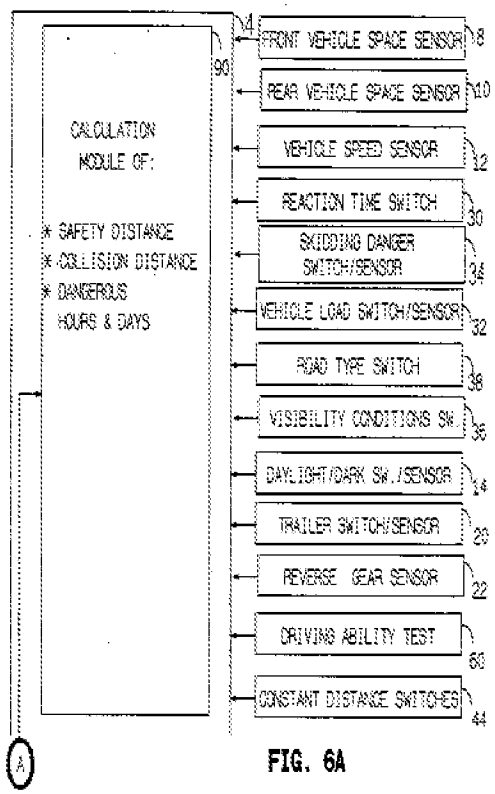

FIG. 6A

E.g., Davidian, Figure 6B:

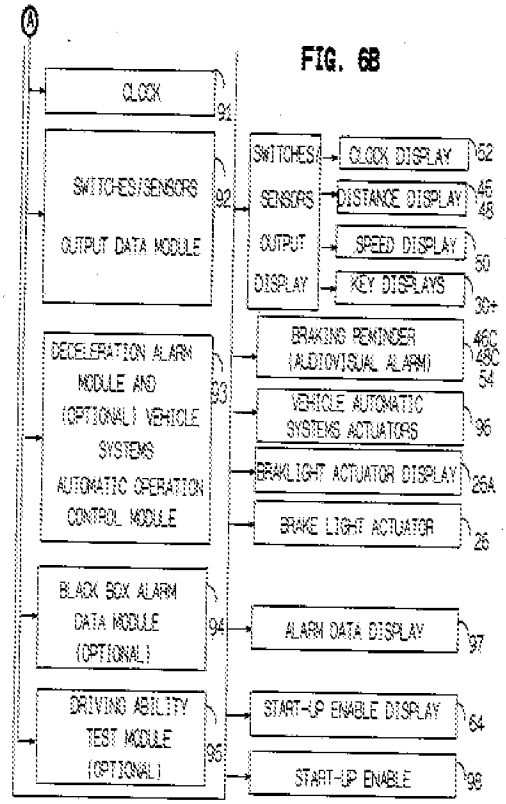

FIG. 6B

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table;

Davidian discloses "Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table, for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.", (e.g., Davidian, 9:20 – 27).

"The system then makes the computations illustrated (as an example) in block 162 to determine the stopping distance SD, which is equal to the reaction distance plus the braking distance multiplied by a stopping factor ST and a safety factor SF. In the illustrated example, the stopping distance is the sum of the reaction distance and the braking distance. The reaction distance is the product of the reaction time, visibility condition, daylight condition, reaction factor and **speed**; and the braking distance is the product of the braking distance (as supplied by the manufacturer), road type, skidding danger, vehicle load and braking factor. The stopping distance (SD) includes further safety factors, and determines when the safety alarm will be actuated to first alert the driver of an approaching collision danger. A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then actuated. The foregoing calculations of stopping distance SD and collision distance CD with respect to objects at the front of the vehicle are also made with respect to objects at the rear of the vehicle, these calculations being RSD and RCD, respectively, also shown in block 162. Whenever the distance between the vehicle and an object to the front of the vehicle or to the rear of the vehicle comes within the stopping distance SD and the collision distance CD, the system operates according to the deceleration alarm module 93, as indicated by block 164.", (e.g., Davidian, 12:59 – 13:22).

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

Jurgen discloses an, "anti-collision system illustrated in FIGS. 1-14 is particularly useful for motor vehicles (passengers cars, buses, trucks) in order to actuate an alarm when the vehicle is travelling at a distance behind another vehicle or in front of another, which is equal to or less than a danger-of-collision distance computed by a computer such that if the front vehicle stops suddenly there is a danger of a rear-end collision.", (e.g., Davidian, 3:59 – 66).

"In the system described below, there are two alarms: a Collision alarm, which is actuated when the vehicle is determined to be within the danger-of- collision distance; and a Safety alarm, which is actuated before the Collision alarm, at a distance greater than the danger-of-collision distance by a predetermined safety factor, e.g., 1.25.", (e.g., Davidian, 4:14 – 16).

"Control panel 6 further includes a front distance display 46, in which are displayed the distance to the front vehicle (in region 46a), in which direction (by arrow 46b), and whether or not there is a collision danger (region 46c).", (e.g., Davidian, 6:25 – 29).

"Control panel 6 further includes a speaker 54 for producing an audio alarm in the event of a collision danger, in addition to the visually-indicated alarms of sections 46c and 48c of the displays 46 and 48.", (e.g., Davidian, 6:41 – 46).

"The microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: ... a deceleration alarm module 93, which controls the Safety alarm and Collision alarm on the control panel, ...", (e.g., Davidian, 8:37 – 48, and Figs. 3, (ref. no. 46 & 48) and 6B, (ref. no. 46C & 48C).

said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.

Jurgen discloses a, "microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: a calculation module 90, which receives data concerning the various parameters briefly described above and as will be described more particularly below to enable it to make the necessary computations for actuating the Safety alarm and the Collision alarm; ...", (e.g., Davidian, 8:37 – 43).

"Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a **look-up table**, for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.", (e.g., Davidian, 9:20 – 27).

"The system then makes the computations illustrated (as an example) in block 162 to determine the stopping distance SD, which is equal to the reaction distance plus the braking distance multiplied by a stopping factor ST and a safety factor SF. In the illustrated example, the stopping distance is the sum of the reaction distance and the braking distance. The reaction distance is the product of the reaction time, visibility condition, daylight condition, reaction factor and **speed**; and the braking distance is the product of the braking distance (as supplied by the manufacturer), road type, skidding danger, vehicle load and braking factor. The stopping distance (SD) includes further safety factors, and determines when the safety alarm will be

actuated to first alert the driver of an approaching collision danger. A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then actuated", (e.g., Davidian, 12:59 – 13:11).

"Whenever the distance between the vehicle and an object to the front of the vehicle or to the rear of the vehicle comes within the stopping distance SD and the collision distance CD, the system operates according to the deceleration alarm module 93, as indicated by block 164.", (e.g., Davidian, 13:17 – 22).

2. Claim **32 is** rejected under **pre-AIA 35 U.S.C. 103(a)** as being unpatentable over **Davidian** in view of PCT Publication No. WO 96/02853 to Tonkin, hereinafter "**Tonkin**".

RE: Claim 32

Apparatus for optimizing operation of a vehicle according to claim 31 wherein:

Davidian discloses such as explained above in independent claim 31.

said at least one sensor further includes a windshield wiper sensor for indicating whether a windshield wiper of said vehicle is activated; and

The Requester points out in the request, page that:

During prosecution of the '781 Patent, the Applicants stated that "the windshield wiper sensor [of claim 32] is **not** used to inform the operator as to whether the windshield wipers are on or off." Rather, according to the Applicants, "the sensor is used by the processor subsystem to classify road conditions as either **'dry' or 'wet'**.", (e.g., Application 08/813,270, Response to Non-Final Office Action, dated 02/19/1999, page 12). When finding the specific teachings in the '781 Patent's specification, 9:35—47, it is seen that if the windshield wiper is off it is concluded that the vehicle is operated in "dry conditions" and selects a first speed/stopping distance table, if the windshield wiper are on it is concluded that the vehicle is operated in "wet conditions" and selects a second speed/stopping distance table. Therefore, 'off = dry' and 'on = wet'.

. If the state of the wiper sensor **32** indicates that the windshield wiper is off, the processor subsystem **12** concludes that the vehicle is being operated in dry conditions and selects the speed/stopping distance table stored at the location **14***c* of the memory subsystem **14**. If, however, the state of the wiper sensor **32** indicates that the windshield wiper is on, the processor subsystem **12** concludes that the vehicle is being operated in wet conditions and selects the speed/stopping distance table stored at the location **14***d* of the memory subsystem **14**. From the selected speed/stopping distance table **14***c* or **14***d*, the processor subsystem **12** then retrieves the stopping distance for the speed at which the vehicle is travelling.

Therefore, under this interpretation, Davidian describes that the automatic sensors of the vehicle include a rain sensor 16, "The automatic sensors on vehicle 2 further include a daylight sensor 14, a rain sensor 16, a vehicle load sensor 18, a trailer-hitch sensor 20, and a reverse gear sensor 22.", (e.g., Davidian, 4:67 – 5:2), and, "Module 90 also receives inputs from the sensors in case there is no depressible key, e.g., the daylight sensor 14, the trailer sensor 20, the reverse gear sensor 22, the rain sensor 16, and the vehicle load sensor 18.", (e.g., Davidian, 8:58 – 63). (col. 4, line 67 to col. 5, line 2). Furthermore, Davidian discloses keys that if depressed would

take into consideration road conditions and alter parameters in determining braking distance, i.e., "slippery conditions of the road", (e.g., Davidian, 5:54 – 66),

> Control panel 6 includes two keys 34 indicating the condition of the road with respect to the danger of skidding thereon by the vehicle. Thus, key 34*a* would be depressed to indicate a slippery condition of the road and therefore a high danger of skidding, whereas key 34*b* would be depressed to indicate an unslippery condition of the road (e.g., dry) and therefore a low danger of skidding.
>
> Two keys 36 on the control panel 6 indicate the visibility condition of the road. Thus, key 36*a* would be depressed where the visibility condition is high, whereas key 36*b* would be depressed where it is low, e.g., because of fog, sandstorm, snow, etc.

and (e.g., Davidian, 9:20 – 27).

> Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table, for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.

It can be interpreted that the activation of the key is much the same as activating a windshield wiper.

Tonkin describes that safe stopping distances can be adjusted for prevailing weather conditions, and that information regarding the weather may be obtained by the warning system controller ascertaining if the windscreen wipers are in use or have been in use recently due to rain (col. 18, lines 9 to 16). Thus, the combination of Davidian and Tonkin discloses a windshield wiper sensor for indicating whether a windshield wiper of the vehicle is activated, as described in claim 32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tonkin with Davidian because adjusting what has been

predetermined determined as a safe stopping distance for a vehicle, based on road conditions, would aid in operating the vehicle in a safe manner and avoid potential dangerous instances.

said memory subsystem further storing a second vehicle speed/ stopping distance table;

Davidian discloses a look-up table for predetermined defined conditions, i.e., skidding danger as previously discussed. "Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table, for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.", (e.g., Davidian, 9:20 – 27). As previously stated, the skidding danger condition of Davidian is part of determining if the road conditions are wet or dry. Although not specifically stated, one may interpret the different "predetermined defined conditions" as other tables to be used when the determination is made that the road conditions fall under one of those categories.

Tonkin describes that "safe stopping distances can be adjusted for prevailing weather conditions, again by providing stored values according to weather and possibly for different severities of poor weather.", (e.g., Tonkin, 18:16 - 19). "The size of the enhanced safe distance and enlarged safety envelope will generally be predetermined so as to correspond to typical parameters appropriate for driving under adverse road conditions. These parameters may for example be stored in a look up table allowing the parameters to be determined from the signals received by the controller together with the parameters defining the normal safety envelope.",

(e.g., Tonkin, 3:25 – 32). Tonkin further discloses a "two level warning system can be provided wherein, a first warning, e.g. turn on all lamps 13, when a trailing vehicle 18 encroaches within the safe stopping distance of the subject vehicle 16 for poor weather, and a second warning e.g. flash all or some lamps 13, if the trailing vehicle encroaches within the safe stopping distance for good conditions, (e.g., Tonkin, 18:19 - 26).

Thus, the combination of Davidian and Tonkin discloses a memory subsystem storing a second vehicle speed/stopping distance table, as described in claim 32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tonkin with Davidian because storing a second type of "look up table", or multiple tables, would allow the system to operate in multiple types of driving conditions, i.e., road type, skidding danger, vehicle load and tires pressure, (e.g., Davidian, 9:20 – 27), prevailing weather conditions for different severities of poor weather., (e.g., Tonkin, 18:16 - 19).

if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem;

AND

if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon data received from said radar detector, said road speed sensor

and said second vehicle speed/stopping distance table stored in said memory subsystem.

As previously stated, in the rejection of claim 31, Davidian discloses said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem, see the above rejection of claim 31. The noticeable difference in these limitations is the determination of whether or not the road conditions are wet or dry and utilizing the specific vehicle speed/stopping distance table accordantly.

As previously stated, Davidian describes that the automatic sensors of the vehicle include a rain sensor 16, "The automatic sensors on vehicle 2 further include a daylight sensor 14, a rain sensor 16, a vehicle load sensor 18, a trailer-hitch sensor 20, and a reverse gear sensor 22.", (e.g., Davidian, 4:67 – 5:2), and, "Module 90 also receives inputs from the sensors in case there is no depressible key, e.g., the daylight sensor 14, the trailer sensor 20, the reverse gear sensor 22, the rain sensor 16, and the vehicle load sensor 18.", (e.g., Davidian, 8:58 – 63). (col. 4, line 67 to col. 5, line 2). Furthermore, Davidian discloses keys that if depressed would take into consideration road conditions and alter parameters in determining braking distance, i.e., "slippery conditions of the road", (e.g., Davidian, 5:54 – 66). It can be interpreted that the activation of the key is much the same as activating a windshield wiper.

Tonkin describes that safe stopping distances can be adjusted for prevailing weather conditions, and that information regarding the weather may be obtained by the warning system

controller ascertaining if the windscreen wipers are in use or have been in use recently due to rain (col. 18, lines 9 to 16).

Tonkin further discloses a "two level warning system can be provided wherein, a first warning, e.g. turn on all lamps 13, when a trailing vehicle 18 encroaches within the safe stopping distance of the subject vehicle 16 for poor weather, and a second warning e.g. flash all or some lamps 13, if the trailing vehicle encroaches within the safe stopping distance for good conditions, (e.g., Tonkin, 18:19 - 26).

Thus, the combination of Davidian and Tonkin discloses a determination as to the road conditions and selecting a specific set of parameters, i.e., two or more "look up table", based on the road condition, to utilize for sending an alert to the operator of the vehicle.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tonkin with Davidian because selecting a specific set of parameters, "look up table", or multiple tables, based on specific driving conditions would allow the system to adjusting what has been predetermined determined as a safe stopping distance for a vehicle being operating and avoid potential dangerous instances by warning the vehicle's operator of a potential collision based on those specific set of parameters based on the road conditions, i.e., road type, skidding danger, vehicle load and tires pressure, (e.g., Davidian, 9:20 – 27), prevailing weather conditions for different severities of poor weather., (e.g., Tonkin, 18:16 - 19).

III. STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

The following is an Examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding: The prior art of Jurgen, Saturn '452, Toyota '599, Volkswagen '070, Davidian, and Tonkin do not disclose, alone or in combination, the limitation of "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle", as stated in claims 1, 7, 13, 17, 23, 26, and 28 of the '781 Patent.

The '781 Patent teaches the overinjection notification circuit as being activated when there is excessive fuel being supplied to the vehicle's engine. This overinjection notification circuit is activated when said processor subsystem determines, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, see claim 1 and similarly claimed limitations found in independent claims 7, 13, 17, 23, 26, and 28, and the teachings stated in the '781 Patent 12:64 – 13:35.

Jurgen discloses a fuel injection shut off which utilizes a threshold. This fuel shut off is activated when a threshold is reached. "During a deceleration transition, the fuel can be shut off by simply not providing a pulse width signal to the injector to minimize exhaust emissions and fuel consumption.", (e.g., Jurgen, page 12.22). "During coasting and braking, fuel consumption can be further reduced by shutting off the fuel until the engine speed decreases to slightly higher than the set idle speed. The ECU determines when fuel shutoff can occur by evaluating the throttle position, engine RPM, and vehicle speed.", (e.g., Jurgen, page 12.4). "Using the inputs of

engine RPM and vehicle speed to the electronic control unit, **thresholds** can be established for limiting these **variables with fuel cutoff. When the maximum speed is achieved, the fuel injectors are shut off. When the speed decreases below the threshold, fuel injection resumes**.", (e.g., Jurgen, page 12.14). "During transition to fuel cutoff, the ignition timing is retarded from its current setting to reduce engine torque and to assist in engine braking. The fuel is then shut off During the transition, the throttle bypass valve or the main throttle valve may remain open for a short period to allow fresh air to oxidize the remaining unburned HC and CO to further reduce exhaust emissions. During development of the fuel cutoff strategy, the advantage of reduced emission effects and catalyst temperature control must be balanced against driveability requirements. The use of fuel cutoff may change the perceived amount of engine braking felt by the driver. In addition, care must be taken to avoid a 'bump' feel when entering the fuel cutoff mode, due to the change in torque.", (e.g., Jurgen, page 12.17). Though, Jurgen does teach different sensor readings being used to tell the ECU when to shut off the fuel, the threshold of these values does not cause the engine to have excess fuel, i.e., their threshold prevents overinjection of fuel whereas the '781 Patent's thresholds allow the engine to reach a state of overinjection. Therefore, Jurgen does not disclose the fuel ever being **over**injected because of the threshold that is used and does not teach the claimed limitation stated above with regards to **over**injection.

Saturn ‘452 discloses, "A motor vehicle has a manual transmission and means for indicating to the operator a point in operation for upshifting to the next higher gear from the present gear. A method of determining the shift point is provided based upon actual operating

parameters of the motor vehicle effecting current wheel torque and predicted wheel torque in the next higher gear.", (e.g., Saturn '452, Abstract). "Shift indicators are commonly used on manual transmission vehicles to assist non-expert drivers in determining when it is appropriate to shift the transmission to a higher gear in order to maximize driving fuel economy.", (e.g., Saturn '452, 1:10 – 13). Saturn '452 further discloses a threshold value close to unity providing a shift point which achieves maximum fuel economy, but does not specifically disclose a "fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle" either alone or in combination with the References specifically discussed in this Reexam case.

Toyota '599 discloses performing shift-up and shift-down alerts based on different criteria, one of which includes fuel consumption. Each shift position corresponding to the optimum fuel consumption rate in accordance with various parameters calculated, (e.g., Toyota '599, 2:59 – 63). Toyota '599 further discloses, "The indicator 10 includes a shift-up indicating lamp 10a and a shift-down indicating lamp 10b", (e.g., Toyota '599, 2:64 – 3:3). "However, only when either one of the assumed fuel consumption rates above is better than the current fuel consumption rate B_e, the corresponding shift-up lamp or shift-down lamp in the indicator 10 is illuminated, thus indicating the necessity of the speed change operation.", (e.g., Toyota '599, 7:29 – 38). As seen, Toyota '599 does not disclose an overinjection notification based upon data received from said plurality of sensors.

Volkswagen '070 discloses, "a display of the rout-specific fuel consumption provide in a vehicle", (e.g., Volkswagen '070, p. 9 of English translation). Volkswagen '070 further discloses, "Looking initially at operating range I remote from full load, the desired output at a lower specific fuel consumption is able to be achieved after upshifting into the next higher gear, at an operating point that lies to the left of operating range I in the diagram of Figure 1. Accordingly, the device of the present invention generates a signal that asks the operator, i.e., normally the driver, to shift to a higher gear, which is indicated in Figure 1 by the upward pointing arrow within operating range I", (e.g., Volkswagen '070, pp. 6 – 7, English translation). Volkswagen '070 teachings are towards shifting the gears of an engine and not overinjection of fuel and alerting a driver that too much fuel is being supplied to the engine. Therefore, Volkswagen '070 does not disclose the limitation discussed above.

As to Davidian and Tonkin, as was previously seen in the Order, these reference were not the basis for the SNQ for the limitation regarding overinjection, see Order. Therefore, Davidian and Tonkin, alone or in combination with the above references, disclose, "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle".

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

Claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 30 are confirmed as patentable in this reexamination proceeding.

IV. CONCLUSION

A. Submissions

1. Information Disclosure Statement (IDS)

The IDS submission on 08/22/2014 has been considered. It is to be noted, however, that where patents, publications, and other such items of information are submitted by a party (patent owner or requester) in compliance with the requirements of the rules, the requisite degree of consideration to be given to such information will be limited by the degree to which the party filing the information citation has explained the content and relevance of the information. In instances, where no explanation of citations (items of information) is required and none is provided for an information citation, only a cursory review of that information is required. The examiner need only perform a cursory evaluation of each unexplained item of information, to the extent that he/she needs in order to determine whether he/she will evaluate the item further. If the cursory evaluation reveals the item not to be useful, the examiner may simply stop looking at it. This review may often take the form of considering the documents in the same manner as other

documents in Office search files are considered by the Examiner while conducting a search of the prior art in a proper field of search. The initials of the Examiner, in this proceeding, placed adjacent to the citations on the PTO/SB/08A or its equivalent, without an indication in the record to the contrary in the record, do not signify that the information has been considered by the Examiner any further than to the extent noted above. The same degree of consideration was provided for the references merely cited with the request but for which no explanation regarding the content and relevance of the information was provided. See MPEP 609, Chapter 0600, pages 192-193 of pages 1-197 - MPEP Eighth Edition, Revision 8 (July 2010). The examiner notes that due to the unusually large number of references cited, and the absence of any description of the relevance of the references, it should be assumed that only the most cursory review of the cited documents consistent with these guidelines has been performed. If applicant is aware of any information that might be of particular relevance, it should be pointed out in order to insure a higher degree consideration.

2. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

B. Extension of time

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in ex parte reexamination proceedings are provided for in 37 CFR 1.550(c). See MPEP § 2265.

C. Litigation Reminder

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving in the '781 Patent throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

D. Amendment in Reexamination Proceedings

Patent owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR'1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.530(d) - (j), and must contain any fees required by 37 CFR 1.20(c). See MPEP § 2234 and 2250(IV) for examples to assist in the preparation of proper proposed amendments in reexamination proceedings.

E. Service of Papers

All correspondence related to this ExParte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at

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/David E. England/
Primary Examiner, Art Unit 3992

Conferees:

/Michael J. Yigdall/
Primary Examiner, Art Unit 3992

/Fred Ferris/
Acting SPRS CRU

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90013252	5,954,781
	Examiner	Art Unit
	DAVID ENGLAND	3992

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Searched references in IDS	6/18/14	/DE/
Searched references in IDS	10/06/14	/DE/

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/DAVID ENGLAND/ Primary Examiner.Art Unit 3992

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90013252	5,954,781
	Certificate Date	**Certificate Number**

Requester Correspondence Address:	☐ **Patent Owner**	☒ **Third Party**
KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004		

LITIGATION REVIEW ☐	/DE/ (examiner initials)	10/06/2014 (date)
Case Name		Director Initials
1:13cv8413 (OPEN)		
1:13cv8416 (OPEN)		
1:13cv8418 (OPEN)		
1:13cv8419 (OPEN)		
1:13cv8421 (OPEN)		

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TYPE OF PROCEEDING	**NUMBER**

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Receipt date: 08/22/2014
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Doc description: Information Disclosure Statement (IDS) Filed

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Art Unit	3992
Examiner Name	England, David E.
Attorney Docket Number	1089-001

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	9	4097864		1978-06-27	Endo	
	10	4208925		1980-06-24	Miller	
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	12	4250485		1981-02-10	Mostert	
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	14	4271402		1981-06-02	Kastura	
	15	4280358		1981-07-28	Henderson	
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	21	4439833		1984-03-27	Yamaguchi	
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	23	4492112		1995-01-08	Igarashi	
	24	4542460		1985-09-17	Weber	
	25	4546747		1985-10-15	Kobayashi	
	26	4550596		1985-11-05	Ueda	
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	31	4622637		1986-11-11	Tomita	
	32	4631515		1986-12-23	Blee	
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	34	4677556		1987-06-30	Habu	
	35	4683455		1987-07-28	Kido	
	36	4701852		1987-10-20	Ulveland	
	37	4703304		1987-10-27	Muguruma	
	38	4712452		1987-12-15	Hibino	
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	45	4868756		1989-09-19	Kawanabe	
	46	4885690		1989-12-05	Schimmel	
	47	4901701		1990-02-20	Chasteen	
	48	4945870		1990-08-07	Richeson	
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	56	5165497		1992-11-24	Chi	
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	68	5436835		1995-07-25	Emry	
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	70	5477452		1995-12-19	Milunas	
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	89	5864285		1999-01-26	Wieder	
	90	5865265		1999-02-02	Matsumoto	
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	2	H06-052499	JP		1994-02-25	Yamamura Toshihiro		☒
	3	H06-227337	JP		1994-08-16	Imai Yasuo		☒
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	8	H07-322415	JP		1995-12-08	Suzuki Akira		☒
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	19	DE Appln. 2926070	DE		1981-01-15	Fiala		☐
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	30	GB Appln. 2173331	GB		1986-10-08	Ritchie		☐
	31	GB Appln. 2265062	GB		1993-09-15	Codd		☐
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	41	WO 90/010210	WO		1990-09-07	Dickey		☐
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	1	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 Defendants' Local Patent Rule 2.3 Disclosures, BMW's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	2	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Defendant's Local Patent Rule 2.3 Disclosures, Chrysler's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	3	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08421 Defendant's Local Patent Rule 2.3 Disclosures, Jaguar Land Rover's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	4	MERCEDES-BENZ USA, LLC & MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Defendants' Local Patent Rule 2.3 Disclosures, Mercedes' Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	5	VELOCITY PATENT LLC, Case No. 13-CV-08416 Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to BMW's Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-12, Chicago, Illinois.	☐
	6	VELOCITY PATENT LLC, Case No. 13-CV-08419 Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to Chrysler's Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-12, Chicago, Illinois.	☐
	7	VELOCITY PATENT LLC, Case No. 13-CV-08419, Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to Jaguar Land Rover's Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-12, Chicago, Illinois.	☐
	8	VELOCITY PATENT LLC, Case No. 13-CV-08413 Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to Mercedes' Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-12, Chicago, Illinois.	☐
	9	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Defedant's Local Patent Rule 2.3 Disclosures, Audi's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-13, Chicago, Illinois.	☐

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/David England/ 10/14/2014

Receipt date: 08/22/2014	Application Number	90013252
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2014-05-22
(Not for submission under 37 CFR 1.99)	First Named Inventor	HARVEY SLEPIAN
	Art Unit	3992
	Examiner Name	England, David E.
	Attorney Docket Number	1089-001

	10	VELOCITY PATENT LLC, Case No. 13-CV-08418 Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to Audi's Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern District, Fact Discovery, 2014-06-10, Chicago, Illinois.	☐
	11	VELOCITY PATENT LLC, Velocity's Response to Defendants' Common Interrogatories, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	12	VELOCITY PATENT LLC, Case No. 13-CV-08418 Velocity's Response to Audi's First Set of Interrogatories, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-01, Chicago, Illinois.	☐
	13	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Defendant's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-03, Chicago, Illinois.	☐
	14	AUDI OF AMERICA, INC., Defendant's Objections and Responses to Velocity's First Set of Interrogatories (Nos. 1-4), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-03, Chicago, Illinois.	☐
	15	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	16	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	17	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-07, Chicago, Illinois.	☐
	18	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's First Supplemental Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-09, Chicago, Illinois.	☐
	19	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	20	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐

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	Examiner Name	England, David E.
	Attorney Docket Number	1089-001

	21	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-07, Chicago, Illinois.	☐
	22	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's First Supplemental Objections and Responses to Velocity's First Set of Interrogatories (No. 1), Case Discovery, 2014-06-11, Chicago, Illinois.	☐
	23	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's First Supplemental Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-06-11, Chicago, Illinois.	☐
	24	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419, Jaguar Land Rover's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), Case Discovery, 2014-03-17, Chicago, Illinois.	☐
	25	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419, Jaguar Land Rover's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), Case Discovery, 2014-03-17, Chicago, Illinois.	☐
	26	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419, Jaguar Land Rover's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-07, Chicago, Illinois.	☐
	27	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419 Chrysler's First Supplemental Objections and Responses to Velocity's First Set of Interrogatories (No. 1), Case Discovery, 2014-06-06, Chicago, Illinois.	☐
	28	MERCEDES-BENZ USA, LLC, Case No. 13-CV-08413 Mercedes-Benz USA's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), Case Discovery, 2014-03-24, Chicago, Illinois.	☐
	29	MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Mercedes-Benz International's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), Case Discovery, 2014-03-24, Chicago, Illinois.	☐
	30	MERCEDES-BENZ USA, LLC, Case No. 13-CV-08413 Mercedes-Benz USA's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), Case Discovery, 2014-03-24, Chicago, Illinois.	☐
	31	MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Mercedes-Benz International's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), Case Discovery, 2014-03-24, Chicago, Illinois.	☐

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	32	MERCEDES-BENZ USA, LLC, Case No. 13-CV-08413 Mercedes-Benz USA's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-14, Chicago, Illinois.	☐
	33	MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Mercedes-Benz International's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-14, Chicago, Illinois.	☐
	34	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 1 Complaint For Patent Infringement to Audi of America, Inc. & Audi of America, LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Complaint, 2013-11-21, Chicago, Illinois.	☐
	35	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 28 First Amended Complaint For Patent Infringement to Audi of America, Inc., U.S. District Court for the Northern District of Illinois Eastern Division, Case Complaint, 2014-01-30, Chicago, Illinois.	☐
	36	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 23 Audi of America, Inc'.s Motion to Dismiss Velocity's Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	37	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 24 Audi of America, Inc.'s Brief in Support of their Motion to Dismiss Velocity's Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	38	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 36 Audi of America, Inc.'s Motion to Dismiss Velocity's First Amended Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	39	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 37 Audi of America, Inc.'s Memorandum in Support of its Motion to Dismiss Velocity's First Amended Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	40	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 45 Velocity Patent LLC's Response to Defendant's Motion to Dismiss, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-03-19, Chicago, Illinois.	☐
	41	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 47 Audi of America, Inc.'s Reply in Support of Its Motion to Dismiss Velocity's First Amended Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-04, Chicago, Illinois.	☐
	42	VELOCITY PATENT LLC, Case No. 13-CV-08416 Docket # 1 Complaint for Patent Infringement to BMW of North America, LLC & BMW Manufacturing Co., LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois.	☐

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	Art Unit	3992
	Examiner Name	England, David E.
	Attorney Docket Number	1089-001

	43	BMW OF NORTH AMERICA, LLC, Case No. 13-CV-08416 Docket # 21 BMW of North America's Answer and Counterclaim to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	44	BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 Docket # 22 BMW Manufacturing's Answer and Counterclaim to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	45	VELOCITY PATENT LLC, Case No. 13-CV-08416 Docket # 28 Velocity's Answer to Defendant BMW Manufacturing's Counterclaims, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	46	VELOCITY PATENT LLC, Case No. 13-CV-08416 Docket # 29 Velocity's Answer to Defendant BMW of North America's Counterclaims, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	47	VELOCITY PATENT LLC, Case No. 13-CV-08419 Docket # 1 Complaint for Patent Infringement to Chrysler Group LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois.	☐
	48	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Docket # 24 Chrysler Group LLC's Anser to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	49	VELOCITY PATENT LLC, Case No. 13-CV-08421 Docket # 1 Complaint for Patent Infringement to Jaguar Land Rover North America, LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois.	☐
	50	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08421 Docket #23 Jaguar Land Rover's Answer and Affirmative Defenses to Velocity's Original Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	90013252
Filing Date	2014-05-22
First Named Inventor	HARVEY SLEPIAN
Art Unit	3992
Examiner Name	England, David E.
Attorney Docket Number	1089-001

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Patrick D. Richards/	Date (YYYY-MM-DD)	2014-08-22
Name/Print	Patrick Richards	Registration Number	48905

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Art Unit	3992
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Attorney Docket Number	1089-001

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	51	DE 32 18 243 A1	DE		1983-11-17	Lehnert et al.		☐
	52	DE 32 45 752 A1	DE		1983-06-30	Vall-Llovera Passana et al.		☐
	53	DE 32 28 516 A1	DE		1984-04-05	Meyer		☐

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	54	GB Appln. 2112945	GB		1983-07-27	VAll-Liovera Passana et al.		☐
	55	DE 43 26 182 A1	DE		1994-02-17	Schulze		☐
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	63	EP 0 484 995 A2	EP		1992-05-13	Deering		☐
	64	DE 35 01 276 A1	DE		1985-08-01	Schimmel et al.		☐

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	Attorney Docket Number	

	65	DE 196 46 104 C1	DE		1988-04-02	Hellmann et al.			☐
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	51	VELOCITY PATENT LLC, Case No. 13-CV-08413 Docket # 1 Complaint for Patent Infringement to Mercedes-Benz USA, LLC & Mercedes-Benz U.S. International Inc., U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois	☐
	52	MERCEDES-BENZ U.S. INTERNATIONAL, INC., 13-CV-08413 Docket # 34 Mercedes-Benz U.S. International's Answer, Affirmative Defenses, and Counterclaim to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	53	MERCEDES-BENZ USA, LLC, 13-CV-08413 Docket # 35 Mercedes-Benz USA's Answer, Affirmative Defenses, and Counterclaim to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	54	VELOCITY PATENT LLC, 13-CV-08413 Docket # 44 Velocity's Answer to Defendant Mercedes-Benz U.S. International's Counterclaim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	55	VELOCITY PATENT LLC, 13-CV-08413 Docket # 45 Velocity's Answer to Defendant Mercedes-Benz USA's Counterclaim, U.S. District Court for the Northern District of Illinois Eastern District, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	56	VELOCITY PATENT LLC, Velocity's Preliminary Infringement Contentions Against BMW Defendants Pursuant to Northern District of Illinois Local Patent Rule 2.1, U.S. District Court for the Northern District of Illinois Eastern District, Case Discovery, 2014-03-12, Chicago, Illinois.	☐
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Examiner Signature	/David England/	Date Considered	10/14/2014

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Patrick D. Richards/	Date (YYYY-MM-DD)	08/22/14
Name/Print	Patrick Richards	Registration Number	48905

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Docket No. 1089-001 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	90/013,252	**Confirmation No.** :	9999
Patent No.	:	5,954,781		
Filed	:	May 22, 2014		
Art Unit.	:	3992		
Examiner	:	David E. England		
Customer No.:		88360		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Phone: (312) 283-8555
Date: September 30, 2014

Electronic Acknowledgement Receipt

EFS ID:	20327011
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-OCT-2014
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	90013252
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First Named Inventor	HARVEY SLEPIAN
Art Unit	3992
Examiner Name	England, David E.
Attorney Docket Number	1089-001

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020000122	A1	2002-01-03	Reuter	

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	1	JP H05-248894	JP		1993-09-24	Okamoto Yoshiyuki		☒
	2	H06-052499	JP		1994-02-25	Yamamura Toshihiro		☒
	3	H06-227337	JP		1994-08-16	Imai Yasuo		☒
	4	H06-242234	JP		1994-09-02	Maeda Kozo and Ueno Yasushi		☒
	5	H06-247247	JP		1994-09-06	Imai Yasuo		☒
	6	H06-298021	JP		1994-10-25	Sasaki Kazuya, Hashimoto Yoshiyuki, Imai Yasuo		☒

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	18	DE Appln. 2241427	DE		1974-03-21	Bernhard		☐
	19	DE Appln. 2926070	DE		1981-01-15	Fiala		☐
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	21	DE Appln. 3642196	DE		1988-06-23	Langer		☐
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	29	DE 3325714	DE		1985-01-31	Lauer		☐
	30	GB Appln. 2173331	GB		1986-10-08	Ritchie		☐
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	40	JP H04-242900	JP		1992-08-31	Nakamura		☐
	41	WO 90/010210	WO		1990-09-07	Dickey		☐
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	46	WO 96/020336	WO		1996-07-04	Murakami		☐
	47	GB Appln. 2265341	GB		1993-09-22	Nocker et al.		☐
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	1	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 Defendants' Local Patent Rule 2.3 Disclosures, BMW's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	2	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Defendant's Local Patent Rule 2.3 Disclosures, Chrysler's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	3	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08421 Defendant's Local Patent Rule 2.3 Disclosures, Jaguar Land Rover's Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	4	MERCEDES-BENZ USA, LLC & MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Defendants' Local Patent Rule 2.3 Disclosures, Mercedes' Invalidity and Non-Infringement Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-11, Chicago, Illinois.	☐
	5	VELOCITY PATENT LLC, Case No. 13-CV-08416 Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to BMW's Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-12, Chicago, Illinois.	☐
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	Attorney Docket Number	1089-001

	10	VELOCITY PATENT LLC, Case No. 13-CV-08418 Plaintiff's Local Patent Rule 2.5 Disclosures, Velocity's Initial Response to Audi's Invalidity Contentions, U.S. District Court for the Northern District of Illinois Eastern District, Fact Discovery, 2014-06-10, Chicago, Illinois.	☐
	11	VELOCITY PATENT LLC, Velocity's Response to Defendants' Common Interrogatories, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	12	VELOCITY PATENT LLC, Case No. 13-CV-08418 Velocity's Response to Audi's First Set of Interrogatories, U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-01, Chicago, Illinois.	☐
	13	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Defendant's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-03, Chicago, Illinois.	☐
	14	AUDI OF AMERICA, INC., Defendant's Objections and Responses to Velocity's First Set of Interrogatories (Nos. 1-4), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-03, Chicago, Illinois.	☐
	15	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	16	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	17	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-04-07, Chicago, Illinois.	☐
	18	BMW OF NORTH AMERICA, LLC & BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 BMW's First Supplemental Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-05-09, Chicago, Illinois.	☐
	19	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐
	20	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), U.S. District Court for the Northern District of Illinois Eastern Division, Fact Discovery, 2014-03-17, Chicago, Illinois.	☐

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	21	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-07, Chicago, Illinois.	☐
	22	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's First Supplemental Objections and Responses to Velocity's First Set of Interrogatories (No. 1), Case Discovery, 2014-06-11, Chicago, Illinois.	☐
	23	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Chrysler's First Supplemental Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-06-11, Chicago, Illinois.	☐
	24	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419, Jaguar Land Rover's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), Case Discovery, 2014-03-17, Chicago, Illinois.	☐
	25	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419, Jaguar Land Rover's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), Case Discovery, 2014-03-17, Chicago, Illinois.	☐
	26	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419, Jaguar Land Rover's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-07, Chicago, Illinois.	☐
	27	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08419 Chrysler's First Supplemental Objections and Responses to Velocity's First Set of Interrogatories (No. 1), Case Discovery, 2014-06-06, Chicago, Illinois.	☐
	28	MERCEDES-BENZ USA, LLC, Case No. 13-CV-08413 Mercedes-Benz USA's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), Case Discovery, 2014-03-24, Chicago, Illinois.	☐
	29	MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Mercedes-Benz International's Objections and Responses to Velocity's First Set Of Interrogatories (Nos. 1-3), Case Discovery, 2014-03-24, Chicago, Illinois.	☐
	30	MERCEDES-BENZ USA, LLC, Case No. 13-CV-08413 Mercedes-Benz USA's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), Case Discovery, 2014-03-24, Chicago, Illinois.	☐
	31	MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Mercedes-Benz International's Objections and Responses to Velocity's First Set of Requests For Production (Nos. 1-47), Case Discovery, 2014-03-24, Chicago, Illinois.	☐

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	32	MERCEDES-BENZ USA, LLC, Case No. 13-CV-08413 Mercedes-Benz USA's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-14, Chicago, Illinois.	☐
	33	MERCEDES-BENZ U.S. INTERNATIONAL INC., Case No. 13-CV-08413 Mercedes-Benz International's Objections and Responses to Velocity's Second Set of Interrogatories (No. 4), Case Discovery, 2014-04-14, Chicago, Illinois.	☐
	34	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 1 Complaint For Patent Infringement to Audi of America, Inc. & Audi of America, LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Complaint, 2013-11-21, Chicago, Illinois.	☐
	35	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 28 First Amended Complaint For Patent Infringement to Audi of America, Inc., U.S. District Court for the Northern District of Illinois Eastern Division, Case Complaint, 2014-01-30, Chicago, Illinois.	☐
	36	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 23 Audi of America, Inc'.s Motion to Dismiss Velocity's Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	37	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 24 Audi of America, Inc.'s Brief in Support of their Motion to Dismiss Velocity's Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	38	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 36 Audi of America, Inc.'s Motion to Dismiss Velocity's First Amended Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	39	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 37 Audi of America, Inc.'s Memorandum in Support of its Motion to Dismiss Velocity's First Amended Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	40	VELOCITY PATENT LLC, Case No. 13-CV-08418 Docket # 45 Velocity Patent LLC's Response to Defendant's Motion to Dismiss, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-03-19, Chicago, Illinois.	☐
	41	AUDI OF AMERICA, INC., Case No. 13-CV-08418 Docket # 47 Audi of America, Inc.'s Reply in Support of Its Motion to Dismiss Velocity's First Amended Complaint for Failure to State a Claim, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-04, Chicago, Illinois.	☐
	42	VELOCITY PATENT LLC, Case No. 13-CV-08416 Docket # 1 Complaint for Patent Infringement to BMW of North America, LLC & BMW Manufacturing Co., LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois.	☐

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	43	BMW OF NORTH AMERICA, LLC, Case No. 13-CV-08416 Docket # 21 BMW of North America's Answer and Counterclaim to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	44	BMW MANUFACTURING CO., LLC, Case No. 13-CV-08416 Docket # 22 BMW Manufacturing's Answer and Counterclaim to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	45	VELOCITY PATENT LLC, Case No. 13-CV-08416 Docket # 28 Velocity's Answer to Defendant BMW Manufacturing's Counterclaims, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	46	VELOCITY PATENT LLC, Case No. 13-CV-08416 Docket # 29 Velocity's Answer to Defendant BMW of North America's Counterclaims, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-02-18, Chicago, Illinois.	☐
	47	VELOCITY PATENT LLC, Case No. 13-CV-08419 Docket # 1 Complaint for Patent Infringement to Chrysler Group LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois.	☐
	48	CHRYSLER GROUP LLC, Case No. 13-CV-08419 Docket # 24 Chrysler Group LLC's Anser to Velocity's Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐
	49	VELOCITY PATENT LLC, Case No. 13-CV-08421 Docket # 1 Complaint for Patent Infringement to Jaguar Land Rover North America, LLC, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2013-11-21, Chicago, Illinois.	☐
	50	JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 13-CV-08421 Docket #23 Jaguar Land Rover's Answer and Affirmative Defenses to Velocity's Original Complaint, U.S. District Court for the Northern District of Illinois Eastern Division, Case Pleading, 2014-01-27, Chicago, Illinois.	☐

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Attorney Docket Number	1089-001

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Patrick D. Richards/	Date (YYYY-MM-DD)	2014-08-22
Name/Print	Patrick Richards	Registration Number	48905

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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(Not for submission under 37 CFR 1.99)

Application Number	90013252
Filing Date	2014-05-22
First Named Inventor	HARVEY SLEPIAN
Art Unit	3992
Examiner Name	England, David E.
Attorney Docket Number	1089-001

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	Application Number	90013252
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	First Named Inventor	HARVEY SLEPIAN
	Art Unit	3992
	Examiner Name	England, David E.
	Attorney Docket Number	

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	Examiner Name	England, David E.
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	Art Unit	3992
	Examiner Name	England, David E.
	Attorney Docket Number	

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Application Number	90013252
Filing Date	2014-05-22
First Named Inventor	HARVEY SLEPIAN
Art Unit	3992
Examiner Name	England, David E.
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Signature	/Patrick D. Richards/	Date (YYYY-MM-DD)	08/22/14
Name/Print	Patrick Richards	Registration Number	48905

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EFS ID:	19947063
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
Time Stamp:	20:16:40
Application Type:	Reexam (Third Party)

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EFS ID:	19947118
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
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Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
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Application Type:	Reexam (Third Party)

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9	Other Reference-Patent/App/Search documents	ResponseMercedes11to19.pdf	5324302 f831e253717efe15e108eb56e5dc6261a0703051	no	839
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10	Other Reference-Patent/App/Search documents	ResponseMercedes20to25.pdf	3356512 873e3b95bc3ed4b674dbc5478f7e4e965023d519	no	479
Warnings:					
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11	Other Reference-Patent/App/Search documents	Claims1to12.pdf	8805119 67ed58e01042fb745e07a6006df2b32b4193805f	no	565
Warnings:					
Information:					
12	Other Reference-Patent/App/Search documents	Claims13to22.pdf	4681075 26e4c1db4a8af4acb90dad41c530df07efe2c47a	no	430
Warnings:					
Information:					
13	Other Reference-Patent/App/Search documents	ResponseAudi.pdf	263486 849a20a039eae3c284f9a83a7728c6596337c67f	no	62
Warnings:					
Information:					
14	Other Reference-Patent/App/Search documents	ResponseBMW.pdf	1100555 ad5d8bce24b7cb52d555e17c4276ad2fa125edbf	no	69
Warnings:					
Information:					
15	Other Reference-Patent/App/Search documents	ResponseChrysler.pdf	450582 9de2ed59027c5eeddb2984a46c263fbba98b14d5	no	60
Warnings:					
Information:					
16	Other Reference-Patent/App/Search documents	ResponseJaguar.pdf	600527 74ad5eca54b7a307b4f190aa63ca74a9d761c7d9	no	71
Warnings:					
Information:					
17	Other Reference-Patent/App/Search documents	ResponseMercedes.pdf	11072916 fb0bd590824c7f1925f60f7623167a84b2f2aade	no	124
Warnings:					
Information:					
18	Other Reference-Patent/App/Search documents	velocitycomplaint.pdf	3275666 eb1927f41882985a3afe5b465621c92eb4c9e375	no	42
Warnings:					
Information:					
19	Other Reference-Patent/App/Search documents	ResponseBMW13to24.pdf	7017043 e5514d69fd6bb791f7e4c89034013588fe7ffbe6	no	1049
Warnings:					
Information:					

20	Other Reference-Patent/App/Search documents	ResponseBMW25.pdf	619379 7dbe36fb4c9631d09848203ec3e7de17cf3d6c1f	no	90

Warnings:	
Information:	
Total Files Size (in bytes):	84416508

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	19947217
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
Time Stamp:	21:02:04
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Other Reference-Patent/App/Search documents	AudiMotionDismiss.pdf	698436 e02165d471b2ffbad9f03948593b9ce6bf3685b1	no	42

Warnings:	
Information:	

2	Other Reference-Patent/App/Search documents	BMWComplaint.pdf	3222848 b595944162027ba8e605a9dc5cf9228007ef53de	no	51
Warnings:					
Information:					
3	Other Reference-Patent/App/Search documents	ChryslerComplaint.pdf	2801780 afffbb03118055e2235d3c34866641b6ab7095f1	no	30
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	JaguarComplaint.pdf	2830933 ad95e36315a9e2ee82fad4d7fcf197ca54df0163	no	28
Warnings:					
Information:					
5	Other Reference-Patent/App/Search documents	MercedesComplaint.pdf	3188812 01d1f9350184574f008a6534edc7dbbb592fc92a	no	49
Warnings:					
Information:					
6	Foreign Reference	ForeignPatents1.pdf	11440342 e3ba28e591c01e58ef92db03605398f36f34fda7	no	183
Warnings:					
Information:					
7	Foreign Reference	ForeignPatents2.pdf	7429672 8bf1b93218c80816c2f8ce32b62deb50f7b10c74	no	164
Warnings:					
Information:					
8	Foreign Reference	ForeignPatents3.pdf	5658309 c7a7626d644c059169c4f9eec11760b8c8b1f688	no	113
Warnings:					
Information:					
9	Foreign Reference	ForeignPatents4.pdf	8213599 7a6640eed79f3fedc9bf1a1f459f5388315e7870	no	130
Warnings:					
Information:					
10	Foreign Reference	ForeignPatents5.pdf	4872527 ae7262912e3b122e95cd5683526da762fd8e6367	no	77
Warnings:					
Information:					

11	Foreign Reference	ForeignPatents6.pdf	4432689 8aa8198ffbca01f1b067c89422bd53356e33cc79	no	62
Warnings:					
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12	Foreign Reference	ForeignPatents7.pdf	7910248 52609c37bf2cba46a27565c2713fa509f45a0780	no	92
Warnings:					
Information:					
13	Foreign Reference	ForeignPatents8.pdf	4741690 a990e53270e41def63629276084631f41ef7738f9	no	59
Warnings:					
Information:					
14	Non Patent Literature	ConfidentialBMWPreliminaryInfringementContentions.pdf	1569378 29357ff748578bc4bcd2e4424588697b8e8a4f45	no	91
Warnings:					
Information:					
		Total Files Size (in bytes):	69011263		

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New Applications Under 35 U.S.C. 111

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New International Application Filed with the USPTO as a Receiving Office

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Electronic Acknowledgement Receipt

EFS ID:	19947316
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
Time Stamp:	21:57:03
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	AFieldOperationalTestofAdaptiveCruiseControlSystemOperabilityinNaturalisticUse.pdf	7058354 e186d74de5b2742cb88a4ad84bd8d4bd2691f0ee	no	14

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-199

2	Non Patent Literature	AbschluBberichtPrometheusPhaseII.pdf	6929463 97e1ad3da7f61d77cc0e399fb610ebdfb0e9fd55	no	11
Warnings:					
Information:					
3	Non Patent Literature	AdaptiveCruiseControlAnIndustryOutlookonProductFeaturesandMarketing.pdf	10373088 cbbab2bccb305f65e1b9e74994ed82c3f4990c48	no	110
Warnings:					
Information:					
4	Non Patent Literature	AdaptiveCruiseControlSystemAspectsandDevelopmentTrends.pdf	5298812 d100ad667baccf60e527219ea72c97e1effcfdab	no	12
Warnings:					
Information:					
5	Non Patent Literature	ATimeHeadwayAutonomousIntelligentCruiseControllerDesignandSimulation.pdf	1814688 97f720cd557d2d78baca5fb798f59a583a14de4f	no	32
Warnings:					
Information:					
6	Non Patent Literature	AutomotiveControlSystems.pdf	822137 c609771763037bd464b24eb27a8f813773bbbc99	no	6
Warnings:					
Information:					
7	Non Patent Literature	AutomotiveHandbook3rdEdition.pdf	10582962 28f62d45e4e75b2878fed46da791c8e0cc94b78e	no	51
Warnings:					
Information:					
8	Non Patent Literature	AutomotiveRadarforthePreventionofCollisions.pdf	2921026 bdcfd044880b70e6a3b4943ba9edff84fac61ecf	no	6
Warnings:					
Information:					
9	Non Patent Literature	AutonomousCruiseControlAfirstStepTowardsAutomatedDriving.pdf	799167 73a1f974c7dede90b10bb7719f785639906a33fe	no	8
Warnings:					
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10	Non Patent Literature	AutonomousIntelligentCruiseControl.pdf	1014842 0acf6af8ccd8d7f03f9a5ad0786dda39dc2a47ad	no	10
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11	Non Patent Literature	BusTruckTractorTrailerBrakingSystemPerformance.pdf	3465134 5522c74bdccfe7d926da0bf6a4acec991a4d3b61	no	55
Warnings:					
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12	Non Patent Literature	DesigningaDistanceWarningSystemfromtheUsersPointofView.pdf	14869661 72add3f6f9d40e1e0994dd0db46bf735a468fe80	no	22
Warnings:					
Information:					
13	Non Patent Literature	DesignoftheDriverInterfaceforAutonomousIntelligentCruiseControl.pdf	431196 b5bf1411476512e1134fc19d9fa7ca2a5d9684df	no	4
Warnings:					
Information:					
14	Non Patent Literature	DiplexDopplerRadarforAutomotiveObstacleDetection.pdf	7973146 59929a463aa7826e37894b8d3d58b39b6dcf649f	no	11
Warnings:					
Information:					
15	Non Patent Literature	DriverAssistanceSystemsforLateralandLongitudinalVehicleGuidance.pdf	2264309 3f69a22bf499f040c5e24455ef904b62a22ebacf	no	6
Warnings:					
Information:					
16	Non Patent Literature	DriverSupportinIntelligentAutonomousCruiseControl.pdf	666832 ecd8a3fb2386e78af326e777116c7dd7c290d437	no	5
Warnings:					
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17	Non Patent Literature	DrivingSimulationforCrashAvoidanceWarningEvaluation.pdf	2362144 eb128f6ae7507a8bedf28efc92a8b2c9969c2c85	no	9
Warnings:					
Information:					
18	Non Patent Literature	FosteringDevelompentEvaluationandDeploymentFOCAS.pdf	9411230 e90364ae221ba9e2133f0935be77c66211ee6a09	no	170
Warnings:					
Information:					
19	Non Patent Literature	FosteringDevelopmentEvaluationandDeploymentofForwardCrashAvoidanceSystems.pdf	9592685 99eaec45d5fe2c23d78cc08583d1b0b32c76b525	no	164
Warnings:					
Information:					

20	Non Patent Literature	IncreasingMileagewithanAdaptiveMicroporcessorShiftIndicator.pdf	4025876 7c7f88b0a69c9fcd6168843c019cfe6a67217faf	no	8
Warnings:					
Information:					
21	Non Patent Literature	IntelligentCruiseControlAkeyComponentTowardsImprovedTrafficFlowControl.pdf	461079 28188da58e2014aff7f7864d13a3946d4e744503	no	4
Warnings:					
Information:					
			Total Files Size (in bytes):	103137831	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	19947344
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
Time Stamp:	22:17:32
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	JPH05-248894Translation.pdf	645495 396b8a7f1f48ebf66092a68f043757e237fd96eb	no	9

Warnings:	
Information:	

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EXHIBIT 1012-203

2	Non Patent Literature	JPH06-052499Translation.pdf	3179968 97815e193f323d25bb41a5cc3012f3393d0e0e3b	no	14
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3	Non Patent Literature	JPH06-227337Translation.pdf	395890 3d9b4eeac263824874d581e4b1d78f5eca94e959	no	6
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4	Non Patent Literature	JPH06-242234Translation.pdf	1259843 84eec91f22a72be74496e1ce3a67cace0574d0e1	no	16
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Information:					
5	Non Patent Literature	JPH06-247247Translation.pdf	515437 4cad15ff6dc5dcb7b16f92b3109fe4d9a11e7c0c	no	7
Warnings:					
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6	Non Patent Literature	JPH06-298021Translation.pdf	930555 0dce1cd43fa04c87b034cec97a1d40ad4e33182b	no	12
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7	Non Patent Literature	JPH07-075218Translation.pdf	396337 6da38b6aaa3d2ec063e3a0c28e9082c1dbb79dbe	no	6
Warnings:					
Information:					
8	Non Patent Literature	JPH07-322415Translation.pdf	545696 5c618a8a09e21da17b46ba76420193c6e9f2188a	no	8
Warnings:					
Information:					
9	Non Patent Literature	JPH08-005436Translation.pdf	479225 b327c66fe2f09ea8e6cad6538cfd8d79c15efdd0	no	7
Warnings:					
Information:					
10	Non Patent Literature	JPH08-212499Translation.pdf	2525292 a8365378c64a6a08455d3f67a7b8f3eb9b6c2c3f	no	16
Warnings:					
Information:					

11	Non Patent Literature	Microcomputer-basedTractorPerformanceMonitoringandOptimizationSystem.pdf	5119834 225463b748a446479df2973ae487c13bce07d77f	no	17
Warnings:					
Information:					
12	Non Patent Literature	Microcomputer-ControlledPowertrainforaHybridVehicle.pdf	1185299 6ac7db2b3ab2bb3b95e08917569be249ba4fc36f	no	6
Warnings:					
Information:					
13	Non Patent Literature	NSC0000001.pdf	4427839 02887b9e99742bc245f3d44e22ed935ed8888387	no	154
Warnings:					
Information:					
14	Non Patent Literature	NSC0000155.pdf	2722936 af3d611d98a317ebf07249c7075af96322d6958d	no	68
Warnings:					
Information:					
15	Non Patent Literature	NSC0000223.pdf	2812134 374e04c84a5e6a5e2398ef4cf6ee91be59f1f88b	no	66
Warnings:					
Information:					
16	Non Patent Literature	NSC0000289.pdf	7589956 f5aee1831bba0cdafc1423f9a5028b9f59d34229	no	246
Warnings:					
Information:					
17	Non Patent Literature	RealisationofanIntelligentCruiseControlSystem.pdf	672281 025ef88880d59a1159820ccae2ab09c6359140b2	no	6
Warnings:					
Information:					
18	Non Patent Literature	RoadVehiclesAdaptiveCruiseControlSystems.pdf	7677513 1f0d9b8b99b2877b218a71fbb99eef1e96182a3b	no	32
Warnings:					
Information:					
19	Non Patent Literature	SocietyofAutomotiveEngineersJ1708.pdf	10167345 e03a61c432ee74ab6c1eda63165cc5bb1b07cf03	no	14
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20	Non Patent Literature	SocietyofAutomotiveEngineers J1922.pdf	10006328 62e533d7da6073f28074c1c727710684f153cfbb	no	18

Warnings:	
Information:	
Total Files Size (in bytes):	63255203

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

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Electronic Acknowledgement Receipt

EFS ID:	19947404
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
Time Stamp:	23:15:08
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	SocietyofAutomotiveEngineers J1939.pdf	17930618 69db54952f3c2b0cccd0bd01dd3600fb36790502	no	29

Warnings:	
Information:	

MERCEDES
EXHIBIT 1012-207

2	Non Patent Literature	TestsCharacterizingPerformanceofanAdaptiveCruiseControlSystem.pdf	1497234 a99066ebb59a5d594d9e48df8a9549a3a5804c08	no	12
Warnings:					
Information:					
3	Non Patent Literature	TheComputerizedFamilyCarwillbeCommonplaceinEuropeBefortheEndoftheDecade.pdf	1239957 e90cdd439b5f0d493d7dfbafc98f8ac01b20d095	no	8
Warnings:					
Information:					
4	Non Patent Literature	WhatDoDriversSayTheyUseSpeedometersandTachometersFor.pdf	1532561 ed189943167cd0c17e3079111858498c0079a9df	no	40
Warnings:					
Information:					
5	Non Patent Literature	OwnersHandbookforBMW7Series-1-1.pdf	17094468 6f32d3115c69ddf7c335f5674027f74fcfb58c7c	no	35
Warnings:					
Information:					
6	Non Patent Literature	OwnersHandbookforBMW7Series-1-2.pdf	16192729 8accbc208a67f98cc587cc7d54d89a7ce51b55d9	no	35
Warnings:					
Information:					
7	Non Patent Literature	OwnersHandbookforBMW7Series2.pdf	18955781 e01d1848a38dfc4c95e61b21b47df1401fff156f	no	66
Warnings:					
Information:					
8	Non Patent Literature	SocietyofAutomotiveEngineersJ1587-1-1-1.pdf	22577238 7454e0dea7e653091b9bd70f0fac5464661378d0	no	35
Warnings:					
Information:					
9	Non Patent Literature	SocietyofAutomotiveEngineersJ1587-1-1-2.pdf	19099224 03a98d7bbf806e7df61cf17d93bc4f9973838893	no	35
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Information:					
10	Non Patent Literature	SocietyofAutomotiveEngineersJ1587-1-2-1.pdf	17087047 c750f671f3410ba05b1cba153db9a0eaf104ac17	no	35
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11	Non Patent Literature	SocietyofAutomotiveEngineers J1587-1-2-2.pdf	20280798 392e62b466ea8e1d4af938da7aa60aeb6ba48c2c	no	35
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12	Non Patent Literature	SocietyofAutomotiveEngineers J1587-2-1-1.pdf	15023584 35a899c7c5e09f817293e5ad4f40e41d16d90e4f	no	30
Warnings:					
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13	Non Patent Literature	SocietyofAutomotiveEngineers J1587-2-1-2.pdf	15247808 0b8b8c031f4087c9ad6a5185eb310bc9263ce711	no	30
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Information:					
14	Non Patent Literature	SocietyofAutomotiveEngineers J1587-2-2-1.pdf	17207497 de0a46dd3890b95ec7262e56bcae7f5a1e7bd74f	no	30
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Information:					
15	Non Patent Literature	SocietyofAutomotiveEngineers J1587-2-2-2.pdf	23779349 1a82818c5f7dbfff0a9c82e934becbc6c6ed359e	no	38
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		Total Files Size (in bytes):	224745893		

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New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

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Electronic Acknowledgement Receipt

EFS ID:	19947449
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Customer Number:	88360
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-AUG-2014
Filing Date:	22-MAY-2014
Time Stamp:	23:51:34
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest1-1-1.pdf	24084696 1f48b8cf537eeef4c5d7c6a8bcefc918dd028554	no	70

Warnings:	
Information:	

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EXHIBIT 1012-210

2	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest1-1-2.pdf	23907442 9e162f0c57ebe970836d5c327d56068b59cb78bc	no	65
Warnings:					
Information:					
3	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest1-2-1-1.pdf	13800162 3a626e555e6fd7dc638590f62360a8c5480170ab	no	35
Warnings:					
Information:					
4	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest1-2-1-2.pdf	17705102 9fd0c2f2d1e4df3b004fce3f6404df02e400560e	no	35
Warnings:					
Information:					
5	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest1-2-2-1.pdf	13639772 c31aa20f1ffb6b431fb495d75233d572eececa55	no	30
Warnings:					
Information:					
6	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest1-2-2-2.pdf	13445301 49154445ee0f681e719651592baef016f5092ae5	no	35
Warnings:					
Information:					
7	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest2-1-1.pdf	24825281 9962ad3e7b656ff8271269477eeda6761972d70e	no	70
Warnings:					
Information:					
8	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest2-1-2.pdf	7535179 4c9e8a651bdaaee272b94e4aaf6ace2b7cd2fe0c	no	70
Warnings:					
Information:					
9	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest2-2-1-1.pdf	1808023 beb86022212ea3dcb88a2deb640cd696a6f3ccf9	no	40
Warnings:					
Information:					
10	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest2-2-1-2-1.pdf	14178544 549700b3daa4a8f360d9f0ab1fee66336ef16571	no	22
Warnings:					
Information:					

11	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest2-2-1-2-2.pdf	16861326 7379e4c24877657782acfda56c14b34b98105f42	no	22
Warnings:					
Information:					
12	Non Patent Literature	IntelligentCruiseControlFieldOperationalTest2-2-2.pdf	23262683 e894e0a04afa7098d3a377dea6ba8aaf439e1d75	no	64
Warnings:					
Information:					
13	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices1-1-1.pdf	13129896 eac7b387c4e49d47d52995f73988b82df2b546f5	no	20
Warnings:					
Information:					
14	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices1-1-2.pdf	17301881 5c6e91e14aeff4580136ab5a95d4368efc947dcf	no	20
Warnings:					
Information:					
15	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices-1-2-1.pdf	18600490 7a247e04082dbf80d0d44e8a6a8219bac2b1e190	no	22
Warnings:					
Information:					
16	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices-1-2-2.pdf	18846714 aa6ef3c9d9d86e290c4d38c2a11d9ac37ddfc219	no	22
Warnings:					
Information:					
17	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices-2-1-1.pdf	19469168 5b8cb0fc8d8669b2f2c764731337ecdce9f2901b	no	23
Warnings:					
Information:					
18	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices-2-1-2.pdf	14824494 e75f751759ebd5ac15a4d76d9d718a8646c428aa	no	22
Warnings:					
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19	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices-2-2-1.pdf	16074690 e0f9732041ae2456ba595b7d13b356109c72dec8	no	23
Warnings:					
Information:					

20	Non Patent Literature	PreliminaryHumanFactorsGuidelinesforCrashAvoidanceWarningDevices-2-2-2.pdf	14642554 2de95342184e62b7589bd5e1414434db9286cf5f	no	23

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Total Files Size (in bytes):	327943398

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/013,252	05/22/2014	5,954,781	

CONFIRMATION NO. 9999

POWER OF ATTORNEY NOTICE

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

Date Mailed: 07/02/2014

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/27/2014.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/jawhitfield/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

MERCEDES
EXHIBIT 1012-215

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/013,252	05/22/2014	5,954,781	

CONFIRMATION NO. 9999

88360
Richards Patent Law P.C.
233 S. Wacker Dr., 84th Floor
Chicago, IL 60606

POA ACCEPTANCE LETTER

OC000000069364247

Date Mailed: 07/02/2014

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/27/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/jawhitfield/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,252	05/22/2014	5,954,781		9999

88360 7590 07/21/2014

Richards Patent Law P.C.
233 S. Wacker Dr., 84th Floor
Chicago, IL 60606

EXAMINER	
ENGLAND, DAVID E	

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
07/21/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

MERCEDES EXHIBIT 1012-217

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

KENYON & KENYON LLP

ONE BROADWAY

NEW YORK, NY 10004

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/013,252*.

PATENT NO. *5,954,781*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

MERCEDES
EXHIBIT 1012-218

Ex Parte Reexamination Interview Summary – Pilot Program for Waiver of Patent Owner's Statement	Control No. 90/013,252	Patent Under Reexamination is Requested 5,954,781
	Examiner DAVID ENGLAND	Art Unit 3992

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

All participants (USPTO official and patent owner):

(1) Sudhanshu C. Pathak, SPRS 3992 (3)

(2) Alisha bull (4)

Date of Telephonic Interview:07/17/2014.

A. The USPTO official requested waiver of the patent owner's statement pursuant to the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The patent owner **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

☐ The patent owner **did not agree** to waive its right to file a patent owner's statement under 35 U.S.C. 304 at this time.

☐ USPTO personnel were unable to reach the patent owner.**

B. The Patent Owner of record telephoned the Office and indicated they would like to participate in the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☒ The Patent owner of record telephoned the Office and **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

The patent owner is not required to file a written statement of this telephone communication under 37 CFR 1.560(b) or otherwise. However, any disagreement as to this interview summary must be brought to the immediate attention of the USPTO, and no later than one month from the mailing date of this interview summary. Extensions of time are governed by 37 CFR 1.550(c).

*For more information regarding this pilot program, see *Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings*, 75 *Fed. Reg.* 47269 (August 5, 2010), available on the USPTO Web site at http://www.uspto.gov/patents/law/notices/2010.jsp.

**The patent owner may contact the USPTO personnel at (571) 272-7705 or at the telephone number provided below if the patent owner decides to waive the right to file a patent owner's statement under 35 U.S.C. 304.

/Sudhanshu C. Pathak/ (571)272-5509
Signature and telephone number of the USPTO official, who contacted, was contacted by, or attempted to contact the patent owner.

cc: Requester (if third party requester)

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THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

Date:

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JUL 21 2014
CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. : 90013252
PATENT NO. : 5954781
ART UNIT : 3993

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified ex parte reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the ex parte reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,252	05/22/2014	5,954,781		9999

7590 06/27/2014

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

EXAMINER	
ENGLAND, DAVID E	
ART UNIT	**PAPER NUMBER**
3992	

MAIL DATE	DELIVERY MODE
06/27/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

MERCEDES
EXHIBIT 1012-221

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EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/013,252*.

PATENT NO. *5,954,781*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Order Granting / Denying Request For Ex Parte Reexamination	Control No.	Patent Under Reexamination
	90/013,252	5,954,781
	Examiner	Art Unit
	DAVID ENGLAND	3992

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The request for *ex parte* reexamination filed *22 May 2014* has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a)☐ PTO-892, b)☐ PTO/SB/08, c)☒ Other: *IDS List*

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). **EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.**

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

/DAVID ENGLAND/ Primary Examiner, Art Unit 3992		

cc:Requester (if third party requester)

1. The present application is being examined under the pre-AIA first to invent provisions.

DECISION GRANTING EX PARTE REEXAMINATION

A Request for *ex parte* reexamination affecting claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15 and 17 – 32 of United States Patent Number 5,954,781 (hereafter "the '781 Patent") has been submitted on 05/22/2014.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Prosecution History

The '781 Patent was issued on September 21 1999 from U.S. Application Serial No. 08/813,270, hereinafter "the '270 Application", filed on March 10, 1997.

The prosecution history of the '781 Patent includes:

The '270 application was filed on March 10, 1997 with 32 claims, of which application claims 1, 14, 18, and 27 were the only independent claims. Among these independent claims, application claim 1 included a fuel overinjection circuit, application claim 14 included a fuel overinjection circuit, an upshift notification circuit, and a downshift notification circuit,

application claim 18 included a vehicle proximity alarm, and application claim 27 included a fuel overinjection circuit and a vehicle proximity alarm.

In the only Office Action, dated August 6, 1998, application claims 1, 2 and 4 to 6 were rejected as obvious in view of U.S. Patent No. 4,901,701 to Chasteen (copy attached as Exhibit 3), application claim 3 was rejected as obvious in view of the combination of Chasteen and U.S. Patent No. 4,631,515 to Blee et al. (copy attached as Exhibit 4), and application claims 7, 18 to 24, 27, and 28 were rejected as obvious in view of the combination of Chasteen and U.S. Patent No. 5,708,584 to Doi et al. (copy attached as Exhibit 5).

In the Office Action, the Examiner stated that application claims 8 to 13, 25, 26, and 29 to 32 included allowable subject matter. Specifically, the Examiner stated that application claims 8, 25, and 29 included allowable subject matter on the basis that "the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit." Similarly, the Examiner stated that application claims 11, 26, and 31 included allowable subject matter on the basis that "the prior art fails to disclose a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit." In addition, application claims 14 - 17, which included both an upshift notification circuit and a downshift notification circuit, were allowed on the basis that:

the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit.

In response to this Office Action, the applicant submitted an Amendment on February 8, 1999 with numerous amendments, see the response to Office Action and the Request pages 6 – 13 for further explanation. The '270 Application was subsequently allowed, see Notice of Allowance dated 04/21/1999 or the Request pages 13 and 14 for further details. The Examiner stated in their reasons for allowance that:

> The prior art fails to disclose an apparatus for optimizing operation of a vehicle and comprising an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive speed and the processor determines when to activate the upshift notification circuit; and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing

> a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit.

The Notice of Allowance further states that:

> Nor does the prior art discloses [sic] a fuel overinjection notification circuit coupled to the processor subsystem, wherein the fuel overinjection notification circuit issuing a notification that excess fuel is being supplied to the engine of the vehicle and the processor subsystem determining whether to activate the fuel overinjection notification circuit based upon data received from the road speed sensor, the throttle position sensor and the manifold sensor.

Additionally, the Notice of Allowance states:

> Nor does the prior art discloses [sic] that the processor subsystem determines whether to activate the vehicle proximity alarm circuit based upon separation distance data received from the radar detector, vehicle speed stopping distance table stored in the memory subsystem.

Proposed Substantial New Question of Patentability

Third Party Requester ("Requester") identifies the following printed publications as evidence that a substantial new question should be raised in the Request, see pp. 15-16.

1. Automotive Electronics Handbook, by Ronald Jurgen ("Jurgen"), attached as exhibit 11.
2. U.S. Patent No. 5,477,452 to Milunas et al. ("Saturn '452"), attached as exhibit 12.
3. U.S. Patent No. 4,559,599 to Habu et al. ("Toyota '599"), attached as exhibit 13.
4. German Patent Application Publication No. 29 26 070 ("Volkswagen '070"), attached as exhibit 14.
5. U.S. Patent No. 5,357,438 to Davidian ("Davidian"), attached as exhibit 15.

6. U.S. Patent No. 4,061,055 to Iizuka et al. ("Nissan '055"), attached as exhibit 16.

7. U.S. Patent No. 5,121,324 to Rini et al. ("Mack '324"), attached as exhibit 17.

8. U.S. Patent No. 3,925,753 to Auman et al. ("GM '452"), attached as exhibit 18.

9. PCT Publication No. WO 96/02853 ("Tonkin"), attached as exhibit 19.

Requester has alleged a substantial new question, "SNQ", of patentability in light of proposed rejections which are stated below:

- The 1st Proposed Rejection: Claim 1 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Saturn '452.
- The 2nd Proposed Rejection: Claims 1, 7, and 13 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Toyota '599.
- The 3rd Proposed Rejection: Claims 1, 7, and 13 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Volkswagen '070.
- The 4th Proposed Rejection: Claims 17-23 and 26 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Davidian.
- The 5th Proposed Rejection: Claims 17-23 and 26 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Davidian.
- The 6th Proposed Rejection: Claims 17-21 and 23 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Davidian.

- The 7th Proposed Rejection: Claims 28-30 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Nissan '055.
- The 8th Proposed Rejection: Claims 28-30 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Mack '324.
- The 9th Proposed Rejection: Claims 28-30 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and GM '753.
- The 10th Proposed Rejection: Claim 31 is alleged as Anticipated Under 35 U.S.C. § 102(b) by Davidian.
- The 11th Proposed Rejection: Claims 31 and 32 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Tonkin and Doi et al.

Requester has proposed rejections for dependent claims that are not the basis for the SNQ, which are stated below:

- The 12th Proposed Rejection: Claims 2, 4, and 5 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Chasteen.
- The 13th Proposed Rejection: Claims 2, 4, 5, 8, 10, 12, and 15 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Chasteen.
- The 14th Proposed Rejection: Claims 2, 4, 5, 8, 10, 12, and 15 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Chasteen.

- The 15th Proposed Rejection: Claim 18 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin.
- The 16th Proposed Rejection: Claim 18 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin.
- The 17th Proposed Rejection: Claim 18 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin.
- The 18th Proposed Rejection: Claims 24 and 25 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian and Chasteen.
- The 19th Proposed Rejection: Claims 24, 25, and 27 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian and Chasteen.
- The 20th Proposed Rejection: Claims 24, 25, and 27 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian and Chasteen.
- The 21st Proposed Rejection: Claim 32 is alleged as Obvious Under 35 U.S.C. § 103(a) in in View of the combination of Davidian and Tonkin.

Analysis of Substantial New Question of Patentability

A SNQ of patentability is raised by a cited patent or printed publication when there is a substantial likelihood that a reasonable examiner would consider the prior art patent or printed publication important in deciding whether or not the claim is patentable. A SNQ of patentability is not raised by prior art presented in a reexamination request if the Office has previously considered (in an earlier examination of the patent) the same question of patentability as to a patent claim favorable to the patent owner based on the same prior art patents or printed publications. In re Recreative Technologies, 83 F.3d 1394, 38 USPQ2d 1776 (Fed. Cir. 1996). The substantial new question of patentability may be based on art previously considered by the Office if the reference is presented in a new light or a different way that escaped review during earlier examination. MPEP §2216.

It is not sufficient that a request for reexamination merely proposes one or more rejections of a patent claim or claims as a basis for reexamination. It must first be demonstrated that a patent or printed publication that is relied upon in a proposed rejection presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the patent for which reexamination is requested, and during the prosecution of any other prior proceeding involving the patent for which reexamination is requested. MPEP §2216.

Basis of SNQ

The '781 Patent was issued on September 21, 1999 from the '270 Application, filed on March 10, 1997. The previous Examiner of the '270 Application concluded the reasons for allowance for claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 27 was the prior art failed to teach

or suggest upshift or downshift notification circuits. Therefore the limitations that are the basis of the SNQ of patentability affecting independent claims 1, 7, 13, 17, 23, 26, and their dependent claims 2, 4, 5, 8, 10, 12, 15, 18 – 22, 24, 25 and 27, teaches the upshift or downshift and reads as follows:

> "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed."
>
> OR
>
> "a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed."

With respect to claims 28 - 30, the applicant in the original prosecution emphasized that the prior art failed to teach a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Therefore the limitation disclosed in independent claim 28 which is the basis of the SNQ of patentability, and also affecting dependent claims 29 and 30, reads as follows:

> "said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.;said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

With respect to claims 31 and 32, the applicant in the original prosecution emphasized that the prior art failed to teach a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem. The prosecution history focused on a vehicle proximity alarm that is activated based on these three parameters and was the basis for the reasons for allowance on these claims. Therefore the limitation disclosed in independent claim 31 which is the basis of the SNQ of patentability, also affecting dependent claim 32, reads as follows:

> "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Alleged SNQ based upon Jurgen

Jurgen is presented to determine if a SNQ of patentability regarding Independent claims 1, 7, 13, 17, 23, 26, 28 of the '781 Patent is raised as stated in the First to Ninth proposed rejections, see above. Jurgen was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal drivability.

(Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also discloses that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Jurgen illustrates these hardware parts:

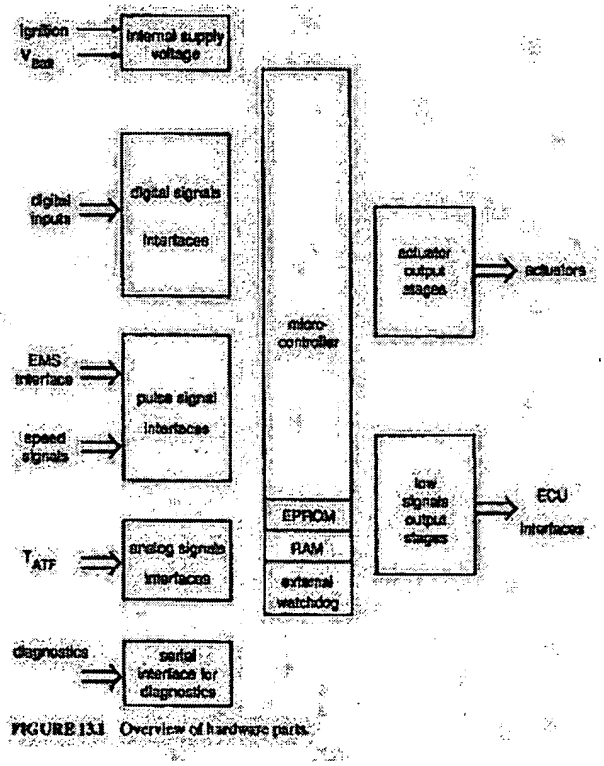


FIGURE 13.1 Overview of hardware parts.

Jurgen also discloses that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. "In the event that the particular shift characteristic is crossed (excessive/ insufficient) by one of either of the two input valves, the electronic ECU releases the shift by

activating the related actuator. This can be a direct shift into the target gear or by a serial activation of specific actuators in a fixed sequence to the target gear, depending on the transmission hardware design." (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, discloses "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" as taught in Independent claims 1, 7, 13, 17, 23, and 26.

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent. Further, Jurgen teachings are new and non-cumulative. Accordingly, Jurgen raises a substantial new question of patentability as to at least independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent that have not been decided in a previous examination. Dependent claims 2, 4, 5, 8, 10, 12, 15, 18 – 22, 24, 25, and 27 are brought in at least due to their dependency on Independent claims 1, 7, 13, 17, 23, and 26.

Jurgen discloses fuel injection notification circuit, which issues a notification to shut off fuel in certain situations. For Example, the ECU disclosed in Jurgen can shut of fuel in certain situation by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides a notification to the fuel injectors when a fuel cutoff state is reached.

Jurgen discloses based upon data received from said plurality of sensors, when to activate said fuel injection circuit and when to activate said upshift/downshift notification circuit. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Accordingly, Jurgen teachings, either alone or in combination with a secondary reference, would be important to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. Further, Jurgen teachings are new and non-cumulative. Accordingly, Jurgen raises a substantial new question of patentability as to at least independent claim 28 of the '781 Patent that have not been decided in a previous examination. Dependent claims 29 and 30 are brought in at least due to their dependency on Independent claim 28.

Alleged SNQ based upon Saturn '452

Saturn '452 Patent is presented to determine if a SNQ of patentability regarding Independent claims 1, 13, 17, 23, and 26 of the '781 Patent is raised as stated in the First and Sixth proposed rejection, see above. Saturn '452 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Saturn '452 discloses an upshift notification circuit connected to the control unit, which indicates "via line 60 the state of an upshift indicator light or equivalent visual display." Col. 2, lines 42 to 55. Therefore, it is seen that Saturn '452 discloses "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed" and "said processor

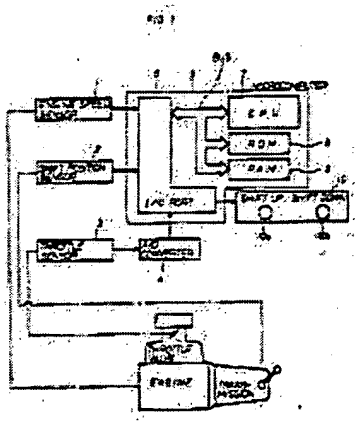
subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift notification circuit." as taught in Independent claims 1, 17, and 23.

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 17, and 23 of the '781 Patent. Further, Saturn '452 teachings are new and non-cumulative. Accordingly, Saturn '452 raises a substantial new question of patentability as to at least independent claims 1, 17, and 23 of the '781 Patent that have not been decided in a previous examination. Dependent claims 2, 4, 5, 18 – 22, 24, and 25 are brought in at least due to their dependency on Independent claims 1, 17, and 23.

Alleged SNQ based upon Toyota '599

Toyota '599 is presented to determine if a SNQ of patentability regarding Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent is raised as stated in the Second and Forth proposed rejections, see above. Toyota '599 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Toyota '599 discloses a "shift indication apparatus coupled to a plurality of sensors. An overview of this system is illustrated in Figure 1:



Toyota '599 discloses that indicator lamps that tell the driver to shift up or shift down are lit by the microcomputer in order to tell the driver when to shift to improve fuel economy "Namely, in this step, the speed change operation indicating signal is applied to the indicator or display 10 from the microcomputer 5 through the I/O port 6. As a result, a particular lamp in this case, a shift up indicating lamp in the indicator 10, is illuminated, thus indicating to the drive that the speed change from current shift position to the one step shifting up position SP_{+1} is preferable." Col. 5, line 63 to col. 6, line 2. "However, only when either one of the assumed fuel consumption rates above is better than the current fuel consumption rate Bc, the corresponding shift-up lamp or shift-down lamp in the indicator 10 is illuminated, thus indicating the necessity of the speed change operation." E.g. col. 7, lines 29 to 38. Therefore, Toyota '599 discloses "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" and "said processor subsystem determining, based upon data received from said plurality of sensors,.. when to activate said upshift[/downshift] notification circuit."

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent. Further, Toyota '599 teachings are new and non-cumulative. Accordingly, Toyota '599 raises a substantial new question of patentability as to at least independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent that have not been decided in a previous examination. Dependent claims 2, 4,

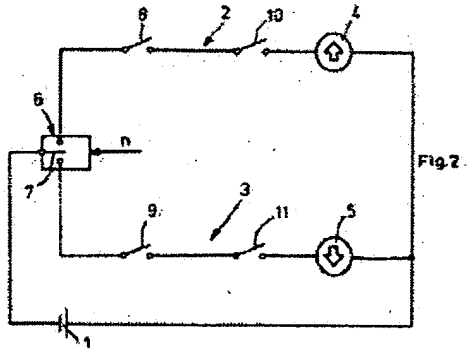
5, 8, 10, 12, 15, 18 – 22, 24, 25, and 27 are brought in at least due to their dependency on Independent claims 1, 7, 13, 17, 23, and 26.

Alleged SNQ based upon Volkswagen '070

Volkswagen '070 is presented to determine if a SNQ of patentability regarding Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent is raised as stated in the Third and Fifth proposed rejections, see above. Volkswagen '070 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Volkswagen '070 discloses:

> Volkswagen '070 discloses a device "that assists the operator of [an] internal combustion engine equipped with a conventional transmission." Page 5. The device receives an engine speed signal "with the aid of known sensor systems" and uses it to activate an "engine-speed dependent change-over switch 6." Page 7. Volkswagen '070 describes two operating ranges, I and II, and the change-over switch 6 indicates that an upshift or downshift is necessary when the limits of those ranges (*e.g.*, the RPM set point) is reached. Pages 6–8. For example, Figure 2 of Volkswagen '070 illustrates the change-over switch, which receives the engine speed signal and determines when to activate the upshift and downshift notification lamps 4 and 6:



Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent. Further, Volkswagen '070 teachings are new and non-cumulative. Accordingly, Volkswagen '070 raises

a substantial new question of patentability as to at least independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent that have not been decided in a previous examination.

Alleged SNQ based upon Davidian

Davidian is presented to determine if a SNQ of patentability regarding claims 17, 23, 26, and 31 of the '781 Patent is raised as stated in the Fourth, Fifth, Sixth and Tenth proposed rejection, see above. Davidian was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Davidian discloses a memory subsystem that stores a vehicle speed/stopping distance table. *"Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table,* for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is *stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary."* Col. 9, lines 20 to 27. This memory subsystem is a part of the microcomputer 4, as illustrated in FIG. 6A. Therefore, Davidian discloses "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table." Davidian discloses a vehicle proximity alarm circuit, which activates a collision alarm when a calculated "Collision Distance" is close to a calculated "Stopping Distance." "A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then

actuated." Col. 12, line 59 to col. 13, line 11. The collision alarm, may be an audio alarm or a visual alarm. Col. 9, lines 52 to 56. The determination whether to activate the collision alarm is made by the calculation module 90, which is part of the microcomputer 4. *See* col. 12, line 27 ("Operation of the Calculation Module 90"). Therefore, Davidian discloses "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object." Davidian also discloses that the processor subsystem determines when to activate the proximity alarm based on (1) separation distance data (received from the front vehicle space sensor 8); (2) vehicle speed data (received form vehicle speed sensor 12); and (3) the vehicle speed/stopping distance table stored in memory. The radar input, the vehicle speed input, and the vehicle speed/stopping distance tables are all located in the calculation module 90, which it uses to calculate stopping distance and collision distance. Therefore, Davidian discloses "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claim 31 of the '781 Patent. Further, Davidian teachings are new and non-cumulative. Accordingly, Davidian raises a substantial new question of patentability as to at least independent claim 31 of the '781 Patent that have not been decided in a previous examination. Dependent claim 32 is brought in at least due to their dependency on Independent claim 31.

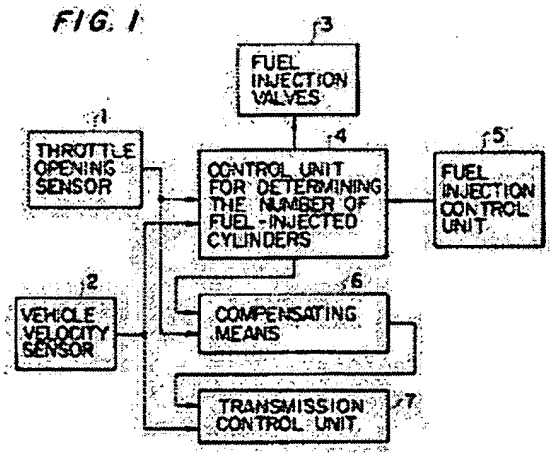
Davidian does not disclose "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed," OR "a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed." Davidian teachings alone would not be pertinent to a reasonable examiner in deciding patentability as to at least Independent claims 1, 17, 23, and 26 of the '781 Patent. Accordingly, Davidian does **not** raises a substantial new question of patentability as to independent claims 1, 17, 23, and 26 of the '781 Patent.

Alleged SNQ based upon Nissan '055

Nissan '055 is presented to determine if a SNQ of patentability regarding Independent claim 28 of the '781 Patent is raised as stated in the Seventh proposed rejection, see above. Nissan '055 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Nissan '055 discloses a control system that "controls the number of fuel injected cylinders" in order to increase fuel economy. Abstract. Figure 1 of Nissan '055 discloses that a throttle opening sensor and vehicle velocity sensor are inputs to the system:

FIG. 1



Nissan '055 discloses that "when the signal from the vehicle velocity sensor 2 exceeds a predetermined level and at the same time the signal from the throttle opening sensor 1 falls below another predetermined level, the control unit 4 determines the number of cylinders to which fuel is actually injected based on the two signals applied and stops injection of fuel to specified one or more cylinders." Col. 2, lines 59 to 66. Nissan '055 does not refer to the use of a manifold pressure sensor.

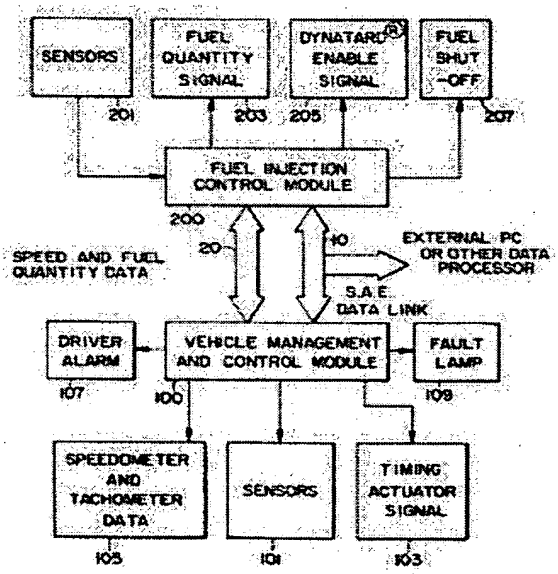
Nissan '055 does not disclose "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor" since Nissan '055 does not take into consideration the manifold pressure in their determination.

Nissan '055 teachings alone would not be pertinent to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. Accordingly, Nissan '055 alone does **not** raise a substantial new question of patentability as to independent claim 28 of the '781 Patent.

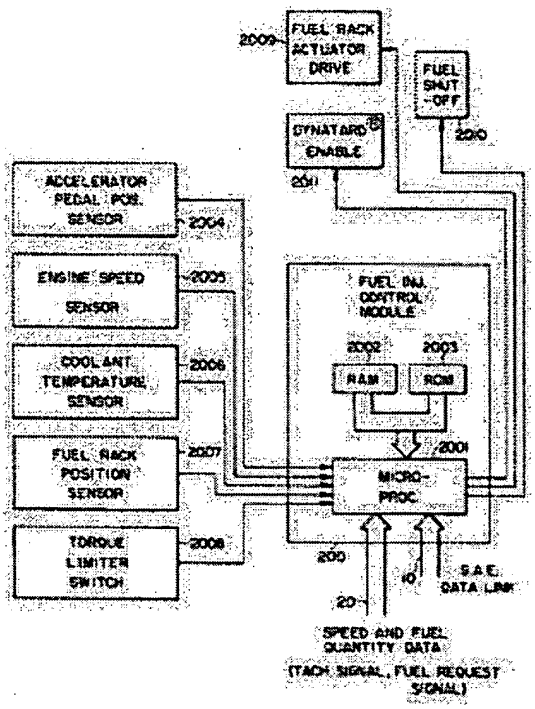
Alleged SNQ based upon Mack '324

Mack '324 is presented to determine if a SNQ of patentability regarding Independent claim 28 of the '781 Patent is raised as stated in the Eighth proposed rejection, see above. Mack '324 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Mack '324 discloses an engine and vehicle management and control system. Figure 1 of Mack '324 illustrates an overview of the system:



The fuel injection control module 200 in Mack '324 contains a microprocessor 2001, and receives inputs from sensors 201 and outputs a fuel quantity signal 203 and a fuel shut\-off enable signal 207. Col. 2, lines 33 to 27. Figure 3 illustrates the details of the fuel injection control module:



Inputs to the fuel injection control module include sensor inputs from "an accelerator pedal position sensor 2005, an engine speed sensor 2005, a coolant temperature sensor 2006, a fuel rack position sensor 2007, and a torque limiter switch 2008." Col. 3, lines 57 to 61. Mack '324 discloses a fuel injection signal that stops fuel being injected to the engine when certain overspeed conditions are met. Col. 6, lines 24 to 53. The fuel request signal is sent by the fuel injection control module, to which the sensors are input. However, Mack '324 does not refer to the use of a manifold pressure sensor. Therefore, Mack '324 does not disclose "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor," since Mack '324 does not need a manifold pressure sensor in their

determination as to how much fuel is sent to the engine and said system prevents too much fuel from being injected into the system.

Accordingly, Mack '324 teachings alone would not be important to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. Mack '324 teachings are new and non-cumulative. Accordingly, Mack '324 alone does **not** raise a substantial new question of patentability as to independent claim 28 of the '781 Patent.

Alleged SNQ based upon GM '753

GM '753 is presented to determine if a SNQ of patentability regarding Independent claim 28 of the '781 Patent is raised as stated in the Ninth proposed rejection, see above. GM '753 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

GM '753 discloses a "warning system for providing an indication when the fuel consumption of a throttle controlled vehicle having an internal combustion engine with an intake manifold exceeds pre-established levels." The vacuum transducer 12 of GM '753 "is effective to generate a voltage having a magnitude which progressively changes with a progressively increased manifold intake level." Col. 1, lines 38 to 55. The speed transducer "generates a series of voltage pulses having a frequency progressively increasing with increasing vehicle speed." Col. 2, lines 34 to 51. These inputs are fed to an analog circuit, which is used to send current to a lamp when a level "determined to represent excessive fuel consumption" is reached. Col. 2, lines 52 to 58. "When the vehicle is operated in a manner such that the manifold vacuum decreases below the manifold vacuum trigger level established at the instantaneous vehicle speed, *the output of the summing switch 14 swings positive to effect energization of the lamp 30 to provide*

an indication of fuel consumption in excess of the predetermined amount at that speed." Col. 3, lines 20 to 27. GM '753 does not refer to the use of a throttle position sensor, nor any other specific sensor in their system. There is also no processor in which the information is determined as to whether or not to activate said fuel overinjection notification sensor. Therefore, GM '753 does not disclose "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

Accordingly, these teachings alone would not be important to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. GM '753 teachings are new and non-cumulative. Accordingly, GM '753 alone does **not** raise a substantial new question of patentability as to independent claim 28 of the '781 Patent.

Alleged SNQ based upon Tonkin

Tonkin is presented to determine if a SNQ of patentability regarding Independent claim 31 of the '781 Patent is raised as stated in the Eleventh proposed rejection, see above. Tonkin was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Tonkin discloses a system that calculates a safety envelope and displays a visible warning when a rear-facing vehicle is getting too near. Abstract. Tonkin discloses the use of a radar sensor in order to determine "distance of separation and/or a relative velocity of a trailing vehicle." Page 1, lines 23 - 29. *See also* page 5, lines 4 - 9, "The sensor means for sensing the distance and velocity of the trailing vehicle may comprise a radar system." Tonkin also discloses

the use of sensors, including a velocity sensing means comprising "a conventional speed sensing device fitted to the vehicle's transmission train." Page 5, lines 17 - 19. Tonkin discloses the use of a memory subsystem that stores parameters in a lookup table, including a vehicle speed/stopping distance table. For example, Tonkin discloses that predetermined driving parameters "may for example be stored in a look up table." Page 3, lines 25 - 32. Additionally, the control system that activates the vehicle proximity alarm relies in part on "known safe stopping distances such as those published by the Minister of Transport, in which a vehicle will stop when the brakes are applied." Page 16, lines 2 - 21. Finally, Tonkin discloses that a look-up table or database could be provided for unsafe closing speeds, which could be varied according to the velocity of the subject vehicle." Page 17, lines 7 - 25. Tonkin discloses that the processor subsystem determines when to activate the proximity alarm circuit based upon (1) separation distance data received from said radar detector; (2) vehicle speed data received from said road speed sensor; and (3) the vehicle speed/stopping distance table. For example, the radar system is "operable to sense a distance of separation and/or a relative velocity of a trailing vehicle." Page 1, lines 32 - 34. The processor subsystem "is operable to process the received velocity signal and data signals to determine the existence of an unsafe condition." The velocity signal used by the processing means is the vehicle velocity signal determined from the vehicle speed sensor. Page 5, lines 17 - 19. The data signals include the separation data (determined from the radar), and the determination regarding whether to activate the alarm is made, in part, using the safe stopping distances provided in the look-up table. Page 17, lines 7 to 25. Therefore, Tonkin discloses "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from

said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claim 31 of the '781 Patent. Further, Tonkin teachings are new and non-cumulative. Accordingly, Tonkin raises a substantial new question of patentability as to at least independent claim 31 of the '781 Patent that have not been decided in a previous examination. Dependent claim 32 is brought in at least due to their dependency on Independent claim 31.

Alleged SNQ based upon Doi

Doi is presented to determine if a SNQ of patentability regarding Independent claim 31 of the '781 Patent is raised as stated in the Eleventh proposed rejection, see above. Doi was present as prior art in prior prosecutions of the application which became the '781 Patent.

In an amendment from the Applicant, dated February 8, 1999, the Applicant asserted that claim 31, previously claim 37 in the '270 Application:

> The Applicants respectfully submit that new Claims 37-38, as presented herein, are neither taught nor suggested by the proposed combination of Chasteen and Doi et al. The Examiner properly cited Doi et al. as disclosing a vehicle running mode detection system equipped with a radar detector and an alarm circuit. The Applicants respectfully note, however, that the system disclosed in Doi et al. determines alert conditions relative to the proximity between a vehicle and a forward object based upon changes in the distance separating the vehicle and the forward object. In contrast, Applicants' apparatus for optimizing vehicle operation set forth in Claim 37 includes a processor subsystem configured to activate a vehicle proximity alarm circuit based upon road speed (as determined by a road speed sensor), separation (as determined by a radar detector) and a vehicle speed/stopping distance table stored in a memory subsystem.

Also see, The Request pp. 11-14 for more details.

The Examiner of the '270 Application subsequently issued a Notice of Allowance stating that the prior art did not teach the limitation in question, which is the basis for the SNQ of claim 31. It is further seen in the Request, pages 80 – 83, that the Requester utilizes Doi in the same way as what was already discussed by the Applicant and agreed to by the Examiner of the '270 Application in their reasons for allowance, i.e., Doi does not disclose the limitation that is the basis for SNQ for claim 31. Doi is not new prior art and also not used or presented in a new light that would raise a SNQ for claim 31. Therefore, it is seen that Doi alone does not disclose a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem.

Accordingly, these teachings would **not** be important to a reasonable examiner in deciding patentability as to at least Independent claim 31 of the '781 Patent. Accordingly, Doi alone does **not** raise a substantial new question of patentability as to independent claim 31 of the '781 Patent.

Conclusion

A Request for *ex parte* reexamination of United States Patent Number 5,954,781 is Ordered.

A substantial new question of patentability affecting claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 30 of United States Patent Number 5,954,781 is raised by the Request for *ex parte*

reexamination based on the Jurgen, Saturn '452, Toyota '599, and Volkswagen '070 cited areas supplied by the Requester.

A substantial new question of patentability affecting claims 31 and 32 of United States Patent Number 5,954,781 is raised by the Request for *ex parte* reexamination based on the Davidian, and Tonkin cited areas supplied by the Requester.

Therefore, claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 32 will be reexamined.

Nissan '055, Mack '324, and GM '753 alone do **Not** raise a SNQ affecting claims 28 – 30. Davidian alone does **Not** raise a SNQ affecting claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 27. Doi alone does **Not** raise a SNQ affecting claims 31 and 32.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Notification of Concurrent Proceedings

The patent owner is reminded of the continuing responsibility under 37 CFR 1.985 to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the '469 Patent throughout the course of this reexamination proceeding. The third party requester is

also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html.

By Mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

For EFS-Web transmissions, 37 CFR 1.8(a)(1)(i) (C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the Office's electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/David E. England/
Primary Examiner, Art Unit 3992

Conferees:

/Michael J. Yigdall/
Primary Examiner, Art Unit 3992

/Fred Ferris/
Acting SPRS CRU

Receipt date: 05/22/2014

LIST OF DOCUMENTS CITED BY THIRD PARTY REQUESTER IN *EX PARTE* REEXAMINATION	PATENT NO. 5,954,781	PATENTEE Harvey SLEPIAN et al.
	PATENT DATE September 21, 1999	

U. S. PATENT DOCUMENTS

EXAM. INITIAL	PATENT/ PUBLICATION NUMBER	NAME	PATENT/ PUBLICATION DATE	CLASS	SUBCLASS	FILING DATE
	4,901,701	Chasteen	February 20, 1990			
	4,631,515	Blee et al.	December 23, 1986			
	5,708,584	Doi et al.	January 13, 1998			
	5,477,452	Milunas et al.	December 19, 1995			
	4,559,599	Habu et al.	December 17, 1985			
	5,357,438	Davidian	October 18, 1994			
	4,061,055	Iizuka et al.	December 6, 1977			
	5,121,324	Rini et al.	June 9, 1992			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	COUNTRY	DATE	NAME	SUBCLASS	TRANSLATION	
						YES	NO
	29 26 070*	DE	January 15, 1981			X	
	96/02853	WO	February 1, 1996				

* - Certified English-language translation is provided.

OTHER DOCUMENTS

EXAMINER INITIAL	Name
	"First Amended Complaint for Patent Infringement" filed on January 30, 2014 in *VELOCITY PATENT LLC v. AUDI OF AMERICA, INC.*, Case No. 1:13-cv-08418-JGB (N.D. Ill.)
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Audi
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Mercedes-Benz
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Chrysler
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Jaguar Land Rover

EXAMINER /David England/	DATE CONSIDERED 06/20/2014

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /DE/

Receipt date: 05/22/2014

LIST OF DOCUMENTS CITED BY THIRD PARTY REQUESTER IN *EX PARTE* REEXAMINATION	PATENT NO. 5,954,781	PATENTEE Harvey SLEPIAN et al.
	PATENT DATE September 21, 1999	

U. S. PATENT DOCUMENTS

EXAM. INITIAL	PATENT/ PUBLICATION NUMBER	NAME	PATENT/ PUBLICATION DATE	CLASS	SUBCLASS	FILING DATE
	3,925,753	Auman et al.	December 9, 1975			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	COUNTRY	DATE	NAME	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS

EXAMINER INITIAL	Name
	"Automotive Electronics Handbook," pgs. 2.5-2.9, 3.16, 7.6-7.8, 7.21-7.26, 11.3-11.4, 11.24-11.31, 11.55, 12.1-12.36, 13.1-13.21, 14.1-14.9, and 22.1-22.20, published in 1995, by Ronald Jurgen
	Certified English-language translation of German Patent Application Publication No. 29 26 070

EXAMINER /David England/	DATE CONSIDERED 06/20/2014

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /DE/

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/013,252	05/22/2014	5,954,781	

CONFIRMATION NO. 9999

POWER OF ATTORNEY NOTICE

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

OC00000069364177

Date Mailed: 07/02/2014

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/27/2014.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/jawhitfield/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/013,252	05/22/2014	5,954,781	

CONFIRMATION NO. 9999

POA ACCEPTANCE LETTER

88360
Richards Patent Law P.C.
233 S. Wacker Dr., 84th Floor
Chicago, IL 60606

OC000000069364247

Date Mailed: 07/02/2014

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/27/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/jawhitfield/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,252	05/22/2014	5,954,781		9999

7590 06/27/2014

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EXAMINER	
ENGLAND, DAVID E	

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
06/27/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

KENYON & KENYON LLP

ONE BROADWAY

NEW YORK, NY 10004

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/013,252*.

PATENT NO. *5,954,781*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

MERCEDES
EXHIBIT 1012-260

1. The present application is being examined under the pre-AIA first to invent provisions.

DECISION GRANTING EX PARTE REEXAMINATION

A Request for *ex parte* reexamination affecting claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15 and 17 – 32 of United States Patent Number 5,954,781 (hereafter "the '781 Patent") has been submitted on 05/22/2014.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Prosecution History

The '781 Patent was issued on September 21 1999 from U.S. Application Serial No. 08/813,270, hereinafter "the '270 Application", filed on March 10, 1997.

The prosecution history of the '781 Patent includes:

The '270 application was filed on March 10, 1997 with 32 claims, of which application claims 1, 14, 18, and 27 were the only independent claims. Among these independent claims, application claim 1 included a fuel overinjection circuit, application claim 14 included a fuel overinjection circuit, an upshift notification circuit, and a downshift notification circuit,

application claim 18 included a vehicle proximity alarm, and application claim 27 included a fuel overinjection circuit and a vehicle proximity alarm.

In the only Office Action, dated August 6, 1998, application claims 1, 2 and 4 to 6 were rejected as obvious in view of U.S. Patent No. 4,901,701 to Chasteen (copy attached as Exhibit 3), application claim 3 was rejected as obvious in view of the combination of Chasteen and U.S. Patent No. 4,631,515 to Blee et al. (copy attached as Exhibit 4), and application claims 7, 18 to 24, 27, and 28 were rejected as obvious in view of the combination of Chasteen and U.S. Patent No. 5,708,584 to Doi et al. (copy attached as Exhibit 5).

In the Office Action, the Examiner stated that application claims 8 to 13, 25, 26, and 29 to 32 included allowable subject matter. Specifically, the Examiner stated that application claims 8, 25, and 29 included allowable subject matter on the basis that "the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit." Similarly, the Examiner stated that application claims 11, 26, and 31 included allowable subject matter on the basis that "the prior art fails to disclose a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit." In addition, application claims 14 - 17, which included both an upshift notification circuit and a downshift notification circuit, were allowed on the basis that:

the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit.

In response to this Office Action, the applicant submitted an Amendment on February 8, 1999 with numerous amendments, see the response to Office Action and the Request pages 6 – 13 for further explanation. The '270 Application was subsequently allowed, see Notice of Allowance dated 04/21/1999 or the Request pages 13 and 14 for further details. The Examiner stated in their reasons for allowance that:

> The prior art fails to disclose an apparatus for optimizing operation of a vehicle and comprising an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive speed and the processor determines when to activate the upshift notification circuit, and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing

> a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit.

The Notice of Allowance further states that:

> Nor does the prior art discloses [sic] a fuel overinjection notification circuit coupled to the processor subsystem, wherein the fuel overinjection notification circuit issuing a notification that excess fuel is being supplied to the engine of the vehicle and the processor subsystem determining whether to activate the fuel overinjection notification circuit based upon data received from the road speed sensor, the throttle position sensor and the manifold sensor.

Additionally, the Notice of Allowance states:

> Nor does the prior art discloses [sic] that the processor subsystem determines whether to activate the vehicle proximity alarm circuit based upon separation distance data received from the radar detector, vehicle speed/stopping distance table stored in the memory subsystem.

Proposed Substantial New Question of Patentability

Third Party Requester ("Requester") identifies the following printed publications as evidence that a substantial new question should be raised in the Request, see pp. 15-16.

1. Automotive Electronics Handbook, by Ronald Jurgen ("Jurgen"), attached as exhibit 11.
2. U.S. Patent No. 5,477,452 to Milunas et al. ("Saturn '452"), attached as exhibit 12.
3. U.S. Patent No. 4,559,599 to Habu et al. ("Toyota '599"), attached as exhibit 13.
4. German Patent Application Publication No. 29 26 070 ("Volkswagen '070"), attached as exhibit 14.
5. U.S. Patent No. 5,357,438 to Davidian ("Davidian"), attached as exhibit 15.

6. U.S. Patent No. 4,061,055 to Iizuka et al. ("Nissan '055"), attached as exhibit 16.

7. U.S. Patent No. 5,121,324 to Rini et al. ("Mack '324"), attached as exhibit 17.

8. U.S. Patent No. 3,925,753 to Auman et al. ("GM '452"), attached as exhibit 18.

9. PCT Publication No. WO 96/02853 ("Tonkin"), attached as exhibit 19.

Requester has alleged a substantial new question, "SNQ", of patentability in light of proposed rejections which are stated below:

- The 1st Proposed Rejection: Claim 1 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Saturn '452.
- The 2nd Proposed Rejection: Claims 1, 7, and 13 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Toyota '599.
- The 3rd Proposed Rejection: Claims 1, 7, and 13 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Volkswagen '070.
- The 4th Proposed Rejection: Claims 17-23 and 26 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Davidian.
- The 5th Proposed Rejection: Claims 17-23 and 26 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Davidian.
- The 6th Proposed Rejection: Claims 17-21 and 23 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Davidian.

- The 7th Proposed Rejection: Claims 28-30 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Nissan '055.
- The 8th Proposed Rejection: Claims 28-30 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Mack '324.
- The 9th Proposed Rejection: Claims 28-30 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and GM '753.
- The 10th Proposed Rejection: Claim 31 is alleged as Anticipated Under 35 U.S.C. § 102(b) by Davidian.
- The 11th Proposed Rejection: Claims 31 and 32 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Tonkin and Doi et al.

Requester has proposed rejections for dependent claims that are not the basis for the SNQ, which are stated below:

- The 12th Proposed Rejection: Claims 2, 4, and 5 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Chasteen.
- The 13th Proposed Rejection: Claims 2, 4, 5, 8, 10, 12, and 15 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Chasteen.
- The 14th Proposed Rejection: Claims 2, 4, 5, 8, 10, 12, and 15 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Chasteen.

- The 15th Proposed Rejection: Claim 18 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin.
- The 16th Proposed Rejection: Claim 18 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin.
- The 17th Proposed Rejection: Claim 18 is alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin.
- The 18th Proposed Rejection: Claims 24 and 25 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian and Chasteen.
- The 19th Proposed Rejection: Claims 24, 25, and 27 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian and Chasteen.
- The 20th Proposed Rejection: Claims 24, 25, and 27 are alleged as Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian and Chasteen.
- The 21st Proposed Rejection: Claim 32 is alleged as Obvious Under 35 U.S.C. § 103(a) in in View of the combination of Davidian and Tonkin.

Analysis of Substantial New Question of Patentability

A SNQ of patentability is raised by a cited patent or printed publication when there is a substantial likelihood that a reasonable examiner would consider the prior art patent or printed publication important in deciding whether or not the claim is patentable. A SNQ of patentability is not raised by prior art presented in a reexamination request if the Office has previously considered (in an earlier examination of the patent) the same question of patentability as to a patent claim favorable to the patent owner based on the same prior art patents or printed publications. In re Recreative Technologies, 83 F.3d 1394, 38 USPQ2d 1776 (Fed. Cir. 1996). The substantial new question of patentability may be based on art previously considered by the Office if the reference is presented in a new light or a different way that escaped review during earlier examination. MPEP §2216.

It is not sufficient that a request for reexamination merely proposes one or more rejections of a patent claim or claims as a basis for reexamination. It must first be demonstrated that a patent or printed publication that is relied upon in a proposed rejection presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the patent for which reexamination is requested, and during the prosecution of any other prior proceeding involving the patent for which reexamination is requested. MPEP §2216.

Basis of SNQ

The '781 Patent was issued on September 21, 1999 from the '270 Application, filed on March 10, 1997. The previous Examiner of the '270 Application concluded the reasons for allowance for claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 27 was the prior art failed to teach

or suggest upshift or downshift notification circuits. Therefore the limitations that are the basis of the SNQ of patentability affecting independent claims 1, 7, 13, 17, 23, 26, and their dependent claims 2, 4, 5, 8, 10, 12, 15, 18 – 22, 24, 25 and 27, teaches the upshift or downshift and reads as follows:

> "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed."
>
> OR
>
> "a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed."

With respect to claims 28 - 30, the applicant in the original prosecution emphasized that the prior art failed to teach a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Therefore the limitation disclosed in independent claim 28 which is the basis of the SNQ of patentability, and also affecting dependent claims 29 and 30, reads as follows:

> "said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.;said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

With respect to claims 31 and 32, the applicant in the original prosecution emphasized that the prior art failed to teach a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem. The prosecution history focused on a vehicle proximity alarm that is activated based on these three parameters and was the basis for the reasons for allowance on these claims. Therefore the limitation disclosed in independent claim 31 which is the basis of the SNQ of patentability, also affecting dependent claim 32, reads as follows:

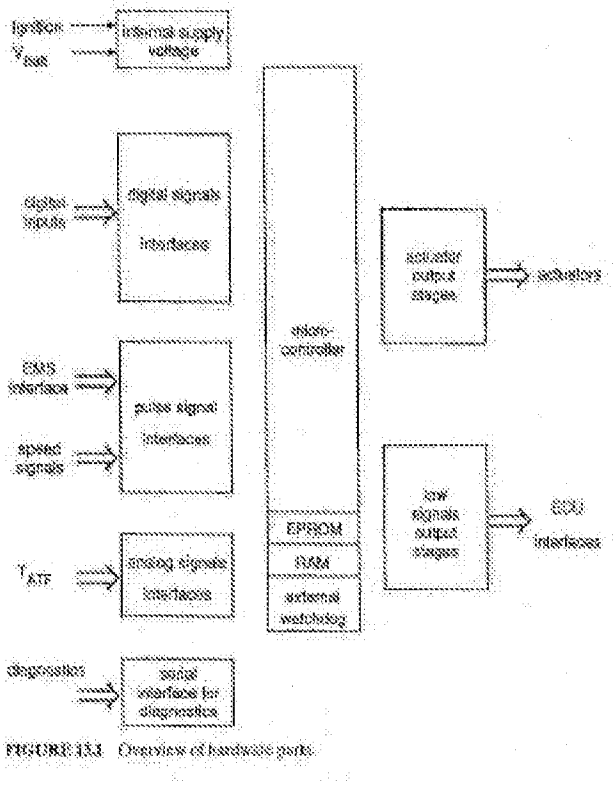
> "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Alleged SNQ based upon Jurgen

Jurgen is presented to determine if a SNQ of patentability regarding Independent claims 1, 7, 13, 17, 23, 26, 28 of the '781 Patent is raised as stated in the First to Ninth proposed rejections, see above. Jurgen was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal drivability.

(Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also discloses that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Jurgen illustrates these hardware parts:



Jurgen also discloses that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. “In the event that the particular shift characteristic is crossed (excessive/ insufficient) by one of either of the two input valves, the electronic ECU releases the shift by

activating the related actuator. This can be a direct shift into the target gear or by a serial activation of specific actuators in a fixed sequence to the target gear, depending on the transmission hardware design." (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, discloses "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" as taught in Independent claims 1, 7, 13, 17, 23, and 26.

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent. Further, Jurgen teachings are new and non-cumulative. Accordingly, Jurgen raises a substantial new question of patentability as to at least independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent that have not been decided in a previous examination. Dependent claims 2, 4, 5, 8, 10, 12, 15, 18 – 22, 24, 25, and 27 are brought in at least due to their dependency on Independent claims 1, 7, 13, 17, 23, and 26.

Jurgen discloses fuel injection notification circuit, which issues a notification to shut off fuel in certain situations. For Example, the ECU disclosed in Jurgen can shut of fuel in certain situation by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides a notification to the fuel injectors when a fuel cutoff state is reached.

Jurgen discloses based upon data received from said plurality of sensors, when to activate said fuel injection circuit and when to activate said upshift/downshift notification circuit. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Accordingly, Jurgen teachings, either alone or in combination with a secondary reference, would be important to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. Further, Jurgen teachings are new and non-cumulative. Accordingly, Jurgen raises a substantial new question of patentability as to at least independent claim 28 of the '781 Patent that have not been decided in a previous examination. Dependent claims 29 and 30 are brought in at least due to their dependency on Independent claim 28.

Alleged SNQ based upon Saturn '452

Saturn '452 Patent is presented to determine if a SNQ of patentability regarding Independent claims 1, 13, 17, 23, and 26 of the '781 Patent is raised as stated in the First and Sixth proposed rejection, see above. Saturn '452 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Saturn '452 discloses an upshift notification circuit connected to the control unit, which indicates "via line 60 the state of an upshift indicator light or equivalent visual display." Col. 2, lines 42 to 55. Therefore, it is seen that Saturn '452 discloses "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed" and "said processor

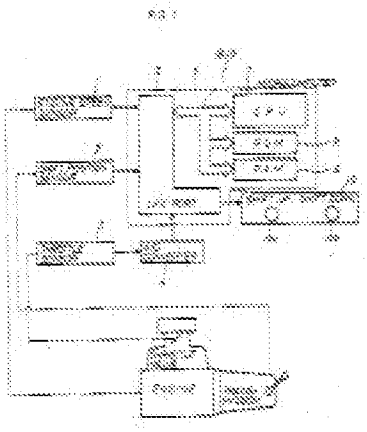
subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift notification circuit." as taught in Independent claims 1, 17, and 23.

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 17, and 23 of the '781 Patent. Further, Saturn '452 teachings are new and non-cumulative. Accordingly, Saturn '452 raises a substantial new question of patentability as to at least independent claims 1, 17, and 23 of the '781 Patent that have not been decided in a previous examination. Dependent claims 2, 4, 5, 18 – 22, 24, and 25 are brought in at least due to their dependency on Independent claims 1, 17, and 23.

Alleged SNQ based upon Toyota '599

Toyota '599 is presented to determine if a SNQ of patentability regarding Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent is raised as stated in the Second and Forth proposed rejections, see above. Toyota '599 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Toyota '599 discloses a "shift indication apparatus coupled to a plurality of sensors. An overview of this system is illustrated in Figure 1:



Toyota '599 discloses that indicator lamps that tell the driver to shift up or shift down are lit by the microcomputer in order to tell the driver when to shift to improve fuel economy "Namely, in this step, the speed change operation indicating signal is applied to the indicator or display 10 from the microcomputer 5 through the I/O port 6. As a result, a particular lamp in this case, a shift up indicating lamp in the indicator 10, is illuminated, thus indicating to the drive that the speed change from current shift position to the one step shifting up position SP_{+1} is preferable." Col. 5, line 63 to col. 6, line 2. "However, only when either one of the assumed fuel consumption rates above is better than the current fuel consumption rate Bc, the corresponding shift-up lamp or shift-down lamp in the indicator 10 is illuminated, thus indicating the necessity of the speed change operation." E.g. col. 7, lines 29 to 38. Therefore, Toyota '599 discloses "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" and "said processor subsystem determining, based upon data received from said plurality of sensors,.. when to activate said upshift[/downshift] notification circuit."

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent. Further, Toyota '599 teachings are new and non-cumulative. Accordingly, Toyota '599 raises a substantial new question of patentability as to at least independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent that have not been decided in a previous examination. Dependent claims 2, 4,

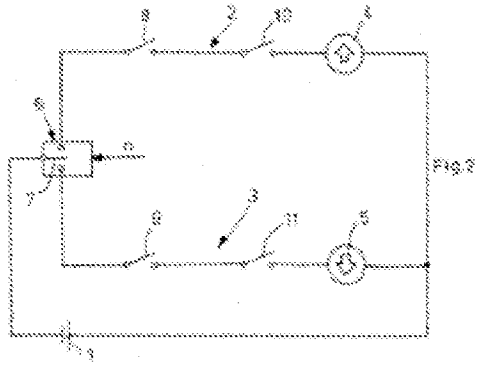
5, 8, 10, 12, 15, 18 – 22, 24, 25, and 27 are brought in at least due to their dependency on Independent claims 1, 7, 13, 17, 23, and 26.

Alleged SNQ based upon Volkswagen '070

Volkswagen '070 is presented to determine if a SNQ of patentability regarding Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent is raised as stated in the Third and Fifth proposed rejections, see above. Volkswagen '070 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Volkswagen '070 discloses:

> Volkswagen '070 discloses a device "that assists the operator of [an] internal combustion engine equipped with a conventional transmission." Page 5. The device receives an engine speed signal "with the aid of known sensor systems" and uses it to activate an "engine-speed dependent change-over switch 6." Page 7. Volkswagen '070 describes two operating ranges, I and II, and the change-over switch 6 indicates that an upshift or downshift is necessary when the limits of those ranges (e.g., the RPM set point) is reached. Pages 6–8. For example, Figure 2 of Volkswagen '070 illustrates the change-over switch, which receives the engine speed signal and determines when to activate the upshift and downshift notification lamps 4 and 6:



Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent. Further, Volkswagen '070 teachings are new and non-cumulative. Accordingly, Volkswagen '070 raises

a substantial new question of patentability as to at least independent claims 1, 7, 13, 17, 23, and 26 of the '781 Patent that have not been decided in a previous examination.

Alleged SNQ based upon Davidian

Davidian is presented to determine if a SNQ of patentability regarding claims 17, 23, 26, and 31 of the '781 Patent is raised as stated in the Fourth, Fifth, Sixth and Tenth proposed rejection, see above. Davidian was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Davidian discloses a memory subsystem that stores a vehicle speed/stopping distance table. *"Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table,* for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is *stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary."* Col. 9, lines 20 to 27. This memory subsystem is a part of the microcomputer 4, as illustrated in FIG. 6A. Therefore, Davidian discloses "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table." Davidian discloses a vehicle proximity alarm circuit, which activates a collision alarm when a calculated "Collision Distance" is close to a calculated "Stopping Distance." "A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then

actuated." Col. 12, line 59 to col. 13, line 11. The collision alarm, may be an audio alarm or a visual alarm. Col. 9, lines 52 to 56. The determination whether to activate the collision alarm is made by the calculation module 90, which is part of the microcomputer 4. *See* col. 12, line 27 ("Operation of the Calculation Module 90"). Therefore, Davidian discloses "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object." Davidian also discloses that the processor subsystem determines when to activate the proximity alarm based on (1) separation distance data (received from the front vehicle space sensor 8); (2) vehicle speed data (received form vehicle speed sensor 12); and (3) the vehicle speed/stopping distance table stored in memory. The radar input, the vehicle speed input, and the vehicle speed/stopping distance tables are all located in the calculation module 90, which it uses to calculate stopping distance and collision distance. Therefore, Davidian discloses "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

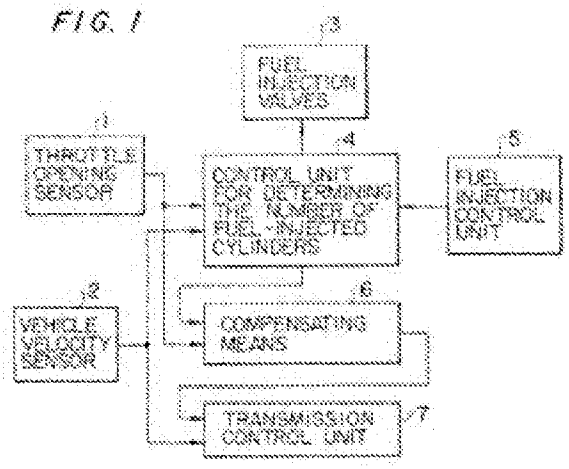
Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claim 31 of the '781 Patent. Further, Davidian teachings are new and non-cumulative. Accordingly, Davidian raises a substantial new question of patentability as to at least independent claim 31 of the '781 Patent that have not been decided in a previous examination. Dependent claim 32 is brought in at least due to their dependency on Independent claim 31.

Davidian does not disclose "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed," OR "a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed." Davidian teachings alone would not be pertinent to a reasonable examiner in deciding patentability as to at least Independent claims 1, 17, 23, and 26 of the '781 Patent. Accordingly, Davidian does **not** raises a substantial new question of patentability as to independent claims 1, 17, 23, and 26 of the '781 Patent.

Alleged SNQ based upon Nissan '055

Nissan '055 is presented to determine if a SNQ of patentability regarding Independent claim 28 of the '781 Patent is raised as stated in the Seventh proposed rejection, see above. Nissan '055 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Nissan '055 discloses a control system that "controls the number of fuel injected cylinders" in order to increase fuel economy. Abstract. Figure 1 of Nissan '055 discloses that a throttle opening sensor and vehicle velocity sensor are inputs to the system:



Nissan '055 discloses that "when the signal from the vehicle velocity sensor 2 exceeds a predetermined level and at the same time the signal from the throttle opening sensor 1 falls below another predetermined level, the control unit 4 determines the number of cylinders to which fuel is actually injected based on the two signals applied and stops injection of fuel to specified one or more cylinders." Col. 2, lines 59 to 66. Nissan '055 does not refer to the use of a manifold pressure sensor.

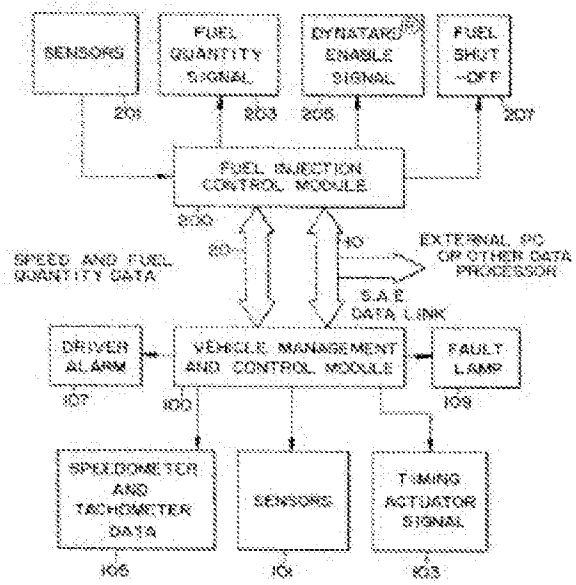
Nissan '055 does not disclose "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor" since Nissan '055 does not take into consideration the manifold pressure in their determination.

Nissan '055 teachings alone would not be pertinent to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. Accordingly, Nissan '055 alone does **not** raise a substantial new question of patentability as to independent claim 28 of the '781 Patent.

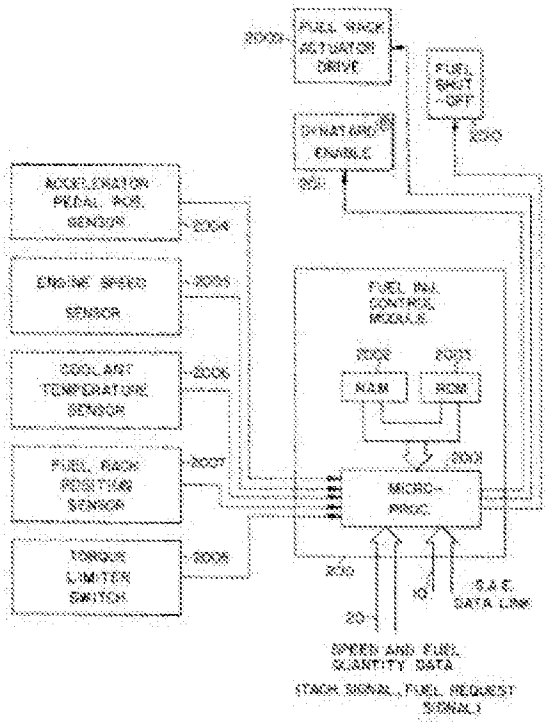
Alleged SNQ based upon Mack '324

Mack '324 is presented to determine if a SNQ of patentability regarding Independent claim 28 of the '781 Patent is raised as stated in the Eighth proposed rejection, see above. Mack '324 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Mack '324 discloses an engine and vehicle management and control system. Figure 1 of Mack '324 illustrates an overview of the system:



The fuel injection control module 200 in Mack '324 contains a microprocessor 2001, and receives inputs from sensors 201 and outputs a fuel quantity signal 203 and a fuel shut\-off enable signal 207. Col. 2, lines 33 to 27. Figure 3 illustrates the details of the fuel injection control module:



Inputs to the fuel injection control module include sensor inputs from "an accelerator pedal position sensor 2005, an engine speed sensor 2005, a coolant temperature sensor 2006, a fuel rack position sensor 2007, and a torque limiter switch 2008." Col. 3, lines 57 to 61. Mack '324 discloses a fuel injection signal that stops fuel being injected to the engine when certain overspeed conditions are met. Col. 6, lines 24 to 53. The fuel request signal is sent by the fuel injection control module, to which the sensors are input. However, Mack '324 does not refer to the use of a manifold pressure sensor. Therefore, Mack '324 does not disclose "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor," since Mack '324 does not need a manifold pressure sensor in their

determination as to how much fuel is sent to the engine and said system prevents too much fuel from being injected into the system.

Accordingly, Mack '324 teachings alone would not be important to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. Mack '324 teachings are new and non-cumulative. Accordingly, Mack '324 alone does **not** raise a substantial new question of patentability as to independent claim 28 of the '781 Patent.

Alleged SNQ based upon GM '753

GM '753 is presented to determine if a SNQ of patentability regarding Independent claim 28 of the '781 Patent is raised as stated in the Ninth proposed rejection, see above. GM '753 was not present as prior art in prior prosecutions of the application which became the '781 Patent.

GM '753 discloses a "warning system for providing an indication when the fuel consumption of a throttle controlled vehicle having an internal combustion engine with an intake manifold exceeds pre-established levels." The vacuum transducer 12 of GM '753 "is effective to generate a voltage having a magnitude which progressively changes with a progressively increased manifold intake level." Col. 1, lines 38 to 55. The speed transducer "generates a series of voltage pulses having a frequency progressively increasing with increasing vehicle speed." Col. 2, lines 34 to 51. These inputs are fed to an analog circuit, which is used to send current to a lamp when a level "determined to represent excessive fuel consumption" is reached. Col. 2, lines 52 to 58. "When the vehicle is operated in a manner such that the manifold vacuum decreases below the manifold vacuum trigger level established at the instantaneous vehicle speed, *the output of the summing switch 14 swings positive to effect energization of the lamp 30 to provide*

an indication of fuel consumption in excess of the predetermined amount at that speed." Col. 3, lines 20 to 27. GM '753 does not refer to the use of a throttle position sensor, nor any other specific sensor in their system. There is also no processor in which the information is determined as to whether or not to activate said fuel overinjection notification sensor. Therefore, GM '753 does not disclose "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

Accordingly, these teachings alone would not be important to a reasonable examiner in deciding patentability as to at least Independent claim 28 of the '781 Patent. GM '753 teachings are new and non-cumulative. Accordingly, GM '753 alone does **not** raise a substantial new question of patentability as to independent claim 28 of the '781 Patent.

Alleged SNQ based upon Tonkin

Tonkin is presented to determine if a SNQ of patentability regarding Independent claim 31 of the '781 Patent is raised as stated in the Eleventh proposed rejection, see above. Tonkin was not present as prior art in prior prosecutions of the application which became the '781 Patent.

Tonkin discloses a system that calculates a safety envelope and displays a visible warning when a rear-facing vehicle is getting too near. Abstract. Tonkin discloses the use of a radar sensor in order to determine "distance of separation and/or a relative velocity of a trailing vehicle." Page 1, lines 23 - 29. *See also* page 5, lines 4 - 9, "The sensor means for sensing the distance and velocity of the trailing vehicle may comprise a radar system." Tonkin also discloses

the use of sensors, including a velocity sensing means comprising "a conventional speed sensing device fitted to the vehicle's transmission train." Page 5, lines 17 - 19. Tonkin discloses the use of a memory subsystem that stores parameters in a lookup table, including a vehicle speed/stopping distance table. For example, Tonkin discloses that predetermined driving parameters "may for example be stored in a look up table." Page 3, lines 25 - 32. Additionally, the control system that activates the vehicle proximity alarm relies in part on "known safe stopping distances such as those published by the Minister of Transport, in which a vehicle will stop when the brakes are applied." Page 16, lines 2 - 21. Finally, Tonkin discloses that a look-up table or database could be provided for unsafe closing speeds, which could be varied according to the velocity of the subject vehicle." Page 17, lines 7 - 25. Tonkin discloses that the processor subsystem determines when to activate the proximity alarm circuit based upon (1) separation distance data received from said radar detector; (2) vehicle speed data received from said road speed sensor; and (3) the vehicle speed/stopping distance table. For example, the radar system is "operable to sense a distance of separation and/or a relative velocity of a trailing vehicle." Page 1, lines 32 - 34. The processor subsystem "is operable to process the received velocity signal and data signals to determine the existence of an unsafe condition." The velocity signal used by the processing means is the vehicle velocity signal determined from the vehicle speed sensor. Page 5, lines 17 - 19. The data signals include the separation data (determined from the radar), and the determination regarding whether to activate the alarm is made, in part, using the safe stopping distances provided in the look-up table. Page 17, lines 7 to 25. Therefore, Tonkin discloses "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from

said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Accordingly, these teachings would be important to a reasonable examiner in deciding patentability as to at least Independent claim 31 of the '781 Patent. Further, Tonkin teachings are new and non-cumulative. Accordingly, Tonkin raises a substantial new question of patentability as to at least independent claim 31 of the '781 Patent that have not been decided in a previous examination. Dependent claim 32 is brought in at least due to their dependency on Independent claim 31.

Alleged SNQ based upon Doi

Doi is presented to determine if a SNQ of patentability regarding Independent claim 31 of the '781 Patent is raised as stated in the Eleventh proposed rejection, see above. Doi was present as prior art in prior prosecutions of the application which became the '781 Patent.

In an amendment from the Applicant, dated February 8, 1999, the Applicant asserted that claim 31, previously claim 37 in the '270 Application:

> The Applicants respectfully submit that new Claims 37-38, as presented herein, are neither taught nor suggested by the proposed combination of Chasteen and Doi et al. The Examiner properly cited Doi et al. as disclosing a vehicle running mode detection system equipped with a radar detector and an alarm circuit. The Applicants respectfully note, however, that the system disclosed in Doi et al. determines alert conditions relative to the proximity between a vehicle and a forward object based upon changes in the distance separating the vehicle and the forward object. In contrast, Applicants' apparatus for optimizing vehicle operation set forth in Claim 37 includes a processor subsystem configured to activate a vehicle proximity alarm circuit based upon road speed (as determined by a road speed sensor), separation (as determined by a radar detector) and a vehicle speed/stopping distance table stored in a memory subsystem.

Also see, The Request pp. 11-14 for more details.

The Examiner of the '270 Application subsequently issued a Notice of Allowance stating that the prior art did not teach the limitation in question, which is the basis for the SNQ of claim 31. It is further seen in the Request, pages 80 – 83, that the Requester utilizes Doi in the same way as what was already discussed by the Applicant and agreed to by the Examiner of the '270 Application in their reasons for allowance, i.e., Doi does not disclose the limitation that is the basis for SNQ for claim 31. Doi is not new prior art and also not used or presented in a new light that would raise a SNQ for claim 31. Therefore, it is seen that Doi alone does not disclose a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem.

Accordingly, these teachings would **not** be important to a reasonable examiner in deciding patentability as to at least Independent claim 31 of the '781 Patent. Accordingly, Doi alone does **not** raise a substantial new question of patentability as to independent claim 31 of the '781 Patent.

Conclusion

A Request for *ex parte* reexamination of United States Patent Number 5,954,781 is Ordered.

A substantial new question of patentability affecting claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 30 of United States Patent Number 5,954,781 is raised by the Request for *ex parte*

reexamination based on the Jurgen, Saturn '452, Toyota '599, and Volkswagen '070 cited areas supplied by the Requester.

A substantial new question of patentability affecting claims 31 and 32 of United States Patent Number 5,954,781 is raised by the Request for *ex parte* reexamination based on the Davidian, and Tonkin cited areas supplied by the Requester.

Therefore, claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 32 will be reexamined.

Nissan '055, Mack '324, and GM '753 alone do **Not** raise a SNQ affecting claims 28 – 30. Davidian alone does **Not** raise a SNQ affecting claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 – 27. Doi alone does **Not** raise a SNQ affecting claims 31 and 32.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Notification of Concurrent Proceedings

The patent owner is reminded of the continuing responsibility under 37 CFR 1.985 to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the '469 Patent throughout the course of this reexamination proceeding. The third party requester is

also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html.

By Mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

For EFS-Web transmissions, 37 CFR 1.8(a)(1)(i) (C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the Office's electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/David E. England/
Primary Examiner, Art Unit 3992

Conferees:

/Michael J. Yigdall/
Primary Examiner, Art Unit 3992

/Fred Ferris/
Acting SPRS CRU

Order Granting / Denying Request For Ex Parte Reexamination	**Control No.** 90/013,252	**Patent Under Reexamination** 5,954,781
	Examiner DAVID ENGLAND	**Art Unit** 3992

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The request for *ex parte* reexamination filed *22 May 2014* has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a)☐ PTO-892, b)☐ PTO/SB/08, c)☒ Other: *IDS List*

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). **EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.**

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

/DAVID ENGLAND/ Primary Examiner, Art Unit 3992		

cc:Requester (if third party requester)

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90013252	5,954,781
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ **Patent Owner** ☒ **Third Party**

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

LITIGATION REVIEW ☐	/DE/ (examiner initials)	06/20/2014 (date)
Case Name		Director Initials
1:13cv8413 (OPEN)		
1:13cv8416 (OPEN)		
1:13cv8418 (OPEN)		
1:13cv8419 (OPEN)		
1:13cv8421 (OPEN)		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	**NUMBER**

	/DAVID ENGLAND/ Primary Examiner.Art Unit 3992

Receipt date: 05/22/2014

LIST OF DOCUMENTS CITED BY THIRD PARTY REQUESTER IN *EX PARTE* REEXAMINATION	PATENT NO. 5,954,781	PATENTEE Harvey SLEPIAN et al.
	PATENT DATE September 21, 1999	

U. S. PATENT DOCUMENTS

EXAM. INITIAL	PATENT/ PUBLICATION NUMBER	NAME	PATENT/ PUBLICATION DATE	CLASS	SUBCLASS	FILING DATE
	4,901,701	Chasteen	February 20, 1990			
	4,631,515	Blee et al.	December 23, 1986			
	5,708,584	Doi et al.	January 13, 1998			
	5,477,452	Milunas et al.	December 19, 1995			
	4,559,599	Habu et al.	December 17, 1985			
	5,357,438	Davidian	October 18, 1994			
	4,061,055	Iizuka et al.	December 6, 1977			
	5,121,324	Rini et al.	June 9, 1992			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	COUNTRY	DATE	NAME	SUBCLASS	TRANSLATION	
						YES	NO
	29 26 070*	DE	January 15, 1981			X	
	96/02853	WO	February 1, 1996				

* - Certified English-language translation is provided.

OTHER DOCUMENTS

EXAMINER INITIAL	Name
	"First Amended Complaint for Patent Infringement" filed on January 30, 2014 in *VELOCITY PATENT LLC v. AUDI OF AMERICA, INC.*, Case No. 1:13-cv-08418-JGB (N.D. Ill.)
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Audi
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Mercedes-Benz
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Chrysler
	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Jaguar Land Rover

EXAMINER /David England/	DATE CONSIDERED 06/20/2014

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /DE/

MERCEDES EXHIBIT 1012-293

LIST OF DOCUMENTS CITED BY THIRD PARTY REQUESTER IN *EX PARTE* REEXAMINATION	PATENT NO. 5,954,781	PATENTEE Harvey SLEPIAN et al.
	PATENT DATE September 21, 1999	

U. S. PATENT DOCUMENTS

EXAM. INITIAL	PATENT/ PUBLICATION NUMBER	NAME	PATENT/ PUBLICATION DATE	CLASS	SUBCLASS	FILING DATE
	3,925,753	Auman et al.	December 9, 1975			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	COUNTRY	DATE	NAME	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS

EXAMINER INITIAL	Name
	"Automotive Electronics Handbook," pgs. 2.5-2.9, 3.16, 7.6-7.8, 7.21-7.26, 11.3-11.4, 11.24-11.31, 11.55, 12.1-12.36, 13.1-13.21, 14.1-14.9, and 22.1-22.20, published in 1995, by Ronald Jurgen
	Certified English-language translation of German Patent Application Publication No. 29 26 070

EXAMINER	/David England/	DATE CONSIDERED	06/20/2014

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /DE/

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90013252	5,954,781
	Examiner	Art Unit
	DAVID ENGLAND	3992

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Searched references in IDS	6/18/14	/DE/

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/DAVID ENGLAND/ Primary Examiner.Art Unit 3992

PTO/AIA/83B (07-13)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

REEXAMINATION OR SUPPLEMENTAL EXAMINATION – PATENT OWNER POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS FOR REEXAMINATION OR SUPPLEMENTAL EXAMINATION AND PATENT

Control Number(s)	90013252
Filing Date(s)	05-22-2014
First Named Inventor	Harvey Slepian
Title	Method and Apparatus for Optimizing Vehicle Operation
Patent Number	5,954,781
Examiner Name	David E. England
Attorney Docket No(s)	1089-001

I. Power of Attorney. This form may be used to change the Power of Attorney in a reexamination or supplemental examination proceeding (or multiple proceedings where merged). This form may also be used to change the Power of Attorney in the patent file; in such a case, a copy of this form will be placed in both the patent file and the reexamination or supplemental examination proceeding.

A. Revocation of Previous Power of Attorney. I hereby revoke all previous patent owner powers of attorney, if any, given:

☒ in the above-identified reexamination or supplemental examination proceeding control number(s) (more than one may be changed only if the proceedings are merged).

☒ in the file of the above-identified patent.

(check BOTH boxes if change in BOTH the patent file and the reexamination or supplemental examination proceeding is requested).

B. Designation of Power of Attorney.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) to prosecute the proceeding(s)/patent identified above and selected in section I(A), and to transact all business in the United States Patent and Trademark Office connected therewith: 88360

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the proceeding(s) identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Authorization for the Power of Attorney is provided by the signature on page 2 of this form.

II. Change of Correspondence Address

Please recognize or change the correspondence address for the above-identified reexamination or supplemental examination proceeding control number(s) (more than one may be changed **only** if they are merged proceedings) **and for the file of the above-identified patent** to be:

☒ The address associated with the above-identified Customer Number.
OR
☐ The address associated with the Customer Number identified in the box at right:
OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

NOTE: THE CORRESPONDENCE ADDRESS FOR THE REEXAMINATION OR SUPPLEMENTAL EXAMINATION PROCEEDING CONTROL NUMBER(S) MUST BE THE SAME AS THAT FOR THE PATENT. SEE 37 CFR 1.33.

III. Authorization for Power of Attorney and (if selected) Change of Correspondence Address

I am the:
☐ Inventor, having ownership of the patent being reexamined.
OR
☒ Patent owner.
Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on _____.

Signature of Inventor or Patent Owner		Date	4/9/14
Name	Tom Mavrakakis	Telephone	
Title and Company	Managing Member of Velocity Patent LLC		

NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☒ A total of 1 forms are submitted. *If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	19437543
Application Number:	90013252
International Application Number:	
Confirmation Number:	9999
Title of Invention:	Method and Apparatus for Optimizing Vehicle Operation
First Named Inventor/Applicant Name:	5,954,781
Correspondence Address:	MICHAEL S. BUSH HAYNES AND BOONE LLP 3100 NATIONSBANK PLAZA 901 MAIN STREET DALLAS TX 75202-3789 US 2146515589 -
Filer:	Patrick Duffy Richards
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	27-JUN-2014
Filing Date:	22-MAY-2014
Time Stamp:	15:05:14
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73.	Statement.pdf	121575 f486680a0cf9a85be8c081da5bc7a4959f04d7ce	no	3
Warnings:					
Information:					
2	Power of Attorney	POA.pdf	890969 3621ad656b72041e58a38f2cbf9d636b6b66fad6	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	1012544		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office;U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of1995, no persons arerequired to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Velocity Patent LLC

Application No./Patent No.: 5,954,781 Filed/Issue Date: September 21, 1999

Titled: Method and Apparatus for Optimizing Vehicle Operation

Velocity Patent LLC, a limited liability company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Harvey Slepian and Loran Sutton To: TAS Distributing Co., Inc.

   The document was recorded in the United States Patent and Trademark Office at

   Reel 008435, Frame 0064, or for which a copy thereof is attached.

2. From: TAS Distributing Co., Inc. To: Velocity Patents LLC

   The document was recorded in the United States Patent and Trademark Office at

   Reel 031635, Frame 0364, or for which a copy thereof is attached.

MERCEDES
EXHIBIT 1012-301

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT UNDER 37 CFR 3.73(c)

3. From: Velocity Patents LLC To: Velocity Patent LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 031635, Frame 0376, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Patrick D. Richards/	June 26, 2014
Signature	Date
Patrick Richards	48905
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that yoube given certain informationin connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, pleasebe advised that: (1) the general authority forthe collection of thisinformation is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and(3) the principal purpose forwhich the information isused by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent applicationor patent. If you do not furnish the requested information,the U.S. Patent and Trademark Office may not be able to process and/or examineyour submission,which may result in termination of proceedings or abandonment of the applicationor expiration of the patent.

The informationprovided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the informationin order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an InternationalApplication filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, arecord may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from thissystem of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 9999

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
90/013,252	05/22/2014 RULE	701	3992	

AIA (First Inventor to File): YES

INVENTORS

5,954,781, Residence Not Provided;
VELOCITY PATENT LLC. (OWNER), ATHERTON, CA;
VOLKSWAGEN GROUP OF AMERICA, INC. (3RD PTY. REQ.), HERNDON, VA;

APPLICANTS

KENYON & KENYON LLP, NEW YORK, NY

**** CONTINUING DATA ***************************

This application is a REX of 08/813,270 03/10/1997 PAT 5954781

**** FOREIGN APPLICATIONS *********************

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☐ no				
35 USC 119 (a-d) conditions met	☐ yes ☐ no ☐ Met after Allowance			32	8
Verified and Acknowledged	Examiner's Signature Initials				

ADDRESS
88360

TITLE

Method and Apparatus for Optimizing Vehicle Operation

FILING FEE RECEIVED		
12000	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

MERCEDES
EXHIBIT 1012-304

Reexam

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,252	05/22/2014	5,954,781		9999

7590 06/04/2014

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

EXAMINER	
ENGLAND, DAVID E	
ART UNIT	PAPER NUMBER
3992	
MAIL DATE	DELIVERY MODE
06/04/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

MERCEDES
EXHIBIT 1012-305

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patents and Trademark Office
P.O.Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

Date: MAILED

JUN 04 2014

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. : 90013252
PATENT NO. : 5954781
ART UNIT : 3993

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified ex parte reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the ex parte reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Ex Parte Reexamination Interview Summary – Pilot Program for Waiver of Patent Owner's Statement	Control No. 90/013,252	Patent Under Reexamination is Requested 5,954,781
	Examiner England, David	Art Unit 3992

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

All participants (USPTO official and patent owner):

(1) Andrew Lowes (Firm no longer the attorney of record)

(2) Renee Preston, CRU Paralegal

(3)

(4)

Date of Telephonic Interview:06/04/2014.

A. The USPTO official requested waiver of the patent owner's statement pursuant to the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The patent owner **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

☐ The patent owner **did not agree** to waive its right to file a patent owner's statement under 35 U.S.C. 304 at this time.

☒ USPTO personnel were unable to reach the patent owner.**

B. The Patent Owner of record telephoned the Office and indicated they would like to participate in the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The Patent owner of record telephoned the Office and **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

The patent owner is not required to file a written statement of this telephone communication under 37 CFR 1.560(b) or otherwise. However, any disagreement as to this interview summary must be brought to the immediate attention of the USPTO, and no later than one month from the mailing date of this interview summary. Extensions of time are governed by 37 CFR 1.550(c).

*For more information regarding this pilot program, see *Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings*, 75 *Fed. Reg.* 47269 (August 5, 2010), available on the USPTO Web site at http://www.uspto.gov/patents/law/notices/2010.jsp.

**The patent owner may contact the USPTO personnel at (571) 272-7705 or at the telephone number provided below if the patent owner decides to waive the right to file a patent owner's statement under 35 U.S.C. 304.

Renee Preston Renee Preston (571) 272-7705
Signature and telephone number of the USPTO official, who contacted, was contacted by, or attempted to contact the patent owner.

cc: Requester (if third party requester)

MERCEDES
EXHIBIT 1012-307

Organization _____ Bldg./Room _____

UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. Box 1450
Alexandria, VA. 22313-1450
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RECEIVED
JUN 16 2014
USPTO MAIL CENTER

NIXIE 750 DE 1009 0006/12/14

RETURN TO SENDER
ATTEMPTED - NOT KNOWN
UNABLE TO FORWARD

BC: 22313145050 *0217-07492-05-41

22313145050
75202$3732 0003

MERCEDES
EXHIBIT 1012-308

IPJ Reexam

UNITED STATES PATENT AND TRADEMARK OFFICE

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REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/013,252	05/22/2014	5954781

CONFIRMATION NO. 9999

REEXAM ASSIGNMENT NOTICE

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

Date Mailed: 05/23/2014

NOTICE OF ASSIGNMENT OF REEXAMINATION REQUEST

The above-identified request for reexamination has been assigned to Art Unit 3993. All future correspondence to the proceeding should be identified by the control number listed above and directed to the assigned Art Unit.

A copy of this Notice is being sent to the latest attorney or agent of record in the patent file or to all owners of record. (See 37 CFR 1.33(c)). If the addressee is not, or does not represent, the current owner, he or she is required to forward all communications regarding this proceeding to the current owner(s). An attorney or agent receiving this communication who does not represent the current owner(s) may wish to seek to withdraw pursuant to 37 CFR 1.36 in order to avoid receiving future communications. If the address of the current owner(s) is unknown, this communication should be returned within the request to withdraw pursuant to Section 1.36.

NOTICE OF USPTO EX PARTE REEXAMINATION PATENT OWNER STATEMENT WAIVER PROGRAM

The USPTO has implemented a pilot program where, after a reexamination proceeding has been granted a filing date and before the examiner begins his or her review, the patent owner may orally waive the right to file a patent owner's statement. See *"Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings,"* 75 FR 47269 (August 5, 2010). One goal of the pilot program is to reduce the pendency of reexamination proceedings and improve the efficiency of the reexamination process.

Ordinarily when ex parte reexamination is ordered, the USPTO must wait until after the receipt of the patent owner's statement and the third party requester's reply, or after the expiration of the time period for filing the statement and reply (a period that can be as long as 5 to 6 months), before mailing a first determination of patentability. The USPTO's first determination of patentability is usually a first Office action on the merits or a Notice of Intent to Issue Reexamination Certificate (NIRC).

Under the pilot program, the patent owner's oral waiver allows the USPTO to act on the first determination of patentability immediately after determining that reexamination will be ordered, and in a suitable case issue the reexamination order and the first determination of patentability (which could be a NIRC if the claims under reexamination are confirmed) at the same time.

Benefits to the Patent Owner for participating in this pilot program include reduction in pendency.

To participate in this pilot program, Patent Owners may contact the USPTO's Central Reexamination Unit (CRU) at 571-272-7705. The USPTO will make the oral waiver of record in the reexamination file in an interview summary and a copy will be mailed to the patent owner and any third party requester.

cc: Third Party Requester(if any)
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

/jawhitfield/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

MERCEDES EXHIBIT 1012-309

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/013,252	05/22/2014	5954781

CONFIRMATION NO. 9999

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

REEXAMINATION REQUEST NOTICE

OC000000068636830

Date Mailed: 05/23/2014

NOTICE OF REEXAMINATION REQUEST FILING DATE

(Third Party Requester)

Requester is hereby notified that the filing date of the request for reexamination is 05/22/2014, the date that the filing requirements of 37 CFR § 1.510 were received.

A decision on the request for reexamination will be mailed within three months from the filing date of the request for reexamination. (See 37 CFR 1.515(a)).

A copy of the Notice is being sent to the person identified by the requester as the patent owner. Further patent owner correspondence will be the latest attorney or agent of record in the patent file. (See 37 CFR 1.33). Any paper filed should include a reference to the present request for reexamination (by Reexamination Control Number).

cc: Patent Owner
MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

/jawhitfield/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

MERCEDES
EXHIBIT 1012-310

Organization _____ Bldg/Room _____

United States Patent and Trademark Office
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ATTEMPTED - NOT KNOWN
UNABLE TO FORWARD

BC: 22313145050 *1992-09072-23-33

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,252	05/22/2014	5,954,781		9999

7590 06/04/2014

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

EXAMINER	
ENGLAND, DAVID E	

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
06/04/2014	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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United States Patents and Trademark Office
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MAILED

Date: JUN 04 2014

THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. : 90013252
PATENT NO. : 5954781
ART UNIT : 3993

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified ex parte reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the ex parte reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

MERCEDES
EXHIBIT 1012-313

Ex Parte Reexamination Interview Summary – Pilot Program for Waiver of Patent Owner's Statement	Control No. 90/013,252	Patent Under Reexamination is Requested 5,954,781
	Examiner England, David	Art Unit 3992

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

All participants (USPTO official and patent owner):

(1) Andrew Lowes (Firm no longer the attorney of record) (3)

(2) Renee Preston, CRU Paralegal (4)

Date of Telephonic Interview: 06/04/2014.

A. The USPTO official requested waiver of the patent owner's statement pursuant to the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The patent owner **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

☐ The patent owner **did not agree** to waive its right to file a patent owner's statement under 35 U.S.C. 304 at this time.

☒ USPTO personnel were unable to reach the patent owner.**

B. The Patent Owner of record telephoned the Office and indicated they would like to participate in the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The Patent owner of record telephoned the Office and **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

The patent owner is not required to file a written statement of this telephone communication under 37 CFR 1.560(b) or otherwise. However, any disagreement as to this interview summary must be brought to the immediate attention of the USPTO, and no later than one month from the mailing date of this interview summary. Extensions of time are governed by 37 CFR 1.550(c).

*For more information regarding this pilot program, see *Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings*, 75 *Fed. Reg.* 47269 (August 5, 2010), available on the USPTO Web site at http://www.uspto.gov/patents/law/notices/2010.jsp.

**The patent owner may contact the USPTO personnel at (571) 272-7705 or at the telephone number provided below if the patent owner decides to waive the right to file a patent owner's statement under 35 U.S.C. 304.

Renee Preston Renee Preston (571) 272-7705
Signature and telephone number of the USPTO official, who contacted, was contacted by, or attempted to contact the patent owner.

cc: Requester (if third party requester)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/013,252	05/22/2014	5954781

CONFIRMATION NO. 9999

REEXAM ASSIGNMENT NOTICE

MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

OC000000068636832

Date Mailed: 05/23/2014

NOTICE OF ASSIGNMENT OF REEXAMINATION REQUEST

The above-identified request for reexamination has been assigned to Art Unit 3993. All future correspondence to the proceeding should be identified by the control number listed above and directed to the assigned Art Unit.

A copy of this Notice is being sent to the latest attorney or agent of record in the patent file or to all owners of record. (See 37 CFR 1.33(c)). If the addressee is not, or does not represent, the current owner, he or she is required to forward all communications regarding this proceeding to the current owner(s). An attorney or agent receiving this communication who does not represent the current owner(s) may wish to seek to withdraw pursuant to 37 CFR 1.36 in order to avoid receiving future communications. If the address of the current owner(s) is unknown, this communication should be returned within the request to withdraw pursuant to Section 1.36.

NOTICE OF USPTO EX PARTE REEXAMINATION PATENT OWNER STATEMENT WAIVER PROGRAM

The USPTO has implemented a pilot program where, after a reexamination proceeding has been granted a filing date and before the examiner begins his or her review, the patent owner may orally waive the right to file a patent owner's statement. See *"Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings,"* 75 FR 47269 (August 5, 2010). One goal of the pilot program is to reduce the pendency of reexamination proceedings and improve the efficiency of the reexamination process.

Ordinarily when ex parte reexamination is ordered, the USPTO must wait until after the receipt of the patent owner's statement and the third party requester's reply, or after the expiration of the time period for filing the statement and reply (a period that can be as long as 5 to 6 months), before mailing a first determination of patentability. The USPTO's first determination of patentability is usually a first Office action on the merits or a Notice of Intent to Issue Reexamination Certificate (NIRC).

Under the pilot program, the patent owner's oral waiver allows the USPTO to act on the first determination of patentability immediately after determining that reexamination will be ordered, and in a suitable case issue the reexamination order and the first determination of patentability (which could be a NIRC if the claims under reexamination are confirmed) at the same time.

Benefits to the Patent Owner for participating in this pilot program include reduction in pendency.

To participate in this pilot program, Patent Owners may contact the USPTO's Central Reexamination Unit (CRU) at 571-272-7705. The USPTO will make the oral waiver of record in the reexamination file in an interview summary and a copy will be mailed to the patent owner and any third party requester.

cc: Third Party Requester(if any)
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

/jawhitfield/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

MERCEDES
EXHIBIT 1012-315

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
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www.uspto.gov

REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/013,252	05/22/2014	5954781

CONFIRMATION NO. 9999

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

REEXAMINATION REQUEST NOTICE

OC000000068636830

Date Mailed: 05/23/2014

NOTICE OF REEXAMINATION REQUEST FILING DATE

(Third Party Requester)

Requester is hereby notified that the filing date of the request for reexamination is 05/22/2014, the date that the filing requirements of 37 CFR § 1.510 were received.

A decision on the request for reexamination will be mailed within three months from the filing date of the request for reexamination. (See 37 CFR 1.515(a)).

A copy of the Notice is being sent to the person identified by the requester as the patent owner. Further patent owner correspondence will be the latest attorney or agent of record in the patent file. (See 37 CFR 1.33). Any paper filed should include a reference to the present request for reexamination (by Reexamination Control Number).

cc: Patent Owner
MICHAEL S. BUSH
HAYNES AND BOONE LLP
3100 NATIONSBANK PLAZA
901 MAIN STREET
DALLAS, TX 75202-3789

/jawhitfield/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

Patent Assignment Abstract of Title

Total Assignments: 3

Application #: 08813270 **Filing Dt:** 03/10/1997 **Patent #:** 5954781 **Issue Dt:** 09/21/1999

PCT #: NONE **Publication #:** NONE **Pub Dt:**

Inventors: HARVEY SLEPIAN, LORAN SUTTON

Title: METHOD AND APPARATUS FOR OPTIMIZING VEHICLE OPERATION

Assignment: 1

Reel/Frame:	Received:	Recorded:	Mailed:	Pages:
008435 / 0064	04/14/1997	03/10/1997	05/22/1997	4

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignors: SLEPIAN, HARVEY **Exec Dt:** 03/03/1997

SUTTON, LORAN **Exec Dt:** 03/03/1997

Assignee: TAS DISTRIBUTING CO., INC.
806 W. PIONEER PARKWAY
PEORIA, ILLINOIS 61615

Correspondent: HARRIS, TUCKER & HARDIN, P.C.
MICHAEL S. BUSH
ONE GALLERIA TOWER
13355 NOEL ROAD, SUITE 2100
DALLAS, TX 75240-6604

Assignment: 2

Reel/Frame:	Received:	Recorded:	Mailed:	Pages:
031635 / 0364	11/20/2013	11/20/2013	11/21/2013	5

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: TAS DISTRIBUTING CO., INC **Exec Dt:** 08/20/2013

Assignee: VELOCITY PATENTS LLC
350 N. ST. PAUL STREET
SUITE 2900
DALLAS, TEXAS 75201

Correspondent: RICHARDS PATENT LAW P.C.
233 S. WACKER DR.
84TH FL
CHICAGO, IL 60622

Assignment: 3

Reel/Frame:	Received:	Recorded:	Mailed:	Pages:
031635 / 0376	11/20/2013	11/20/2013	11/21/2013	4

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: VELOCITY PATENTS LLC **Exec Dt:** 11/15/2013

Assignee: VELOCITY PATENT LLC
335 LLOYDEN PARK LANE
ATHERTON, CALIFORNIA 94027

Correspondent: RICHARDS PATENT LAW P.C.
233 S. WACKER DR.
84TH FL
CHICAGO, IL 60606

Search Results as of: 05/23/2014 09:41 AM

PTO/SB/57 (08-13)
Approved for use through 07/31/2015. OMB 0651-0064
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also referred to as FORM PTO-1465)

REQUEST FOR *EX PARTE* REEXAMINATION TRANSMITTAL FORM

Address to:
Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: [ ]

Date: May 22, 2014

1. [✔] This is a request for *ex parte* reexamination pursuant to 37 CFR 1.510 of patent number 5,954,781 issued September 21, 1999. The request is made by:
   [ ] patent owner. [✔] third party requester.
2. [✔] The name and address of the person requesting reexamination is:
   Volkswagen Group of America, Inc.
   2200 Ferdinand Porsche Drive
   Herndon, VA 20171
3. Requester claims [ ] small entity (37 CFR 1.27) or [ ] micro entity status (37 CFR 1.29) -- only a patent owner requester can claim micro entity status.
4. [ ] a. A check in the amount of $_____ is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(1);
   [ ] b. The Director is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(1) to Deposit Account No. _____;
   [ ] c. Payment by credit card. Form PTO-2038 is attached; **or**
   [✔] d. Payment made via EFS-Web.
5. [✔] Any refund should be made by [ ] check or [✔] credit to Deposit Account No. 11-0600. 37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.
6. [✔] A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.510(b)(4).
7. [ ] CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
   [ ] Landscape Table on CD
8. [ ] Nucleotide and/or Amino Acid Sequence Submission
   If applicable, items a. -- c. are required.
   a. [ ] Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. [ ] CD-ROM (2 copies) or CD-R (2 copies); **or**
      ii. [ ] paper
   c. [ ] Statements verifying identity of above copies
9. [✔] A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.
10. [✔] Reexamination of claim(s) 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17-32 is requested.
11. [✔] A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.
12. [✔] An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included.

13. ☑ The attached detailed request includes at least the following items:

a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1).

b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2).

14. ☐ A proposed amendment is included (only where the patent owner is the requester). 37 CFR 1.510(e).

15. ☑ a. It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).

The name and address of the party served and the date of service are:

Michael S. Bush, Haynes & Boone LLP

3100 Nationsbank Plaza, 901 Main Street, Dallas, TX 75202-3789

Date of Service: May 22, 2014; **or**

☐ b. A duplicate copy is enclosed since service on patent owner was not possible. An explanation of the efforts made to serve patent owner **is attached.** See MPEP § 2220.

16. Correspondence Address: Direct all communication about the reexamination to:

☑ The address associated with Customer Number: 26646

OR

☐ Firm or Individual Name

Address

City	State	Zip
Country		
Telephone	Email	

17. ☑ The patent is currently the subject of the following concurrent proceeding(s):

☐ a. Copending reissue Application No.

☐ b. Copending reexamination Control No.

☐ c. Copending Interference No.

☑ d. Copending litigation styled:

Please see attached continuation sheet.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

/Clifford A. Ulrich/ — Authorized Signature

May 22, 2014 — Date

Clifford A. Ulrich — Typed/Printed Name

42194 — Registration No.

☐ For Patent Owner Requester

☑ For Third Party Requester

MERCEDES
EXHIBIT 1012-319

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

CONTINUATION SHEET OF PAGE 2 OF FORM PTO/SB/57

17d. Copending litigation styled:

VELOCITY PATENT LLC v. AUDI OF AMERICA, INC., Case No. 1:13-cv-08418-JBG (N.D. Ill.)

VELOCITY PATENT LLC v. MERCEDES-BENZ USA, LLC, Case No. 1:13-cv-08413-JWD (N.D. Ill.)

VELOCITY PATENT LLC v. BMW OF NORTH AMERICA, LLC, Case No. 1:13-cv-08416-JWD (N.D. Ill.)

VELOCITY PATENT LLC v. CHRYSLER GROUP LLC, Case No. 1:13-cv-08419-JWD (N.D. Ill.)

VELOCITY PATENT LLC v. JAGUAR LAND ROVER NORTH AMERICA, LLC, Case No. 1:13-cv-08421-JWD (N.D. Ill.)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent of	:	Harvey Slepian, et al.
Patent No.	:	5,954,781
Issued	:	Sep. 21, 1999
Title	:	METHOD AND APPARATUS FOR OPTIMIZING VEHICLE OPERATION
Application Serial No.	:	08/813,270
Filed	:	Mar. 10, 1997
Requester	:	Volkswagen Group of America, Inc.

VIA EFS-WEB
Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office via the Office electronic filing system on **May 22, 2014**.
Signature: /Helen Tam/
Helen Tam

REQUEST FOR *EX PARTE* REEXAMINATION
OF U.S. PATENT NO. 5,954,781 PURSUANT TO 37 C.F.R. § 1.510

SIR:

Volkswagen Group of America, Inc. ("Requester" or "VWGoA"), through its undersigned counsel, hereby respectfully requests *ex parte* reexamination of U.S. Patent No. 5,954,781 pursuant to 35 U.S.C. § 302 and the provisions of 37 C.F.R. § 1.510.

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2. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Toyota '599 23

3. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Volkswagen '070 29

4. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Davidian 36

5. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Davidian 44

6. Claims 17–21 and 23 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Davidian 54

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10. Claim 31 is Anticipated Under 35 U.S.C. § 102(b) by Davidian 78

11. Claims 31 and 32 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Tonkin and Doi et al. 80

12. Claims 2, 4, and 5 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Chasteen 84

13. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Chasteen 88

14. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Chasteen 93

15. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin 98

16. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin 101

17. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin 103

18. Claims 24 and 25 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian and Chasteen 105

19. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian and Chasteen 109

20. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian and Chasteen 114

21. Claim 32 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Davidian and Tonkin 119

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XII. CONCLUSION 124

EXHIBITS

Exhibit 1	U.S. Patent No. 5,954,781, entitled "Method and Apparatus for Optimizing Vehicle Operation," issued Sept. 21, 1999, to Harvey Slepian, et al.
Exhibit 2	"First Amended Complaint for Patent Infringement" filed on January 30, 2014 in *VELOCITY PATENT LLC v. AUDI OF AMERICA, INC.*, Case No. 1:13-cv-08418-JBG (N.D. Ill.)
Exhibit 3	U.S. Patent No. 4,901,701, issued on February 20, 1990 to Chasteen
Exhibit 4	U.S. Patent No. 4,631,515, issued on December 23, 1986 to Blee et al.
Exhibit 5	U.S. Patent No. 5,708,584, filed on September 8, 1995, issued on January 13, 1998 to Doi et al.
Exhibit 6	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Audi
Exhibit 7	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Mercedes-Benz
Exhibit 8	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Chrysler
Exhibit 9	Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2 to Jaguar Land Rover
Exhibit 10	Listing of Prior Art Patents and Printed Publications that Raise Substantial New Questions of Patentability Affecting the Claims of U.S. Patent No. 5,954,781
Exhibit 11	"Automotive Electronics Handbook," published in 1995, by Ronald Jurgen
Exhibit 12	U.S. Patent No. 5,477,452, issued on December 19, 2995 to Milunas et al.
Exhibit 13	U.S. Patent No. 4,559,599, issued on December 17, 1985 to Habu et al.
Exhibit 14	German Patent Application Publication No. 29 26 070, and its corresponding English Translation, published on January 15, 1981
Exhibit 15	U.S. Patent No. 5,357,438, issued on October 18, 1994 to Davidian
Exhibit 16	U.S. Patent No. 4,061,055, issued on December 6, 1977 to Iizuka et al.
Exhibit 17	U.S. Patent No. 5,121,324, issued on June 9, 1992 to Rini et al.
Exhibit 18	U.S. Patent No. 3,925,753, issued on December 9, 1975 to Auman et al.

Exhibit 19	International Patent Application No. WO 96/02853, published on February 1, 1996 to Tonkin
Exhibit 20	Certificate of Service

I. IDENTIFICATION PURSUANT TO 37 C.F.R. § 1.510(b)(2)

Ex parte reexamination of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17–32 of U.S. Patent No. 5,954,781 ("the '781 patent") is requested.

II. COPY OF '781 PATENT PURSUANT TO 37 C.F.R. § 1.510(b)(4)

Pursuant to 37 C.F.R. § 1.510(b)(4), annexed hereto as Exhibit 1 is a copy of the entire '781 patent including the front face, drawings, specification and claims (in double column format) for which *ex parte* reexamination is requested.

To the best of Requester's knowledge, as of the date of this request, no disclaimer, certificate of correction, or reexamination certificate has been issued in connection with the '781 patent.

III. PROCEEDINGS RELATED TO '781 PATENT

Although Requester is not obligated to inform the Office of proceedings related to the '781 patent, the Office is hereby informed of the following proceedings, which are pending as of the date of this Request, that relate to the '781 patent:

> *VELOCITY PATENT LLC v. AUDI OF AMERICA, INC.*, Case No. 1:13-cv-08418-JBG (N.D. Ill.) – First Amended Complaint Filed on January 30, 2014 ("the *VELOCITY-AUDI* case," copy annexed hereto as Exhibit 2) naming as defendants Audi of America, Inc. and Audi of America, LLC. Audi of America, Inc. is a d/b/a of Volkswagen Group of America, Inc., which is a wholly owned subsidiary of Volkswagen AG, a publicly-held German corporation.
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> *VELOCITY PATENT LLC v. MERCEDES-BENZ USA, LLC, et al.*, Case No. 1:13-cv-08413-JWD (N.D. Ill.) – Complaint Filed on November 21, 2013 ("the *VELOCITY-MERCEDES-BENZ* case").
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> *VELOCITY PATENT LLC v. BMW OF NORTH AMERICA, LLC, et al.*, Case No. 1:13-cv-08416-JWD (N.D. Ill.) – Complaint Filed on November 21, 2013 ("the *VELOCITY-BMW* case").
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> *VELOCITY PATENT LLC v. CHRYSLER GROUP LLC,* Case No. 1:13-cv-08419-JWD (N.D. Ill.) – Complaint Filed on November 21, 2013 ("the *VELOCITY-CHRYSLER* case").
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> *VELOCITY PATENT LLC v. JAGUAR LAND ROVER NORTH AMERICA, LLC,* Case No. 1:13-cv-08421-JWD (N.D. Ill.) – Complaint Filed on November 21, 2013 ("the *VELOCITY-JAGUAR* case".)

IV. THE '781 PATENT AND ITS PROSECUTION

A. The '781 Patent

The '781 patent is titled "Method and Apparatus for Optimizing Vehicle Operation" and was issued on September 21, 1999 from U.S. Application Serial No. 08/873,270 ("the '270 application"), filed on March 10, 1997.

The '781 patent is generally related to an "[a]pparatus for optimizing operation of an engine-driven vehicle." Abstract. In describing the background and prior art, the '781 patent states that "[i]t has long been recognized that the improper operation of a vehicle may have many adverse effects." Col. 1, lines 12–13. For example, according to the '781 patent, "the fuel efficiency of a vehicle may vary dramatically based upon how the vehicle is operated." Col. 1, lines 13–15. The '781 patent refers specifically to, for example, operating a vehicle at excessive speeds, excessive RPMs, and excessive manifold pressures as leading to reduced fuel economy and increased operating costs. Col. 1, lines 15–18. The increased operating costs may be considerable, especially for the owner or operator of a fleet of vehicles. Against this background, the '781 patent describes a processor subsystem to determine when to issue notifications as to recommended changes in vehicle operation that, when executed by the driver, will optimize vehicle operation.

According to the specification, the system "both notifies the driver of recommended corrections in vehicle operation and, under certain conditions, automatically initiates selected corrective action." Col. 1, lines 7–10. The '781 patent states that "it would be desirable to provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will enhance the efficient operation thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66–col. 2, line 6.

The '781 patent describes three types of circuits for issuing notifications that indicate operating inefficiencies: a shift notification circuit; a fuel overinjection notification circuit; and a vehicle proximity alarm circuit. The shift notification circuit issues a notification that the engine of the vehicle is being operated at an excessive speed, i.e., the shift notification circuit operates as an upshift notification circuit, and/or issues a notification that the engine of the vehicle is being operated at an insufficient speed, i.e., the shift notification circuit operates as a downshift notification circuit. The fuel overinjection notification circuit issues a notification that excessive fuel is being supplied to the engine of the vehicle, and the vehicle proximity alarm circuit issues an alarm when the vehicle is too close to an object.

According to the '781 patent, a series of sensors, including a road speed sensor 18, an RPM sensor 20, a manifold pressure sensor 22, a throttle sensor 24, a windshield wiper sensor 30, and a brake sensor 32, are coupled to a processor subsystem 12 and are periodically polled by the processor subsystem to determine their respective states or levels. Col. 5, line 65–col. 6, line 4. The system 10 includes a memory subsystem 14, which is used to hold information to be utilized by the processor subsystem 12 to determine whether to take corrective actions and/or issue notifications. Col. 6, lines 43–46. Figure 1 of the '781 patent is reproduced below:

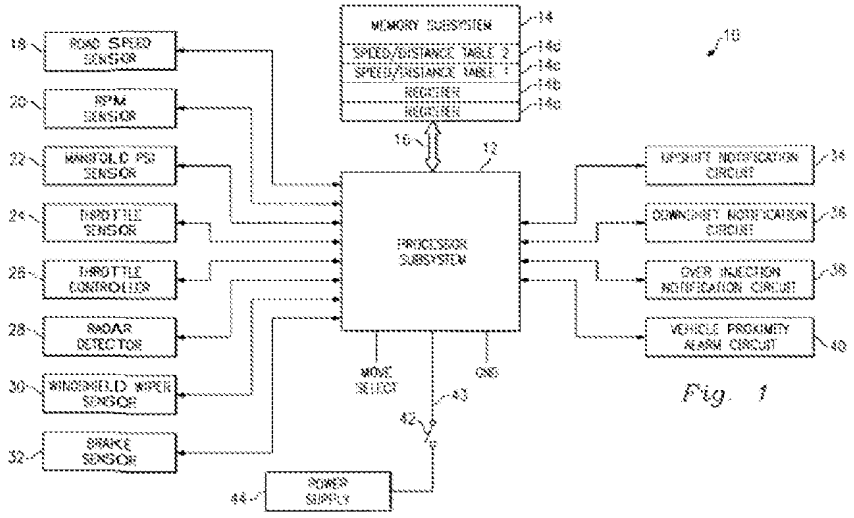

Fig. 1

For example, the processor subsystem 12 determines that the vehicle is being operated unsafely if the speed of the vehicle is such that the stopping distance for the vehicle is greater than the distance separating the vehicle from an object, e.g., a second vehicle, in its path. Col. 9, lines 4–8. As another example, the processor subsystem 12 will notify the driver that, in order to optimize vehicle operation, the amount of fuel being supplied to the engine should be reduced if the processor subsystem 12 determines that too much fuel is being provided to the engine, which is determined based on the vehicle's road speed, throttle position, and manifold pressure. Col. 12, lines 5–14. As a further example, the processor subsystem 12 will issue an audible alert to notify the driver that, in order to optimize vehicle operation, an upshift should be performed, based on the vehicle's engine speed reaching a particular RPM set point. Col. 11, line 45–col. 12, line 4.

Thus, according to the '781 patent, a system is provided for optimizing vehicle operation that combines operator notifications of recommended corrections in vehicle operation with automatic modification of vehicle operation under certain circumstances. Col.

13, lines 36–40. In addition, the driver is advised of certain actions that will enable the vehicle to be operated with greater fuel efficiency. Col. 13, lines 40–44.

B. Prosecution of the '781 Patent

As described in more detail below, during prosecution of the '781 patent, the Examiner concluded that upshift notification circuits, downshift notification circuits, and processors that determine when to activation upshift and downshift notification circuits were not taught by the cited prior art.

Claims 1 to 6 and 17 to 25 were allowed because they were amended to include, for example, an upshift notification circuit and a processor that determines when to activate the upshift notification circuit. Therefore, the questions whether substantial new questions of patentability are raised and whether claims 1 to 6 and 17 to 25 are obvious in view of the prior art are reduced to these limitations relating to the upshift notification circuit.[1]

Claims 7 to 12, 26, and 27 were allowed because they were, in effect,[2] amended to include, for example, a downshift notification circuit and a processor that determines when to activate the downshift notification circuit. Therefore, the questions whether substantial new questions of patentability are raised and whether claims 7 to 12, 26, and 27 are obvious in view of the prior art are reduced to these limitations relating to the downshift notification circuit.

Claims 13 to 16 were allowed based on the fact that they include an upshift notification circuit, a downshift notification circuit, and a processor that determines when to activate the upshift and downshift notification circuits. Therefore, the questions whether substantial new questions of patentability are raised and whether claims 13 to 16 are obvious in view of the prior art are reduced to these limitations relating to the upshift and downshift notification circuits.

Regarding claims 28 to 30, which were added during prosecution, the applicant argued that these claims were allowable over the cited prior art based on the fact that they

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[1] *Graham v. John Deere Co.* 383 U.S. 1 (1966) ("Here, the patentee obtained his patent only by accepting the limitations imposed by the Examiner. The claims were carefully drafted to reflect these limitations and Cook Chemical is not now free to assert a broader view of Scoggin's invention. The subject matter as a whole reduces, then, to the distinguishing features clearly incorporated into the claims. We now turn to those features.").

[2] *See, e.g., Honeywell Int'l v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1144 (Fed. Cir. 2004) ("[Dependent c]laims 4, 8, and 19 were rewritten into independent form, and the original independent claims were cancelled, effectively adding the inlet guide vane limitations [of dependent claims 4, 8 and 19] to the claimed invention.").

claim a fuel overinjection notification circuit and a processor subsystem that determines whether to activate the fuel overinjection notification circuit based on data received from a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Therefore, the questions whether substantial new questions of patentability are raised and whether claims 28 to 30 are obvious in view of the prior art are reduced to these limitations relating to the fuel overinjection notification circuit.

Regarding claims 31 and 32, which were added during prosecution, the applicants argued that these claims were allowable over the prior art based on the fact that they claim a processor subsystem that determines whether to activate a vehicle proximity alarm circuit based on separation distance data received from a radar detector, vehicle speed data received from a road speed sensor, and a vehicle stopping distance table stored in a memory subsystem. Therefore, the questions whether substantial new questions of patentability are raised and whether claims 31 and 32 are obvious in view of the prior art are reduced to these limitations relating to the vehicle proximity alarm circuit.

The '270 application was filed on March 10, 1997 with 32 claims, of which application claims 1, 14, 18, and 27 were the only independent claims. Among these independent claims, application claim 1 included a fuel overinjection circuit, application claim 14 included a fuel overinjection circuit, an upshift notification circuit, and a downshift notification circuit, application claim 18 included a vehicle proximity alarm, and application claim 27 included a fuel overinjection circuit and a vehicle proximity alarm.

In the only Office Action, dated August 6, 1998, application claims 1, 2 and 4 to 6 were rejected as obvious in view of U.S. Patent No. 4,901,701 to Chasteen (copy attached as Exhibit 3), application claim 3 was rejected as obvious in view of the combination of Chasteen and U.S. Patent No. 4,631,515 to Blee et al. (copy attached as Exhibit 4), and application claims 7, 18 to 24, 27, and 28 were rejected as obvious in view of the combination of Chasteen and U.S. Patent No. 5,708,584 to Doi et al. (copy attached as Exhibit 5).

In the Office Action, the Examiner stated that application claims 8 to 13, 25, 26, and 29 to 32 included allowable subject matter. Specifically, the Examiner stated that application claims 8, 25, and 29 included allowable subject matter on the basis that "the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit." Similarly, the Examiner stated that application claims 11, 26, and 31 included

allowable subject matter on the basis that "the prior art fails to disclose a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit." In addition, application claims 14 to 17, which included both an upshift notification circuit and a downshift notification circuit, were allowed on the basis that:

> the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit.

In response to this Office Action, the applicant submitted an Amendment on February 8, 1999. Application claim 1 was amended as follows, to add the limitations of claims 4 and 8, including the upshift notification circuit of claim 8:

> 1. Apparatus for optimizing operation of a vehicle, comprising:
>
> a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;
>
> a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;
>
> a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point and present and prior levels for each one of said plurality of sensors;
>
> a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;
>
> an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification

that said engine of said vehicle is being operated at an excessive speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.

Dependent application claim 11, which included a downshift notification circuit, was rewritten into independent form as follows:

11. Apparatus for optimizing operation of a vehicle, [according to claim 4 and further] comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed; and

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit.

Application claim 18 was amended as follows, to add the limitations of dependent claims 23 to 25, including the upshift notification circuit of claim 25:

18. Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor, a manifold pressure sensor, a throttle position sensor and an engine speed sensor;

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed stopping distance table, a manifold pressure set point, an RPM set point, a [and] present level[s] for each one of said at least one sensor and a prior level for each one of said at least one sensor;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

a fuel overinjection circuit coupled to said processor subsystem, said fuel overinjection circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit, when to activate said fuel overinjection circuit, and when to activate said upshift notification circuit.

Application claim 27 was amended as follows, to add the limitations of dependent claim 29, including the upshift notification circuit of claim 29:

27. Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation

of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.

Dependent application claim 31, which included a downshift notification circuit, was rewritten into independent form as follows:

31. Apparatus for optimizing operation of a vehicle, [according to claim 27 and further] comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, and engine speed

sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to said radar detector and each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a first vehicle speed/stopping distance table, a manifold pressure set point, RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

a downshift notification circuit coupled to said processor subsystem, said downshift notification circuit issuing a notification that said engine of said vehicle is being operated at an insufficient engine speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said downshift notification circuit;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining, based upon data received from said radar detector, said at least one sensor and said memory subsystem, when to activate said vehicle proximity alarm circuit.

In addition to the foregoing claim amendments, the applicants added new application claims 33 to 38, which are discussed in further detail below.

Regarding the claim amendments, the applicant did not present any substantive arguments against the rejection of claims 1–2, 5, 6, 18 to 24, 27, and 28. Rather, the applicant acknowledged that the claims were merely reformulated to place into allowable form the claims that were indicated to include allowable subject matter.

Regarding the newly presented claims, application claims 34 and 37 were the only independent claims, and these claims as presented in the February 8, 1999 Amendment are reproduced below:

34. Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor.

37. Apparatus for optimizing operation of a vehicle, comprising:

a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle;

at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor;

a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table;

a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object;

said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem.

In the accompanying Remarks, the applicant asserted that application claim 34 is patentable over the prior art by stating:

> With respect to Chasteen, the Applicants first note the [sic] Chasteen discloses a system where, in response to certain detected conditions, a CPU issues control commands which modify the operation of an engine. In contrast, Applicants' system merely issues notifications of the determination of a fuel overinjection condition. No corrective action is taken by the system. Applicants' system is superior in that it enables the vehicle to be operated outside of the preferred operating conditions when the vehicle operator deems it necessary. For example, it may be necessary to operate the vehicle in a fuel overinjection mode when performing emergency actions such as rapid accelerations to avoid collisions.
>
> The Applicants further note that, in rejection prior Claim 1 as unpatentable over Chasteen, the Examiner acknowledged that Chasteen "fails to specifically disclose a road speed sensor" and asserted that "it would have been obvious . . . to have a road speed sensor in the system since the speed sensor would help to monitor the operation of the vehicle." Again, the Applicants respectfully disagree. Specifically, as presented in new Claims 34-36, Applicants' claimed apparatus for optimizing operation of a vehicle includes a fuel overinjection notification circuit and a processor subsystem which determines when to activate the fuel overinjection notification circuit. The processor makes that determination based upon data received from specifically recited sensors, <u>including the road speed sensor</u>. Thus, not only does Chasteen fail to teach an apparatus for optimizing vehicle operation which includes a road speed sensor, Chasteen is equally deficient in teaching a processor configured to determine a fuel overinjection condition by analyzing, in combination, road speed, throttle position and manifold pressure level. As Chasteen lacks both a specific sensor and a processor configured to determine a fuel overinjection condition from data collected from that specific sensor in combination with other sensors, the Applicants respectfully submit that Chasteen cannot teach or suggest the apparatus defined by new Claims 34-36.

February 8, 1999 Amendment, at 10–11 (emphasis in original).

In other words, according to the applicant, application claim 34 is allowable because the prior art does not disclose a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor.

Additionally, the applicant asserted that application claim 37 is patentable over the prior art by stating:

> The Applicants respectfully submit that new Claims 37-38, as presented herein, are neither taught nor suggested by the proposed combination of Chasteen and Doi et al. The Examiner properly cited Doi et al. as disclosing a vehicle running mode detection system equipped with a radar detector and an alarm circuit. The Applicants respectfully note, however, that the system disclosed in Doi et al. determines alert conditions relative to the proximity between a vehicle and a forward object based upon changes in the distance separating the vehicle and the forward object. In contrast, Applicants' apparatus for optimizing vehicle operation set forth in Claim 37 includes a processor subsystem configured to activate a vehicle proximity alarm circuit based upon road speed (as determined by a road speed sensor), separation (as determined by a radar detector) and a vehicle speed/stopping distance table stored in a memory subsystem.

Id. at 11–12.

In other words, according to the applicant, application claim 37 is allowable because the prior art does not disclose a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem. The applicant did acknowledge, however, that a vehicle proximity alarm that is activated based on separation is disclosed in the prior art: "The Applicants respectfully note, however, that the system disclosed in Doi et al. determines alert conditions relative to the proximity between a vehicle and a forward object based upon changes in the distance separating the vehicle and the forward object."

Thereafter, the Examiner issued a Notice of Allowance, which includes a lengthy statement by the Examiner of the reasons for allowance. Although no specific claims are discussed in the Examiner's statement of reasons for allowance, particular claim language is discussed such the reason that each independent was allowed is apparent.

For example, the Notice of Allowance states that

> The prior art fails to disclose an apparatus for optimizing operation of a vehicle and comprising an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive speed and the processor determines when to activate the upshift notification circuit; and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing

> a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit.

The Notice of Allowance further states that:

> Nor does the prior art discloses [sic] a fuel overinjection notification circuit coupled to the processor subsystem, wherein the fuel overinjection notification circuit issuing a notification that excess fuel is being supplied to the engine of the vehicle and the processor subsystem determining whether to activate the fuel overinjection notification circuit based upon data received from the road speed sensor, the throttle position sensor and the manifold sensor.

Additionally, the Notice of Allowance states:

> Nor does the prior art discloses [sic] that the processor subsystem determines whether to activate the vehicle proximity alarm circuit based upon separation distance data received from the radar detector, vehicle speed/stopping distance table stored in the memory subsystem.

V. PATENT OWNER'S INFRINGEMENT CONTENTIONS IN LITIGATIONS INVOLVING THE '781 PATENT

As stated above, the '781 patent is the subject of related litigations, including the *VELOCITY-AUDI* case, the *VELOCITY-MERCEDES-BENZ* case the *VELOCITY-BMW* case, the *VELOCITY-CHRYSLER* case, and the *VELOCITY-JAGUAR* case. Attached as Exhibits 6 to 9 are copies of "Velocity Patent LLC's Initial Infringement Contentions Pursuant to Local Patent Rule 2.2," served by the Patent Owner in the *VELOCITY-AUDI* case, the *VELOCITY-MERCEDES-BENZ* case, the *VELOCITY-CHRYSLER* case, and the *VELOCITY-JAGUAR* case, respectively. In these Initial Infringement Contentions, the Patent Owner has asserted (1) that cylinder-on-demand systems, fuel economy messages, and speed warning systems, for example, are functionalities that infringe fuel overinjection notification circuits, (2) that efficiency programs, gearshift indicators that show current and recommended gears, dynamic steering systems, transmission overheating indicators, and gear selection levers in automatic transmissions, for example, are functionalities that infringe upshift and downshift notification

circuits; and (3) that adaptive cruise control systems, braking guard systems, and side assist systems, for example, are functionalities that infringe vehicle proximity alarm circuits.[3]

VI. CITATIONS OF PRIOR ART PATENTS AND PRINTED PUBLICATIONS THAT RAISE SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

Substantial new questions of patentability of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 to 32 of the '781 patent are raised by the following prior art patents and printed publications. Annexed hereto as Exhibit 10 is a listing of, *inter alia*, the prior art patents and printed publications that raise substantial questions of patentability. Each of the prior art patent and printed publications cited herein constitutes prior art against the '781 patent under 35 U.S.C. § 102(b).

A. Automotive Electronics Handbook, by Ronald Jurgen ("Jurgen"), published in 1995.

B. U.S. Patent No. 5,477,452 ("Saturn '452"), issued on December 19, 1995.

C. U.S. Patent No. 4,559,599 ("Toyota '599"), issued on December 17, 1985.

D. German Patent Application Publication No. 29 26 070 ("Volkswagen '070"), published on January 15, 1981.

E. U.S. Patent No. 5,357,438 ("Davidian"), issued on October 18, 1994.

F. U.S. Patent No. 4,061,055 ("Nissan '055"), issued on December 6, 1977.

G. U.S. Patent No. 5,121,324 ("Mack '324"), issued on June 9, 1992.

H. U.S. Patent No. 3,925,753 ("GM '753"), issued on December 9, 1975.

I. PCT Publication No. WO 96/02853 ("Tonkin"), published on February 1, 1996.

A copy of every prior art patent and printed publication relied upon or referred to herein is submitted herewith as required by 37 C.F.R. § 1.510(b)(3), as follows:

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[3] Nothing in the present Request should be considered to constitute an agreement, admission, or concession by VWGoA that the claims of the '781 patent cover the systems or vehicles described in the Patent Owner's Initial Infringement Contentions.

A. A copy of Jurgen is annexed hereto as Exhibit 11.

B. A copy of Saturn '452 is annexed hereto as Exhibit 12.

C. A copy of Toyota '599 is annexed hereto as Exhibit 13.

D. A copy of Volkswagen '070 is annexed hereto as Exhibit 14.

E. A copy of Davidian is annexed hereto as Exhibit 15.

F. A copy of Nissan '055 is annexed hereto as Exhibit 16.

G. A copy of Mack '324 is annexed hereto as Exhibit 17.

H. A copy of GM '753 is annexed hereto as Exhibit 18.

I. A copy of Tonkin is annexed hereto as Exhibit 19.

VII. STATEMENTS IDENTIFYING EACH SUBSTANTIAL NEW QUESTION OF PATENTABILITY PURSUANT TO 37 C.F.R. § 1.510(b)(1)

1. Claim 1 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Saturn '452

2. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Toyota '599

3. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Volkswagen '070

4. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Davidian

5. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Davidian

6. Claims 17–21 and 23 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Davidian

7. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Nissan '055

8. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Mack '324

9. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and GM '753

10. Claim 31 is Anticipated Under 35 U.S.C. § 102(b) by Davidian

11. Claims 31 and 32 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Tonkin and Doi et al.

12. Claims 2, 4, and 5 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Chasteen

13. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Chasteen

14. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Chasteen

15. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin

16. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin

17. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin

18. Claims 24 and 25 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian and Chasteen

19. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian and Chasteen

20. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian and Chasteen

21. Claim 32 is Obvious Under 35 U.S.C. § 103(a) in in View of the combination of Davidian and Tonkin

DETAILED EXPLANATIONS PURSUANT TO 37 C.F.R. § 1.510(b)(2)

The following statements are made, pursuant to 37 C.F.R. § 1.510(b)(2), pointing out each substantial new question of patentability based on the prior art patents and printed publications cited above, in accordance with the "broadest reasonable interpretation" standard as set forth in M.P.E.P. § 2258(I)(G).[4]

As set forth in detail below, the foregoing prior art patents and printed publications would have been considered important by a reasonable Examiner in deciding whether to allow claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 to 32 of the '781 patent. Therefore, these prior art patents and printed publications raise substantial new questions of patentability.

[4] "During reexamination, claims are given their broadest reasonable interpretation consistent with the specification and limitations in the specification are not read into the claims."

Pursuant to 37 C.F.R. § 1.510(b)(2), a detailed explanation of the pertinence and manner of applying the cited prior art patents and printed publications to every claim for which reexamination is requested is set forth below with reference to the appended charts.

The following detailed explanation is informed by the prosecution history, as set forth above. To briefly summarize, the Examiner in the original prosecution concluded that the prior art failed to teach or suggest upshift or downshift notification circuits for claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17 to 27. Because the prosecution history focused on the upshift and/or downshift notification circuits, and because the prior art discussed herein discloses these circuits, substantial new questions of patentability affecting claims 1, 7, 13, 17, 23, 26 are raised by the prior art discussed herein.

With respect to claims 28 to 30, the applicant in the original prosecution emphasized that the prior art failed to teach a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Because the prosecution history focused on a fuel overinjection notification circuit activated based on these three sensors, and because the prior art disclosed herein discloses a fuel overinjection notification circuit activated based on these three sensors, substantial new questions of patentability affecting claims 28 to 30 are raised by the prior art discussed herein.

With respect to claims 31 and 32, the applicant in the original prosecution emphasized that the prior art failed to teach a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem. Because the prosecution history focused on a vehicle proximity alarm that is activated based on these three parameters, and because the prior art disclosed herein discloses a vehicle proximity alarm activated based on these three parameters, substantial new questions of patentability affecting claims 31 and 32 are raised by the prior art discussed herein.

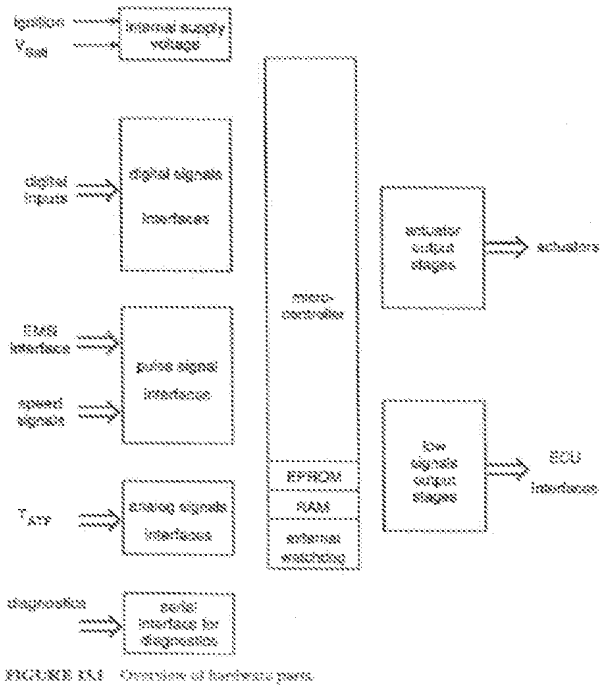
1. Claim 1 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Saturn '452

Claim 1 is obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen and Saturn '452. Neither Jurgen nor Saturn '452 was cited by the Examiner or the applicants during prosecution of the '781 patent. Therefore, the question of whether claim 1 is obvious in view of the combination of Jurgen and Saturn '452 was not previously considered. The combination of Jurgen and Saturn '452 is closer to the subject matter of claim 1 of the '781

patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen and Saturn '452 provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claim 1 was allowable over the prior art cited during prosecution on the basis that the prior art does not teach an upshift notification circuit, wherein the processor determines, based upon data received from sensors, when to activate said upshift notification circuit.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates these hardware parts:



Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a

throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen also discloses that a memory subsystem can be used in connection with the processor subsystem in order to store programs and data. (Page 13.5). It is disclosed that the memory can store data tables including a manifold pressure set point and an RPM set point for use by the system. (Pages 13.5 ("The memory devices for program and data are usually EPROMs"), 12.9 ("The engine load information is provided by the manifold pressure sensor . . . . The engine control unit contains data tables for combinations of load and RPM")). Additionally, present and prior levels of each sensor are stored in the memory for diagnostic use, which preserves sensor outputs for later use. (Pages 14.2, 22.2 to 22.3). Jurgen, therefore, teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors."

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen also teaches that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, teaches "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps,

can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Saturn '452 teaches a "means for indicating to the operator a point in operation for upshifting to the next higher gear." Abstract. The processor subsystem taught by Saturn '452 receives sensor inputs that sense manifold pressure, engine speed, and throttle position. Col. 2, lines 42 to 44; col. 7, lines 13 to 21. Therefore, Saturn '452 teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor," except for the claimed road speed sensor, which is taught by Jurgen.

Figure 1 of Saturn '452 is illustrative:

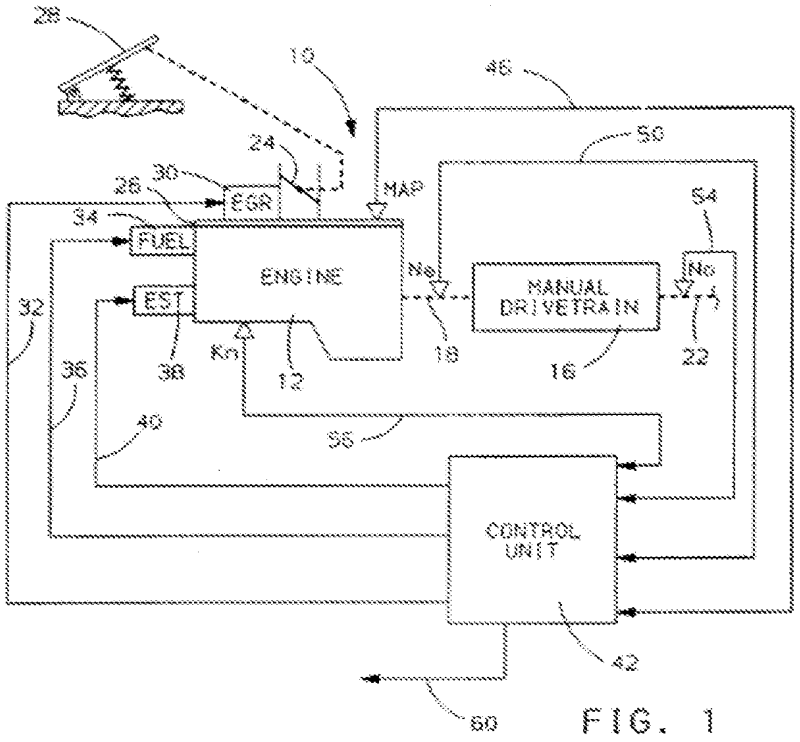


FIG. 1

Figure 1 of Saturn '452 illustrates that the control unit 42 is connected to the sensor inputs, and outputs a signal on line 60 that may drive a lamp "for indicating the state of the upshift indicator light." Col. 2, lines 42 to 55; col. 3, lines 60 to 65. Additionally, Saturn '452 teaches that the control unit includes a memory (col. 2, lines 52 to 55), and that a "predetermined maximum allowable engine speed threshold K1" is used by the system. Col. 6, lines 55 to 60. Therefore, Saturn '452 discloses "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point,

an RPM set point, and present and prior levels for each one of said plurality of sensors," except for the claimed manifold pressure set point and present and prior levels for each one of the sensors, which are taught by Jurgen (*see* Jurgen at 12.9, 13.5).

Saturn '452 teaches an upshift notification circuit connected to the control unit, which indicates "via line 60 the state of an upshift indicator light or equivalent visual display." Col. 2, lines 42 to 55. Therefore, Saturn '452 teaches "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed" and "said processor subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift notification circuit."

A person of ordinary skill in the art, at the time the alleged invention of claim 1 of the '781 patent was made, would have found it obvious to combine the teachings of Jurgen and Saturn '452, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged invention of claim 1 of the '781 patent was made would have been further motivated to combine the teachings of Jurgen and Saturn '452 to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to provide a "means for indicating to the operator a point in operation for upshifting to the next higher gear" (Saturn '452, Abstract), and to provide "an improved method of determining shift points and indicating the same to a vehicle operator in order to maximize real driving fuel economy" (Saturn '452, col. 1, lines 44 to 47). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen and Saturn '452 are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen and the teachings of Saturn '452, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to

> them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen and Saturn '452 teaches the limitations that the Examiner concluded were absent from the prior art cited during prosecution of the '781 patent, *i.e.*, an upshift notification circuit activated by a processor in response to sensor inputs. Accordingly, a substantial new question of patentability affecting claim 1 is raised by the combination of Jurgen and Saturn '452.

As set forth in the appended charts, the combination of Jurgen and Saturn '452 teaches all of the limitations of claim 1 of the '781 patent and therefore renders obvious claim 1 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claim 1 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen and Saturn '452.

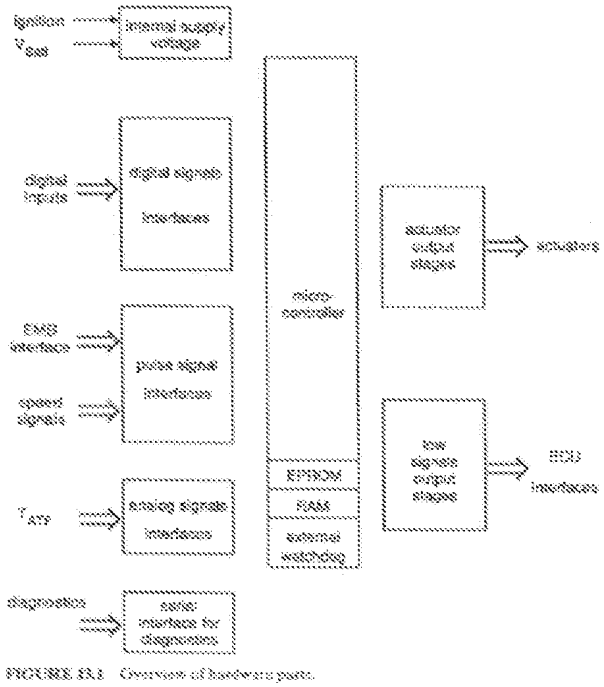
2. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Toyota '599

Claims 1, 7, and 13 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen and Toyota '599. Neither Jurgen nor Toyota '599 was cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 1, 7, and 13 are obvious in view of the combination of Jurgen and Toyota '599 was not previously considered. The combination of Jurgen and Toyota '599 is closer to the subject matter of

claims 1, 7, and 13 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen and Toyota '599 provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 1, 7, and 13 were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrated a diagram of these hardware parts:



Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a

throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen also discloses that a memory subsystem can be used in connection with the processor subsystem in order to store programs and data. (Page 13.5). It is disclosed that the memory can store data tables including a manifold pressure set point and an RPM set point for use by the system. (Pages 13.5 ("The memory devices for program and data are usually EPROMs"), 12.9 ("The engine load information is provided by the manifold pressure sensor . . . . The engine control unit contains data tables for combinations of load and RPM"). Additionally, present and prior levels of each sensor are stored in the memory for diagnostic use, which preserves sensor outputs for later use. (Pages 14.2, 22.2 to 22.3). Jurgen, therefore, teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors."

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

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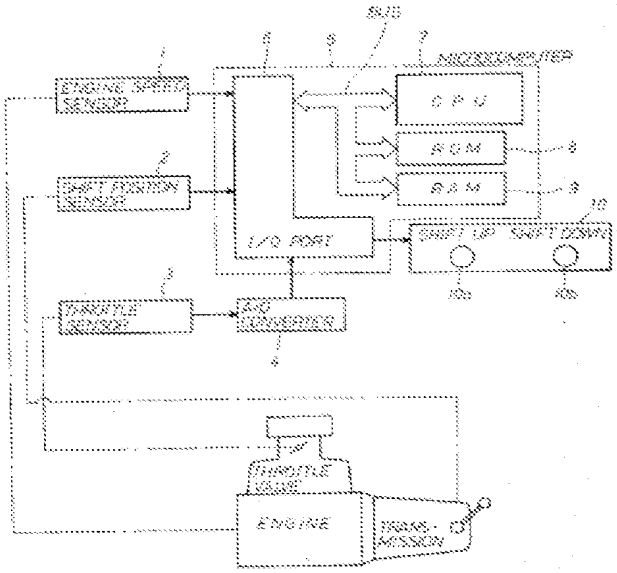
Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which

monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Toyota '599 discloses a "shift indication apparatus" coupled to a plurality of sensors. An overview of this system is illustrated in Figure 1:



The sensor inputs to the microcomputer include an engine speed sensor 1 and a throttle sensor 3, which are both "connected to the input of the I/O port 6 so as to transmit the output pulses to the microcomputer 5." Col. 2, lines 43 to 48; col. 2, lines 52 to 59. Therefore, Toyota '599 teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor," except for the claimed manifold pressure sensor and road speed sensor, which is taught by Jurgen. *See*, *e.g.*, Jurgen, pages 2.5, 2.7, and 7.6. Toyota '599 also teaches "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Additionally, Toyota '599 teaches that a memory can be used to store a torque data map and an RPM set point. Col. 3, lines 7 to 20 and lines 44 to 61. For example, the engine speed "is read from the RAM 9 and it is compared with a predetermined number N (=1000 rpm) to determine whether or not the N_e exceeds the value 1000 at the step 21." Col. 3, lines 44 to 61. The actual RPM exceeding this RPM set point is necessary to begin the main routine. Therefore, Toyota '599 teaches "a memory subsystem, coupled to said processor subsystem" and that said memory subsystem stores an "RPM set point."

Toyota '599 teaches that indicator lamps that tell the driver to shift up or shift down are lit by the microcomputer in order to tell the driver when to shift to improve fuel economy. "Namely, in this step, the speed change operation indicating signal is applied to the indicator or display 10 from the microcomputer 5 through the I/O port 6. As a result, a particular lamp in this case, a shift up indicating lamp in the indicator 10, is illuminated, thus indicating to the drive that the speed change from current shift position to the one step shifting up position SP_{+1} is preferable." Col. 5, line 63 to col. 6, line 2. "However, only when either one of the assumed fuel consumption rates above is better than the current fuel consumption rate B_e, the corresponding shift-up lamp or shift-down lamp in the indicator 10 is illuminated, thus indicating the necessity of the speed change operation." E.g. col. 7, lines 29 to 38. Therefore, Toyota '599 teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" and "said processor subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift[/downshift] notification circuit."

A person of ordinary skill in the art, at the time the alleged inventions of claims 1, 7, and 13 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen and Toyota '599, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 1, 7, and 13 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen and Toyota '599 to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), and to "obtain preferable shift positions relating to optimum fuel consumption rate in accordance with . . . data detected" (Toyota '599, Abstract). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen and Toyota '599 are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen and the teachings of Toyota '599, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
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> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen and Toyota '599 teaches the limitations that the Examiner concluded were absent from the prior art cited during prosecution of the '781 patent, *i.e.*, upshift and downshift notification circuits activated by a processor in response to sensor inputs. Accordingly, a substantial new question of patentability affecting claims 1, 7, and 13 is raised by the combination of Jurgen and Toyota '599.

As set forth in the appended charts, the combination of Jurgen and Toyota '599 teaches all of the limitations of claims 1, 7, and 13 of the '781 patent and therefore renders obvious claims 1, 7, and 13 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 1, 7, and 13 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen and Toyota '599.

3. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Volkswagen '070

Claims 1, 7, and 13 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen and Volkswagen '070. Neither Jurgen nor Volkswagen '070 was cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 1, 7, and 13 are obvious in view of the combination of Jurgen and Volkswagen '070 was not previously considered. The combination of Jurgen and Volkswagen '070 is closer to the subject matter of claims 1, 7, and 13 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen and Volkswagen '070 provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 1, 7, and 13 were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits.

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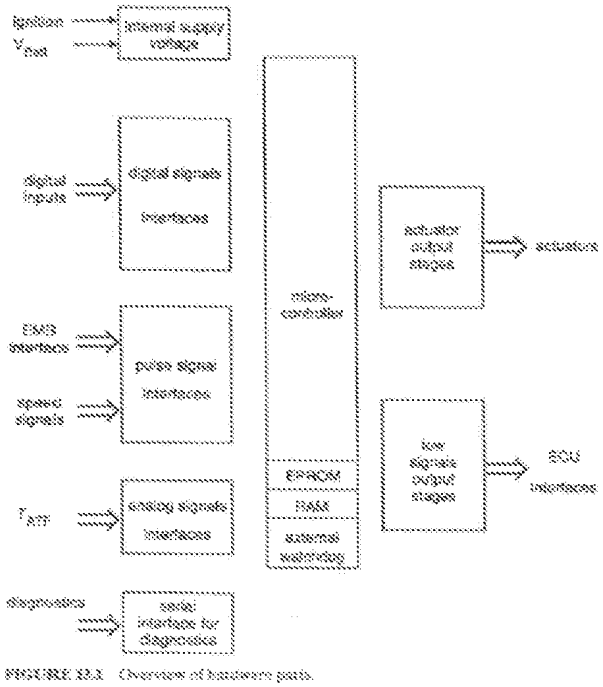


Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen also discloses that a memory subsystem can be used in connection with the processor subsystem in order to store programs and data. (Page 13.5). It is disclosed that the memory can store data tables including a manifold pressure set point and an RPM set point for use by the system. (Pages 13.5 ("The memory devices for program and data are usually EPROMs"), 12.9 ("The engine load information is provided by the manifold pressure sensor . . . . The engine control unit contains data tables for combinations of load and RPM"). Additionally, present and prior levels of each sensor are stored in the memory for diagnostic use, which preserves sensor outputs for later use. (Pages 14.2, 22.2 to 22.3). Jurgen, therefore, teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors."

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a

maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Volkswagen '070 acknowledges that automobile instrument panels that display fuel economy are in the prior art. For example, Volkswagen '070 describes at page 9:

> It is useful in addition to this device, a display of the route-specific fuel consumption is provided in a vehicle. Such display devices are known per se; they generally utilize the ***induction manifold vacuum*** as a measure of the fuel consumption. . . . In this case it us useful to integrate the signal transmitters denoted by 4 and 5 in Figure 2 into the instrument of the fuel consumption display, as sketched in Figure 3. During standard driving operation, pointer 30 of the fuel consumption display sweeps scale 31, while it is hidden behind cover 32 during an idling operation or at full-load accelerations. Incorporated in the scale is arrow 33, which constitutes part of a signal transmitter requesting upshifting, which therefore corresponds to signal transmitter 4 in Figure 2.

(emphasis added)

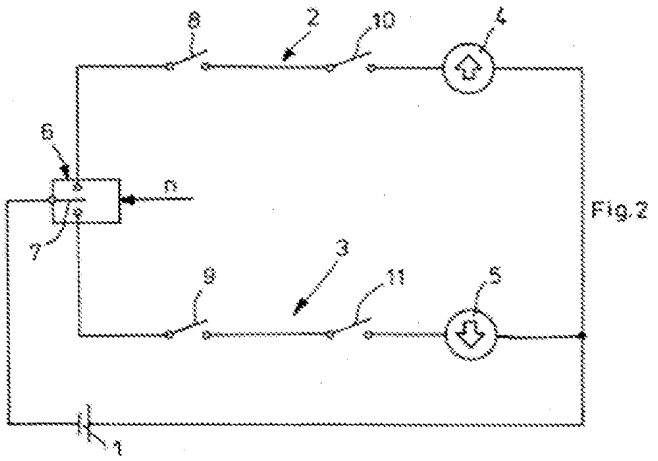
Thus, by describing a fuel consumption display that indicates full-load acceleration, Volkswagen '070 teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen teaches that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps,

can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Volkswagen '070 discloses a device "that assists the operator of [an] internal combustion engine equipped with a conventional transmission." Page 5. The device receives an engine speed signal "with the aid of known sensor systems" and uses it to activate an "engine-speed dependent change-over switch 6." Page 7. Volkswagen '070 describes two operating ranges, I and II, and the change-over switch 6 indicates that an upshift or downshift is necessary when the limits of those ranges (*e.g.*, the RPM set point) is reached. Pages 6–8. For example, Figure 2 of Volkswagen '070 illustrates the change-over switch, which receives the engine speed signal and determines when to activate the upshift and downshift notification lamps 4 and 6:



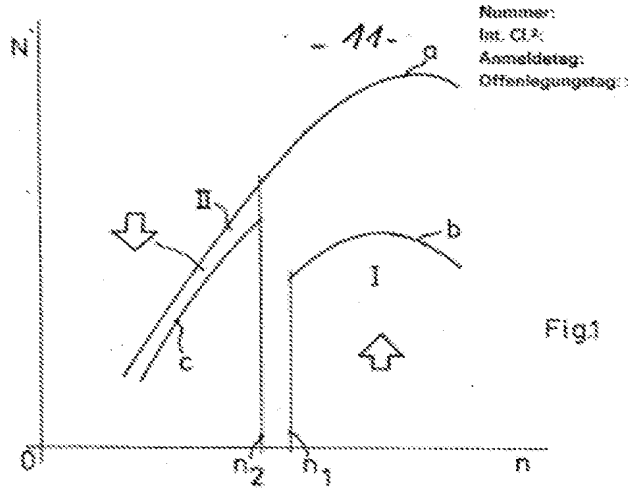
Volkswagen '070 also teaches that engine operating efficiency is based on throttle valve angle, induction manifold vacuum, and engine speed. For example, at page 6, Volkswagen '070 describes:

> As can be seen when viewing Figure 1 to begin with, output N of the engine has been plotted across engine speed n. a is the curve of the output at full load, b is a line that represents a constant setting of the output control element, i.e., a line that represents a constant ***throttle valve angle*** in a carburetor engine. As a measure thereof, in addition to the ***throttle valve angle*** itself, it is also possible to use the ***induction manifold vacuum***. . . . The operating ranges I and II are further delimited by ***engine speed values*** n_1 or n_2, the first of which usually lies between approximately 20 to 50% of the maximum engine speed, and the second usually lies between 40 to 70% of the maximum engine speed.

Volkswagen '070 also describes at page 8 that the "engine speed signal is obtained with the aid of known sensor systems."

Therefore, Volkswagen '070 teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor," except for the claimed road speed sensor, which is taught by Jurgen. *See*, *e.g.*, Jurgen, pages 2.5, 2.7, 7.6, and 12.8. Volkswagen '070 also teaches "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Although Volkswagen '070 does not explicitly refer to the use of memory, it does disclose operating ranges I and II which are bounded by RPM set points, which trigger the shift notifications. For example, Figure 1 discloses these operating ranges, and includes limits N1 and N2 which are engine speeds at which the shifts are indicated (Pages 6–8):



It would have been obvious to one having ordinary skill in the art to use a known memory device, such as the memory devices described by Jurgen at pages 11.24 to 11.31,[5] to store these set points. Therefore, the combination of Jurgen and Volkswagen '070 renders obvious an "RPM set point."

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[5] *See*, *e.g.*, pages 11.25 ("On-chip microcontroller memory consists of some mix of five basic types: random access memory (RAM), read-only memory (ROM), erasable ROM (EPROM), electrically erasable ROM (EPROM), and flash memory. RAM is typically utilized for run-time variable storage and SFRs. The various types of ROM are generally used for code storage and fixed data tables.") and 11.29 ("Off-chip memory offers the most flexibility to the system designer. . . . Off-chip memory is flexible because the user can implement various memory devices in the configuration of his choice. Most microcontrollers on the market today offer a wide variety of control pins and timing modes to allow the system designer flexibility when interfacing to a wide range of external memory systems.").

Volkswagen '070 also teaches both upshift and downshift notification circuits, as upward and downward pointing arrows. When the engine is being operated at an excessive speed, an upshift notification circuit is activated. When the engine is being operated at an insufficient speed, the downshift notification circuit is activated. "Looking initially at operating range I remote from full load, ***the desired output at a lower specific fuel consumption is able to be achieved after upshifting into the next higher gear,*** at an operating point that lies to the left of operating range I in the diagram of Figure 1. ***Accordingly, the device of the present invention generates a signal that asks the operator, i.e., normally the driver, to shift to a higher gear, which is indicated in Figure 1 by the upward pointing arrow within operating range I.***" Pages 6–7; "When the operating point lies in operating range II, ***the device according to the present invention generates a signal that asks the driver to downshift, which is indicated by the downward pointing arrow at operating range II in Figure 1***." Page 7. Volkswagen '070 also teaches that the change-over switch 6 pivots either upwardly or downwardly based upon the engine speed in order to drive the upshift or downshift indicator lights. Pages 7–8. Therefore, Volkswagen '070 teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" and "said processor subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift[/downshift] notification circuit."

A person of ordinary skill in the art, at the time the alleged inventions of claims 1, 7, and 13 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen and Volkswagen '070, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 1, 7, and 13 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen and Volkswagen '070, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), and to "provid[e] a device that assists the operator of the internal combustion engine equipped with a conventional transmission . . . for example, in setting an operating point of

the engine that is advantageous in terms of fuel consumption" (Volkswagen '070, Page 5). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen and Volkswagen '070 are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen and the teachings of Volkswagen '070, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen and Volkswagen '070 teaches the limitations that the Examiner concluded were absent from the prior art cited during prosecution of the '781 patent, *i.e.*, upshift and downshift notification circuits activated by a processor in response to sensor inputs. Accordingly, a substantial new question of patentability affecting claims 1, 7, and 13 is raised by the combination of Jurgen and Volkswagen '070.

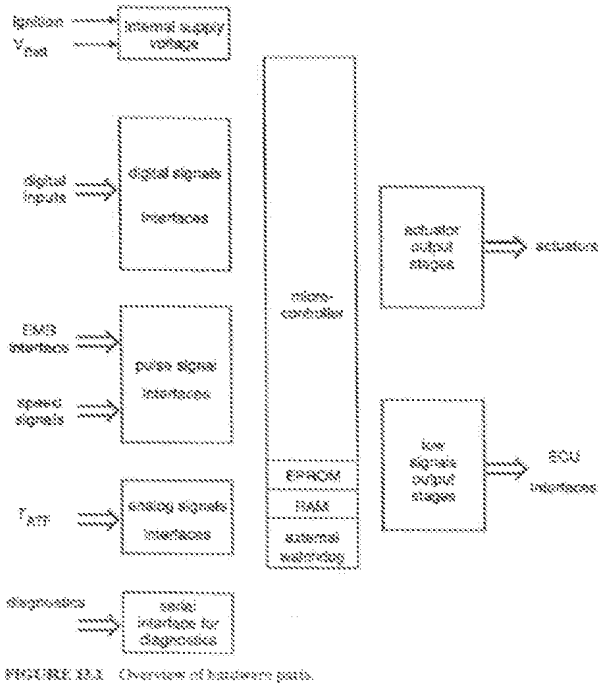
As set forth in the appended charts, the combination of Jurgen and Volkswagen '070 teaches all of the limitations of claims 1, 7, and 13 of the '781 patent and therefore renders obvious claims 1, 7, and 13 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 1, 7, and 13 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen and Volkswagen '070.

4. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Davidian

Claims 17–23 and 26 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Toyota '599, and Davidian. Jurgen, Toyota '599, and Davidian were not cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 17–23 and 26 are obvious in view of the combination of Jurgen, Toyota '599, and Davidian was not previously considered. The combination of Jurgen, Toyota '599, and Davidian is closer to the subject matter of claims 17–23 and 26 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Toyota '599, and Davidian provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner determined that claims 17–23 and 26 were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates a diagram of these hardware parts:



Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen also discloses that a memory subsystem can be used in connection with the processor subsystem in order to store programs and data. (Page 13.5). It is disclosed that the memory can store data tables including a manifold pressure set point and an RPM set point for use by the system. (Pages 13.5 ("The memory devices for program and data are usually EPROMs"), 12.9 ("The engine load information is provided by the manifold pressure sensor . . . . The engine control unit contains data tables for combinations of load and RPM"). Additionally, present and prior levels of each sensor are stored in the memory for diagnostic use, which preserves sensor outputs for later use. (Pages 14.2, 22.2 to 22.3). Jurgen, therefore, teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors."

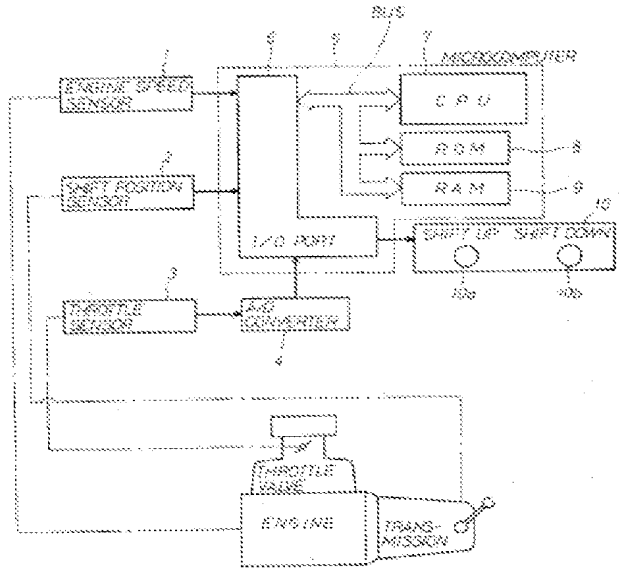
Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a

maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen also teaches that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Toyota '599 discloses a "shift indication apparatus" coupled to a plurality of sensors. An overview of this system is illustrated in Figure 1:



The sensor inputs to the microcomputer include an engine speed sensor 1 and a throttle sensor 3, which are both "connected to the input of the I/O port 6 so as to transmit the output pulses to the microcomputer 5." Col. 2, lines 43 to 48; col. 2, lines 52 to 59. Therefore, Toyota '599 discloses "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor," except for the claimed manifold pressure sensor and road speed sensor, which is taught by Jurgen. *See*, *e.g.*, Jurgen, pages 2.5, 2.7, and 7.6. Toyota '599 also teaches "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Additionally, Toyota '599 teaches that a memory can be used to store a torque data map and an RPM set point. Col. 3, lines 7 to 20 and lines 44 to 61. For example, the engine speed "is read from the RAM 9 and it is compared with a predetermined number N (=1000 rpm) to determine whether or not the N_e exceeds the value 1000 at the step 21." Col. 3, lines 44 to 61. The actual RPM exceeding this RPM set point is necessary to begin the main routine. Therefore, Toyota '599 teaches "a memory subsystem, coupled to said processor subsystem" and that said memory subsystem stores an "RPM set point."

Toyota '599 teaches that indicator lamps that tell the driver to shift up or shift down are lit by the microcomputer in order to tell the driver when to shift to improve fuel economy. "Namely, in this step, the speed change operation indicating signal is applied to the indicator or display 10 from the microcomputer 5 through the I/O port 6. As a result, a particular lamp in this case, a shift up indicating lamp in the indicator 10, is illuminated, thus indicating to the drive that the speed change from current shift position to the one step shifting up position SP_{+1} is preferable." Col. 5, line 63 to col. 6, line 2. "However, only when either one of the assumed fuel consumption rates above is better than the current fuel consumption rate B_e, the corresponding shift-up lamp or shift-down lamp in the indicator 10 is illuminated, thus indicating the necessity of the speed change operation." E.g. col. 7, lines 29 to 38. Therefore, Toyota '599 teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" and "said processor subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift[/downshift] notification circuit."

Davidian discloses an anti-collision system that includes "a front space sensor 8 for sensing the space in front of the vehicle, such as the presence of another vehicle." Col. 4,

lines 52 to 66. This front space sensor includes "a transmitter 106 and a receiver 108 for transmitting and receiving the pulses (e.g., RF, ultrasound, laser, IR, etc.) in the front space sensor 8 . . . for measuring the distance of the vehicle from objects in front of . . . the vehicle." Col. 10, lines 17 to 26. The front space sensor in Davidian continuously transmits pulses (including, in one example, RF pulses) and measures "the round-trip time from the pulse transmission to the echo reception in order to determine the distance of the vehicle from the object." Col. 10, lines 38 to 50. Therefore, Davidian teaches "a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle."

Davidian also teaches a processor subsystem, disclosed as microcomputer 4, which is illustrated in FIGS. 6a and 6b. It is coupled to the radar detector (front vehicle space sensor 8) and the vehicle speed sensor 12:

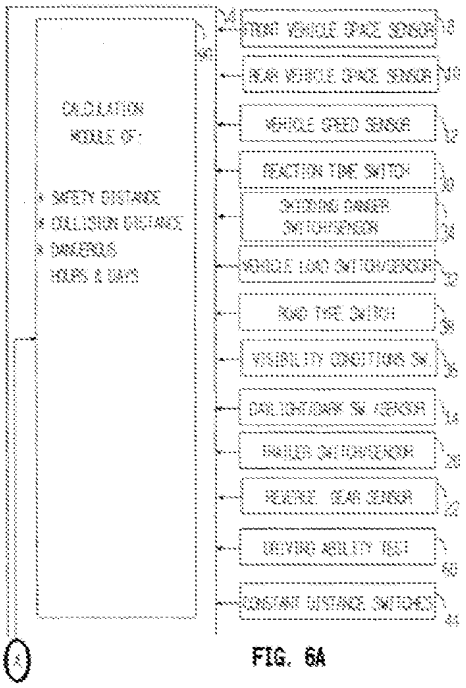


FIG. 6A

"The microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: a calculation module 90, which receives data concerning the various parameters briefly described above." Col. 8, lines 29 to 43. Therefore, Davidian teaches "a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom."

Davidian teaches a memory subsystem that stores a vehicle speed/stopping distance table. "***Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table,*** for example,

provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is ***stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.***" Col. 9, lines 20 to 27. This memory subsystem is a part of the microcomputer 4, as illustrated in FIG. 6A. Davidian also teaches the storing of present and prior levels of each sensor in memory. For example, Davidian's "Black Box Module" 94 stores the "time, ***speed***, and ***relative distance*** between the vehicle and object" each time a collision alarm is activated. Col. 15, lines 22 to 26. Therefore, Davidian teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table" and the memory subsystem storing "a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor."

Davidian teaches a vehicle proximity alarm circuit, which activates a collision alarm when a calculated "Collision Distance" is close to a calculated "Stopping Distance." "A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then actuated." Col. 12, line 59 to col. 13, line 11. The collision alarm, may be an audio alarm or a visual alarm. Col. 9, lines 52 to 56. The determination whether to activate the collision alarm is made by the calculation module 90, which is part of the microcomputer 4. *See* col. 12, line 27 ("Operation of the Calculation Module 90"). Therefore, Davidian teaches "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object."

Davidian also teaches that the processor subsystem determines when to activate the proximity alarm. The radar input, the vehicle speed input, and the vehicle speed/stopping distance tables are all located in the calculation module 90, which it uses to calculate stopping distance and collision distance. Col. 12, line 59 to col. 13, line 11. Therefore, Davidian teaches "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Davidian also teaches the use of a rain sensor connected to module 90 to detect the presence of rain. Claim 18 requires the use of a windshield wiper sensor in order to detect if rain is present. In rejecting claim 18, the Examiner stated that "Chasteen discloses a plurality

of sensors for controlling the operation of the fuel injection wherein it would have been obvious to use a windshield wiper sensor in order to provide a complete performance operation of the vehicle." August 6, 1998 Office Action, at 5. This rejection was not challenged by the applicant, and the claim was allowed due to the addition of the upshift notification circuit to claim 17. The Examiner's statement that a windshield wiper sensor would be an obvious modification to Chasteen carries equal weight in view of the rain sensor taught in Davidian.

Davidian also teaches that it would be beneficial in certain situations to take automatic control of the vehicle. Col. 2, lines 67 to col. 3, line 2. While Claim 19 requires a throttle controller that selectively reduces the throttle based upon inputs from various sensors, the disclosure in Davidian regarding the automatic application of the brakes achieves the same result — slowing the vehicle down.[6]

Jurgen teaches the use of a brake sensor as claimed in Claim 20. For example, Jurgen teaches that "[p]ressure sensors are used to monitor brake fluid pressure" and that "[b]rake pedal position and brake fluid pressure information are also required for control." Jurgen, pages 7.21 to 22. Therefore, the combination of Jurgen, Toyota '599, and Davidian teaches "at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated."

Davidian also teaches the use of a "black box" to record vehicle events. Claim 21 requires a "means for counting a total number of vehicle proximity alarms determined by said processor subsystem." Davidian teaches the use of four different counters, which are stored in the black box each time a front or rear proximity alarm is activated. Col. 11, lines 60 to 68; col. 14, lines 8 to 12. Davidian does not teach "means for selectively reducing said throttle based upon said total number of vehicle proximity alarms." However, Davidian does teach that automated activation of a brake system is used to slow the vehicle down. Indeed, the Examiner stated that "it has been discussed that Doi et al. disclose an alarm therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to count a total number of alarms associated with the system." August 6, 1998 Office Action, at 6. Davidian teaches counting the number of vehicle proximity alarms, and also teaches the automatic control of a vehicle. Therefore, Davidian renders obvious claim 21.

A person of ordinary skill in the art, at the time the alleged inventions of claims 17–23 and 26 of the '781 patent were made, would have found it obvious to combine the teachings

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[6] Additionally, Jurgen teaches that an electronic throttle controller was known in the art.

of Jurgen, Toyota '599, and Davidian, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 17–23 and 26 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Toyota '599, and Davidian, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "obtain preferable shift positions relating to optimum fuel consumption rate in accordance with . . . data detected" (Toyota '599, Abstract), and to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Toyota '599, and Davidian are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Toyota '599, and Davidian, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
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> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple

substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen, Toyota '599, and Davidian teaches the limitations that the Examiner concluded were as absent from the prior art cited during prosecution of the '781 patent, *i.e.*, upshift and downshift notification circuits activated by a processor in response to sensor inputs. Accordingly, a substantial new question of patentability affecting claims 17–23 and 26 is raised by the combination of Jurgen, Toyota '599, and Davidian.

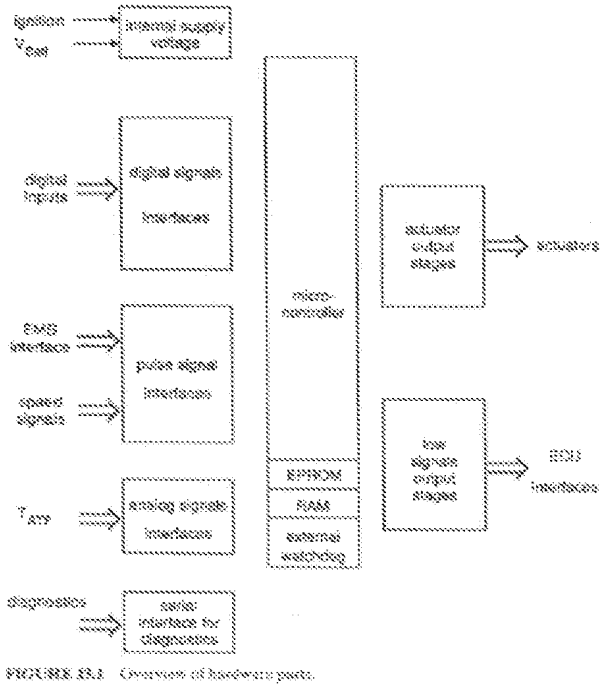
As set forth in the appended charts, the combination of Jurgen, Toyota '599, and Davidian teaches all of the limitations of claims 17–23 and 26 of the '781 patent and therefore renders obvious claims 17–23 and 26 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 17–23 and 26 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Toyota '599, and Davidian.

5. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Davidian

Claims 17–23 and 26 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Volkswagen '070, and Davidian. Jurgen, Volkswagen '070, and Davidian were not cited by the Examiner or the applicants during prosecution of the '781 patent. Therefore, the question of whether claims 17–23 and 26 are obvious in view of the combination of Jurgen, Volkswagen '070, and Davidian was not previously considered. The combination of Jurgen, Volkswagen '070, and Davidian is closer to the subject matter of claims 17–23 and 26 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen, Volkswagen '070, and Davidian provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 17–23 and 26 were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates a diagram of these hardware parts:



Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen also discloses that a memory subsystem can be used in connection with the processor subsystem in order to store programs and data. (Page 13.5). It is disclosed that the memory can store data tables including a manifold pressure set point and an RPM set point for use by the system. (Pages 13.5 ("The memory devices for program and data are usually EPROMs"), 12.9 ("The engine load information is provided by the manifold pressure sensor . . . . The engine control unit contains data tables for combinations of load and RPM"). Additionally, present and prior levels of each sensor are stored in the memory for diagnostic

use, which preserves sensor outputs for later use. (Pages 14.2, 22.2 to 22.3). Jurgen, therefore, teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors."

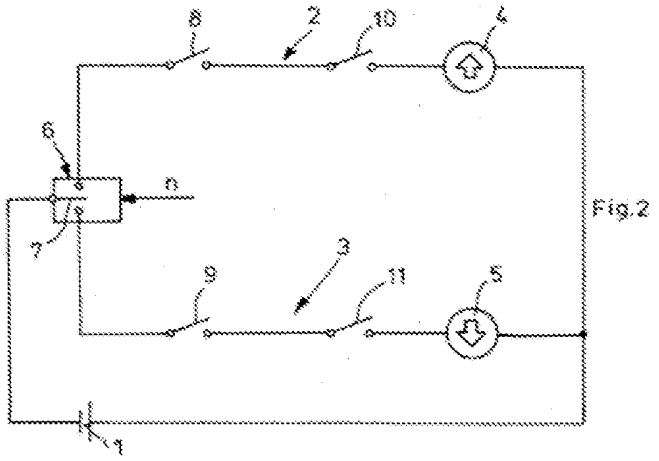
Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen also teaches that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Volkswagen '070 discloses a device "that assists the operator of [an] internal combustion engine equipped with a conventional transmission." Page 5. The device receives an engine speed signal "with the aid of known sensor systems" and uses it to activate an "engine-speed dependent change-over switch 6." Page 7. Volkswagen '070 describes two operating ranges, I and II, and the change-over switch 6 indicates that an upshift or downshift is necessary when the limits of those ranges (*e.g.*, the RPM set point) is reached. Pages 6–8.

For example, Figure 2 of Volkswagen '070 illustrates the change-over switch, which receives the engine speed signal and determines when to activate the upshift and downshift notification lamps 4 and 6:



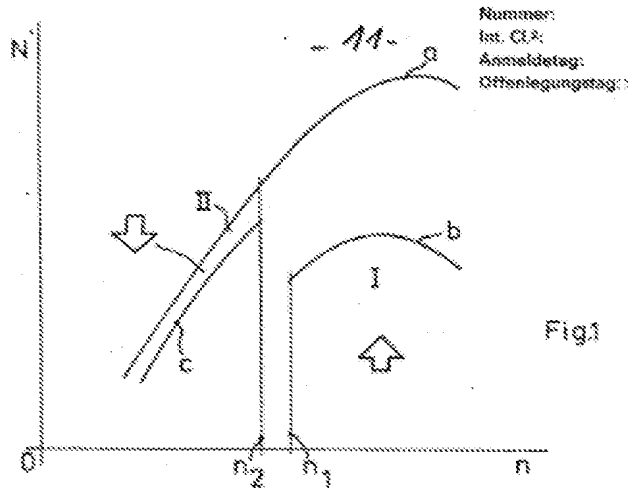
Volkswagen '070 also teaches that engine operating efficiency is based on throttle valve angle, induction manifold vacuum, and engine speed. For example, at page 6, Volkswagen '070 describes:

> As can be seen when viewing Figure 1 to begin with, output N of the engine has been plotted across engine speed n. a is the curve of the output at full load, b is a line that represents a constant setting of the output control element, i.e., a line that represents a constant ***throttle valve angle*** in a carburetor engine. As a measure thereof, in addition to the ***throttle valve angle*** itself, it is also possible to use the ***induction manifold vacuum***. . . . The operating ranges I and II are further delimited by ***engine speed values*** n_1 or n_2, the first of which usually lies between approximately 20 to 50% of the maximum engine speed, and the second usually lies between 40 to 70% of the maximum engine speed.

Volkswagen '070 also describes at page 8 that the "engine speed signal is obtained with the aid of known sensor systems."

Therefore, Volkswagen '070 teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor," except for the claimed road speed sensor, which is taught by Jurgen. *See*, *e.g.*, Jurgen, pages 2.5, 2.7, 7.6, and 12.8. Volkswagen '070 also teaches "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Although Volkswagen '070 does not explicitly refer the use of memory, it does disclose operating ranges I and II which are bounded by RPM set points, which trigger the shift notifications. For example, Figure 1 illustrates these operating ranges, and includes limits N1 and N2 which are engine speeds at which the shifts are indicated (Pages 6–8):



It would have been obvious to one having ordinary skill in the art to use a known memory device, such as the memory devices described by Jurgen at pages 11.24 to 11.31,[7] to store these set points. Therefore, the combination of Jurgen, Volkswagen '070, and Davidian renders obvious an "RPM set point."

Volkswagen '070 also teaches both upshift and downshift notification circuits, as upward and downward pointing arrows. When the engine is being operated at an excessive speed, an upshift notification circuit is activated. When the engine is being operated at an insufficient speed, the downshift notification circuit is activated. "Looking initially at operating range I remote from full load, ***the desired output at a lower specific fuel consumption is able to be achieved after upshifting into the next higher gear,*** at an operating point that lies to the left of operating range I in the diagram of Figure 1. ***Accordingly, the device of the present invention generates a signal that asks the operator, i.e., normally the driver, to shift to a higher gear, which is indicated in Figure 1 by the***

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[7] *See, e.g.*, pages 11.25 ("On-chip microcontroller memory consists of some mix of five basic types: random access memory (RAM), read-only memory (ROM), erasable ROM (EPROM), electrically erasable ROM (EPROM), and flash memory. RAM is typically utilized for run-time variable storage and SFRs. The various types of ROM are generally used for code storage and fixed data tables.") and 11.29 ("Off-chip memory offers the most flexibility to the system designer. . . . Off-chip memory is flexible because the user can implement various memory devices in the configuration of his choice. Most microcontrollers on the market today offer a wide variety of control pins and timing modes to allow the system designer flexibility when interfacing to a wide range of external memory systems.").

upward pointing arrow within operating range I." Pages 6–7; "When the operating point lies in operating range II, ***the device according to the present invention generates a signal that asks the driver to downshift, which is indicated by the downward pointing arrow at operating range II in Figure 1***." Page 7. Volkswagen '070 also teaches that the change-over switch 6 pivots either upwardly or downwardly based upon the engine speed in order to drive the upshift or downshift indicator lights. Pages 7-8. Therefore, Volkswagen '070 teaches "an upshift[/downshift] notification circuit coupled to said processor subsystem, said upshift[/downshift] notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive[/insufficient] speed" and "said processor subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift[/downshift] notification circuit."

Davidian discloses an anti-collision system that includes "a front space sensor 8 for sensing the space in front of the vehicle, such as the presence of another vehicle." Col. 4, lines 52 to 66. This front space sensor includes "a transmitter 106 and a receiver 108 for transmitting and receiving the pulses (e.g., RF, ultrasound, laser, IR, etc.) in the front space sensor 8 . . . for measuring the distance of the vehicle from objects in front of . . . the vehicle." Col. 10, lines 17 to 26. The front space sensor taught by Davidian continuously transmits pulses (including, in one example, RF pulses) and measures "the round-trip time from the pulse transmission to the echo reception in order to determine the distance of the vehicle from the object." Col. 10, lines 38 to 50. Therefore, Davidian teaches "a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle."

Davidian also teaches a processor subsystem, disclosed as microcomputer 4, which is illustrated in FIGS. 6a and 6b. It is coupled to the radar detector (front vehicle space sensor 8) and the vehicle speed sensor 12:

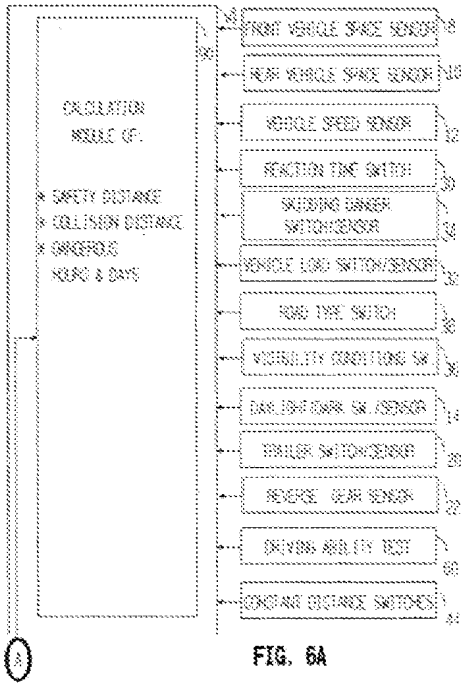


FIG. 6A

"The microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: a calculation module 90, which receives data concerning the various parameters briefly described above." Col. 8, lines 29 to 43. Therefore, Davidian teaches "a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom."

Davidian teaches a memory subsystem that stores a vehicle speed/stopping distance table. "***Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table,*** for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is ***stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.***" Col. 9, lines 20 to 27. This memory subsystem is a part of the microcomputer 4, as illustrated in FIG. 6A. Davidian also teaches the storing of present and prior levels of each sensor in memory. For example, Davidian's "Black Box Module" 94 stores the "time, ***speed***, and ***relative distance*** between the vehicle and object" each time a collision alarm is activated. Col. 15, lines 22 to 26. Therefore, Davidian teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table" and the memory subsystem storing "a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor."

Davidian teaches a vehicle proximity alarm circuit, which activates a collision alarm when a calculated "Collision Distance" is close to a calculated "Stopping Distance." "A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then actuated." Col. 12, line 59 to col. 13, line 11. The collision alarm, may be an audio alarm or a visual alarm. Col. 9, lines 52 to 56. The determination whether to activate the collision alarm is made by the calculation module 90, which is part of the microcomputer 4. *See* col. 12, line 27 ("Operation of the Calculation Module 90"). Therefore, Davidian teaches "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object."

Davidian also teaches that the processor subsystem determines when to activate the proximity alarm. The radar input, the vehicle speed input, and the vehicle speed/stopping distance tables are all located in the calculation module 90, which it uses to calculate stopping distance and collision distance. Col. 12, line 59 to col. 13, line 11. Therefore, Davidian teaches "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Davidian also teaches the use of a rain sensor connected to module 90 to detect the presence of rain. Claim 18 requires the use of a windshield wiper sensor in order to detect if rain is present. In rejecting claim 18, the Examiner stated that "Chasteen discloses a plurality of sensors for controlling the operation of the fuel injection wherein it would have been obvious to use a windshield wiper sensor in order to provide a complete performance operation of the vehicle." August 6, 1998 Office Action, at 5. This rejection was not challenged by the applicant, and the claim was allowed due to the addition of the upshift notification circuit to claim 17. The Examiner's statement that a windshield wiper sensor would be an obvious modification to Chasteen carries equal weight in view of the rain sensor taught in Davidian.

Davidian also teaches that it would be beneficial in certain situations to take automatic control of the vehicle. Col. 2, lines 67 to col. 3, line 2. While Claim 19 requires a throttle controller that selectively reduces the throttle based upon inputs from various sensors,

the disclosure in Davidian regarding the automatic application of the brakes achieves the same result – slowing the vehicle down.[8]

Jurgen teaches the use of a brake sensor as claimed in Claim 20. For example, Jurgen teaches that "[p]ressure sensors are used to monitor brake fluid pressure" and that "[b]rake pedal position and brake fluid pressure information are also required for control." Jurgen, pages 7.21 to 22. Therefore, the combination of Jurgen, Volkswagen '070, and Davidian teaches "at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated."

Davidian also teaches the use of a "black box" to record vehicle events. Claim 21 requires a "means for counting a total number of vehicle proximity alarms determined by said processor subsystem." Davidian teaches the use of four different counters, which are stored in the black box each time a front or rear proximity alarm is activated. Col. 11, lines 60 to 68; col. 14, lines 8 to 12. Davidian does not teach "means for selectively reducing said throttle based upon said total number of vehicle proximity alarms." However, Davidian does teach that automated activation of a brake system is used to slow the vehicle down. Indeed, the Examiner stated that "it has been discussed that Doi et al. disclose an alarm therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to count a total number of alarms associated with the system." August 6, 1998 Office Action, at 6. Davidian teaches counting the number of vehicle proximity alarms, and also teaches the automatic control of a vehicle. Therefore, Davidian renders obvious claim 21.

A person of ordinary skill in the art, at the time the alleged inventions of claims 17–23 and 26 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Volkswagen '070, and Davidian, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 17–23 and 26 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Volkswagen '070, and Davidian, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel

[8] Additionally, Jurgen teaches that an electronic throttle controller was known in the art.

consumption (Jurgen, Page 12.4), to "provid[e] a device that assists the operator of the internal combustion engine equipped with a conventional transmission . . . for example, in setting an operating point of the engine that is advantageous in terms of fuel consumption" (Volkswagen '070, Page 5), and to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Volkswagen '070, and Davidian are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Volkswagen '070, and Davidian, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen, Volkswagen '070, and Davidian teaches the limitations that the Examiner concluded were absent from the prior art cited during

prosecution of the '781 patent, *i.e.*, upshift and downshift notification circuits activated by a processor in response to sensor inputs. Accordingly, a substantial new question of patentability affecting claims 17–23 and 26 is raised by the combination of Jurgen, Volkswagen '070, and Davidian.

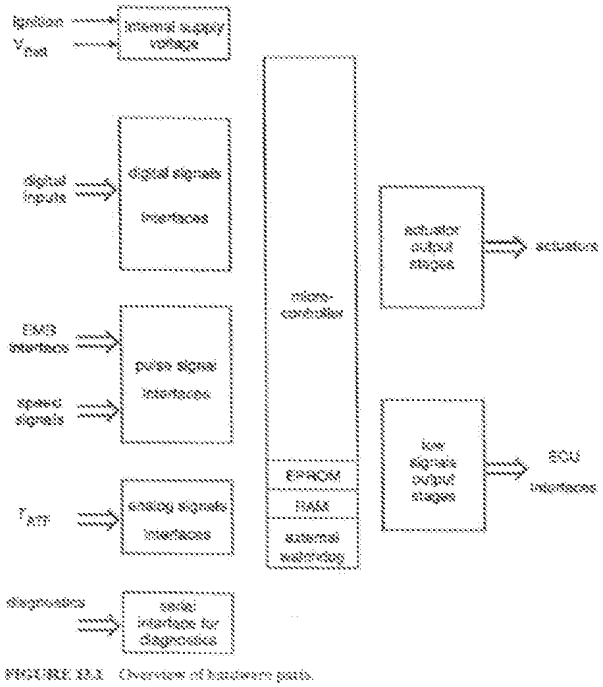
As set forth in the appended charts, the combination of Jurgen, Volkswagen '070, and Davidian teaches all of the limitations of claims 17–23 and 26 of the '781 patent and therefore renders obvious claims 17–23 and 26 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 17–23 and 26 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Volkswagen '070, and Davidian.

6. Claims 17–21 and 23 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Davidian

Claims 17–21 and 23 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Saturn '452, and Davidian. Jurgen, Saturn '452, and Davidian were not cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 17–21 and 23 are obvious in view of the combination of Jurgen, Saturn '452, and Davidian was not previously considered. The combination of Jurgen, Saturn '452, and Davidian is closer to the subject matter of claims 17–21 and 23 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen, Saturn '452, and Davidian provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 17 and 23 were allowable over the prior art cited during prosecution on the basis that the prior art does not teach an upshift notification circuit, wherein the processor determines, based upon data received from sensors, when to activate said upshift notification circuit.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates these hardware parts:



Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen also discloses that a memory subsystem can be used in connection with the processor subsystem in order to store programs and data. (Page 13.5). It is disclosed that the memory can store data tables including a manifold pressure set point and an RPM set point for use by the system. (Pages 13.5 ("The memory devices for program and data are usually EPROMs"), 12.9 ("The engine load information is provided by the manifold pressure sensor . . . . The engine control unit contains data tables for combinations of load and RPM"). Additionally, present and prior levels of each sensor are stored in the memory for diagnostic use, which preserves sensor outputs for later use. (Pages 14.2, 22.2 to 22.3). Jurgen, therefore, teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors."

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a

maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen also teaches that the transmission can be controlled by calculating the necessary shift points based upon throttle position, the accelerator pedal position (e.g., throttle position), and the vehicle speed. (Page 13.9). "The shift point limitations are made, on the one hand, by the highest admissible engine speed for each application." *Id.* The TCU (transmission control unit) stores shift maps that provide notifications to the transmission regarding whether and when to shift. (Page 13.14). Jurgen, therefore, teaches "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Saturn '452 teaches a "means for indicating to the operator a point in operation for upshifting to the next higher gear." Abstract. The processor subsystem taught by Saturn '452 receives sensor inputs that sense manifold pressure, engine speed, and throttle position. Col. 2, lines 42 to 44; col. 7, lines 13 to 21. Therefore, Saturn '452 teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor," except for the claimed road speed sensor, which is taught by Jurgen.

Figure 1 of Saturn '452 is illustrative:

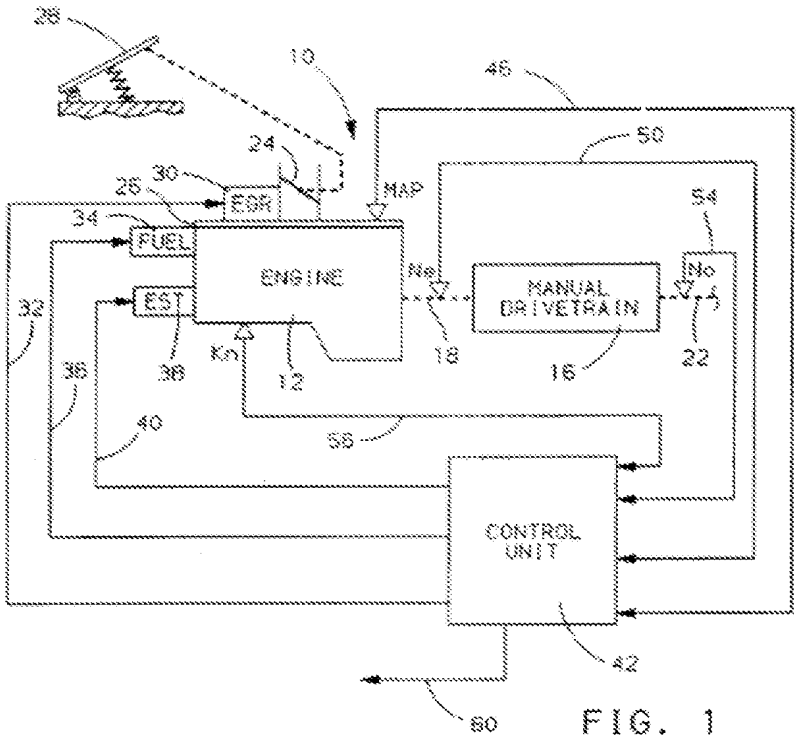


FIG. 1

Figure 1 of Saturn '452 teaches that the control unit 42 is connected to the sensor inputs, and outputs a signal on line 60 that may drive a lamp "for indicating the state of the upshift indicator light." Col. 2, lines 42 to 55; col. 3, lines 60 to 65. Additionally, Saturn '452 teaches that the control unit includes a memory (col. 2, lines 52 to 55), and that a "predetermined maximum allowable engine speed threshold K1" is used by the system. Col. 6, lines 55 to 60. Therefore, Saturn '452 discloses "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors," except for the claimed manifold pressure set point and present and prior levels for each one of the sensors, which are taught in Jurgen (*see* Jurgen at 12.9, 13.5).

Saturn '452 teaches an upshift notification circuit connected to the control unit, which indicates "via line 60 the state of an upshift indicator light or equivalent visual display." Col. 2, lines 42 to 55. Therefore, Saturn '452 teaches "an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed" and "said processor subsystem determining, based upon data received from said plurality of sensors, . . . when to activate said upshift notification circuit."

Davidian discloses an anti-collision system that includes "a front space sensor 8 for sensing the space in front of the vehicle, such as the presence of another vehicle." Col. 4, lines 52 to 66. This front space sensor includes "a transmitter 106 and a receiver 108 for transmitting and receiving the pulses (e.g., RF, ultrasound, laser, IR, etc.) in the front space sensor 8 . . . for measuring the distance of the vehicle from objects in front of . . . the vehicle." Col. 10, lines 17 to 26. The front space sensor in Davidian continuously transmits pulses (including, in one example, RF pulses) and measures "the round-trip time from the pulse transmission to the echo reception in order to determine the distance of the vehicle from the object." Col. 10, lines 38 to 50. Therefore, Davidian teaches "a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle."

Davidian also teaches a processor subsystem, disclosed as microcomputer 4, which is illustrated in FIGS. 6a and 6b. It is coupled to the radar detector (front vehicle space sensor 8) and the vehicle speed sensor 12:

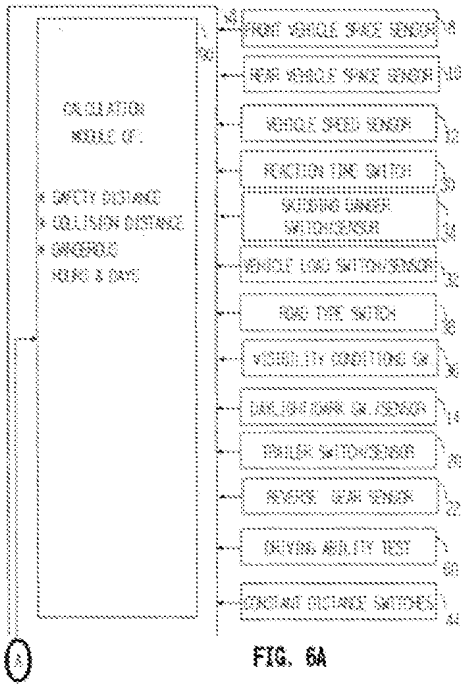


FIG. 6A

"The microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: a calculation module 90, which receives data concerning the various parameters briefly described above." Col. 8, lines 29 to 43. Therefore, Davidian teaches "a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom."

Davidian teaches a memory subsystem that stores a vehicle speed/stopping distance table. "***Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table,*** for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is ***stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.***" Col. 9, lines 20 to 27. This memory subsystem is a part of the microcomputer 4, as illustrated in FIG. 6A. Davidian also teaches the storing of present and prior levels of each sensor in memory. For example, Davidian's "Black Box Module" 94 stores the "time, ***speed***, and ***relative distance*** between the vehicle and object" each time a collision alarm is activated. Col. 15, lines 22 to 26. Therefore, Davidian teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table" and the memory subsystem storing "a present level for each one of said at least one sensor and a prior level for each one of said at least one sensor."

Davidian teaches a vehicle proximity alarm circuit, which activates a collision alarm when a calculated "Collision Distance" is close to a calculated "Stopping Distance." "A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then actuated." Col. 12, line 59 to col. 13, line 11. The collision alarm, may be an audio alarm or a visual alarm. Col. 9, lines 52 to 56. The determination whether to activate the collision alarm is made by the calculation module 90, which is part of the microcomputer 4. *See* col. 12, line 27 ("Operation of the Calculation Module 90"). Therefore, Davidian teaches "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object."

Davidian also teaches that the processor subsystem determines when to activate the proximity alarm. The radar input, the vehicle speed input, and the vehicle speed/stopping distance tables are all located in the calculation module 90, which it uses to calculate stopping distance and collision distance. Col. 12, line 59 to col. 13, line 11. Therefore, Davidian teaches "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Davidian also teaches the use of a rain sensor connected to module 90 to detect the presence of rain. Claim 18 requires the use of a windshield wiper sensor in order to detect if rain is present. In rejecting claim 18, the Examiner stated that "Chasteen discloses a plurality of sensors for controlling the operation of the fuel injection wherein it would have been obvious to use a windshield wiper sensor in order to provide a complete performance operation of the vehicle." August 6, 1998 Office Action, at 5. This rejection was not challenged by the applicant, and the claim was allowed due to the addition of the upshift notification circuit to claim 17. The Examiner's statement that a windshield wiper sensor would be an obvious modification to Chasteen carries equal weight in view of the rain sensor taught in Davidian.

Davidian also teaches that it would be beneficial in certain situations to take automatic control of the vehicle. Col. 2, lines 67 to col. 3, line 2. While Claim 19 requires a throttle controller that selectively reduces the throttle based upon inputs from various sensors, the disclosure in Davidian regarding the automatic application of the brakes achieves the same result – slowing the vehicle down.[9]

Jurgen teaches the use of a brake sensor as claimed in Claim 20. For example, Jurgen teaches that "[p]ressure sensors are used to monitor brake fluid pressure" and that "[b]rake pedal position and brake fluid pressure information are also required for control." Jurgen, pages 7.21 to 22. Therefore, the combination of Jurgen, Saturn '452, and Davidian teaches "at least one sensor further includes a brake sensor for indicating whether a brake system of said vehicle is activated."

Davidian also teaches the use of a "black box" to record vehicle events. Claim 21 requires a "means for counting a total number of vehicle proximity alarms determined by said processor subsystem." Davidian teaches the use of four different counters, which are stored in the black box each time a front or rear proximity alarm is activated. Col. 11, lines 60 to 68; col. 14, lines 8 to 12. Davidian does not teach "means for selectively reducing said throttle based upon said total number of vehicle proximity alarms." However, Davidian does teach that automated activation of a brake system is used to slow the vehicle down. Indeed, the Examiner stated that "it has been discussed that Doi et al. disclose an alarm therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to count a total number of alarms associated with the system." August 6, 1998 Office Action, at

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[9] Additionally, Jurgen teaches that an electronic throttle controller was known in the art.

6. Davidian teaches counting the number of vehicle proximity alarms, and also teaches the automatic control of a vehicle. Therefore, Davidian renders obvious claim 21.

A person of ordinary skill in the art, at the time the alleged inventions of claims 17–21 and 23 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Saturn '452, and Davidian, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 17–21 and 23 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Saturn '452, and Davidian, to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to provide a "means for indicating to the operator a point in operation for upshifting to the next higher gear" (Saturn '452, Abstract), to provide "an improved method of determining shift points and indicating the same to a vehicle operator in order to maximize real driving fuel economy" (Saturn '452, col. 1, lines 44 to 47), and to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Saturn '452, and Davidian are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Saturn '452, and Davidian, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .

> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen, Saturn '452, and Davidian teaches the limitations that the Examiner concluded were absent from the prior art cited during prosecution of the '781 patent, *i.e.*, an upshift notification circuit activated by a processor in response to sensor inputs. Accordingly, a substantial new question of patentability affecting claims 17–21 and 23 is raised by the combination of Jurgen, Saturn '452, and Davidian.

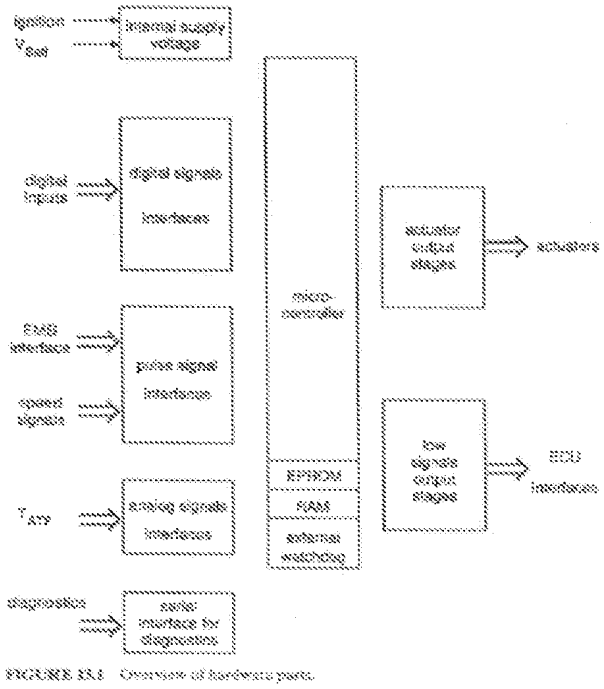
As set forth in the appended charts, the combination of Jurgen, Saturn '452, and Davidian teaches all of the limitations of claims 17–21 and 23 of the '781 patent and therefore renders obvious claims 17–21 and 23 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 17–21 and 23 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Saturn '452, and Davidian.

7. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Nissan '055

Claims 28–30 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen and Nissan '055. Neither Jurgen nor Nissan '055 was cited by the Examiner or the applicants during prosecution of the '781 patent. Therefore, the question of whether claims 28–30 are obvious in view of the combination of Jurgen and Nissan '055 was not previously considered. The combination of Jurgen and Nissan '055 is closer to the subject matter of claims 28–30 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen and Nissan '055 provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the applicants asserted that claim 28 was allowable over the prior art because the prior art does not disclose a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates these hardware parts:



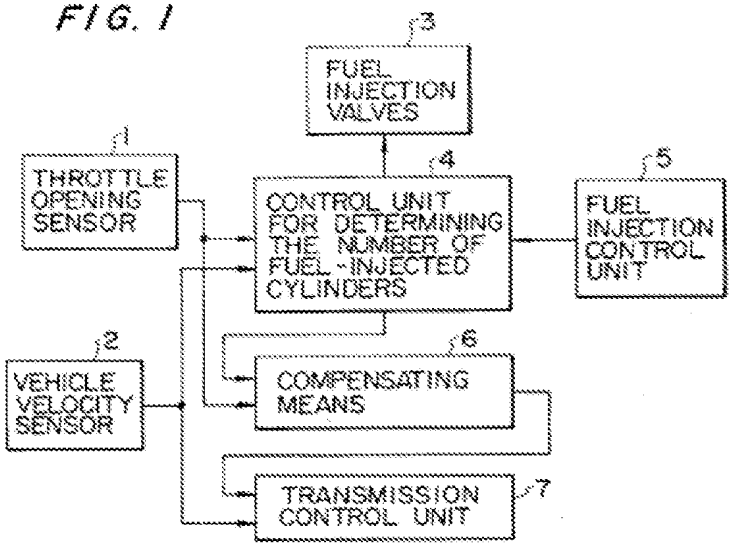
Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU disclosed in Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine

RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Nissan '055 discloses a control system that "controls the number of fuel injected cylinders" in order to increase fuel economy. Abstract. Figure 1 of Nissan '055 discloses that a throttle opening sensor and vehicle velocity sensor are inputs to the system:



Nissan '055 teaches that "when the signal from the vehicle velocity sensor 2 exceeds a predetermined level and at the same time the signal from the throttle opening sensor 1 falls below another predetermined level, the control unit 4 determines the number of cylinders to which fuel is actually injected based on the two signals applied and stops injection of fuel to specified one or more cylinders." Col. 2, lines 59 to 66. Therefore, Nissan '055 teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to

said engine of said vehicle." Although Nissan '055 does not refer to the use of a manifold pressure sensor, manifold pressure sensors are taught by Jurgen. Therefore, the combination of Jurgen and Nissan '055 teaches "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

Claims 29 and 30 require the fuel overinjection notification circuit to be activated when certain conditions measured by the claimed sensors are either increasing or decreasing. For example, claim 29 requires the fuel overinjection notification circuit to be activated when it is determined that (1) road speed is increasing; (2) throttle position is increasing; and (3) the manifold pressure exceeds a manifold pressure set point. In the remarks that were presented with these claims, the Applicant stated as follows:

> Specifically, as presented in new Claims 34-36, Applicants' claimed apparatus for optimizing operation of a vehicle includes a fuel overinjection notification circuit and a processor subsystem which determines when to activate the fuel overinjection notification circuit. The processor makes that determination based upon data received from specifically recited sensors, <u>including the road speed sensor.</u>

February 16, 1999 Amendment, page 11 (emphasis in original).

In allowing these claims, the Examiner stated that the prior art does not disclose that the processor subsystem determines "whether to activate the fuel overinjection notification circuit based upon data received from the road speed sensor, the throttle position sensor and the manifold sensor." April 22, 1999 Notice of Allowability, at 3. The combination of Jurgen and Nissan '055 teaches the use of road speed, throttle position, and manifold pressure sensors, and also teaches that a fuel overinjection notification circuit can be activated based upon input from these sensors. *See* Jurgen, page 12.22; Nissan '055, col. 2, lines 59 to 66.

A person of ordinary skill in the art, at the time the alleged inventions of claims 28–30 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen and Nissan '055, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 28–30 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen and Nissan '055, to "provide optimal

driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), and to "increas[e] fuel economy" (Nissan '055, Abstract). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen and Nissan '055 are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen and Nissan '055, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
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> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen and Nissan '055 teaches the limitations that the applicants asserted were absent from the prior art cited during prosecution of the '781 patent, *i.e.*, a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Accordingly, a substantial new question of patentability affecting claim 28 is raised by the combination of Jurgen and Nissan '055.

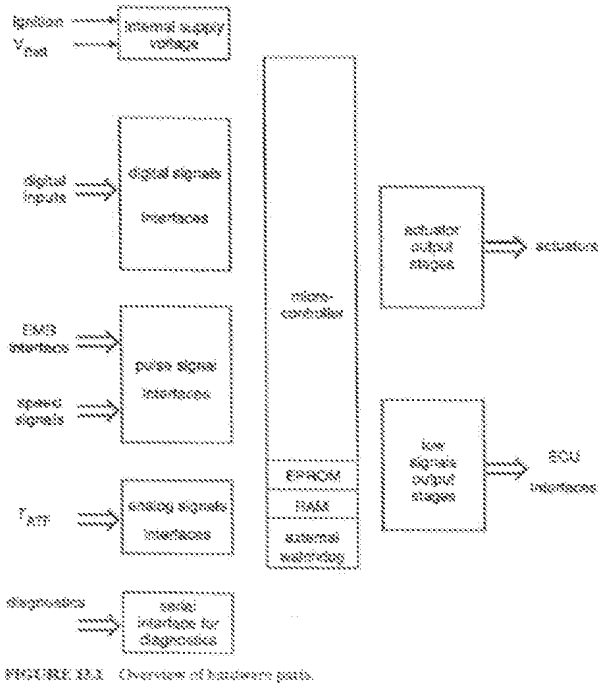
As set forth in the appended charts, the combination of Jurgen and Nissan '055 teaches all of the limitations of claims 28–30 of the '781 patent and therefore renders obvious claims 28–30 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 28–30 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen and Nissan '055.

8. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Mack '324

Claims 28–30 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen and Mack '324. Neither Jurgen nor Mack '324 was cited by the Examiner or the applicants during prosecution of the '781 patent. Therefore, the question of whether claims 28–30 are obvious in view of the combination of Jurgen and Mack '324 was not previously considered. The combination of Jurgen and Mack '324 is closer to the subject matter of claims 28–30 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen and Mack '324 provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Applicant asserted that claim 28 was allowable over the prior art on the basis that the prior art does not disclose a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates these hardware parts:

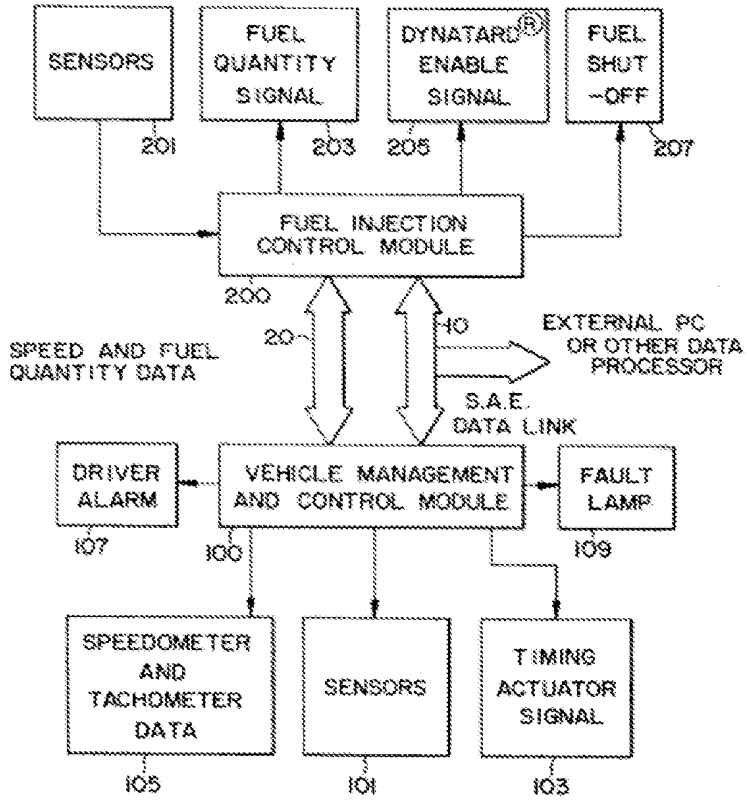


Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

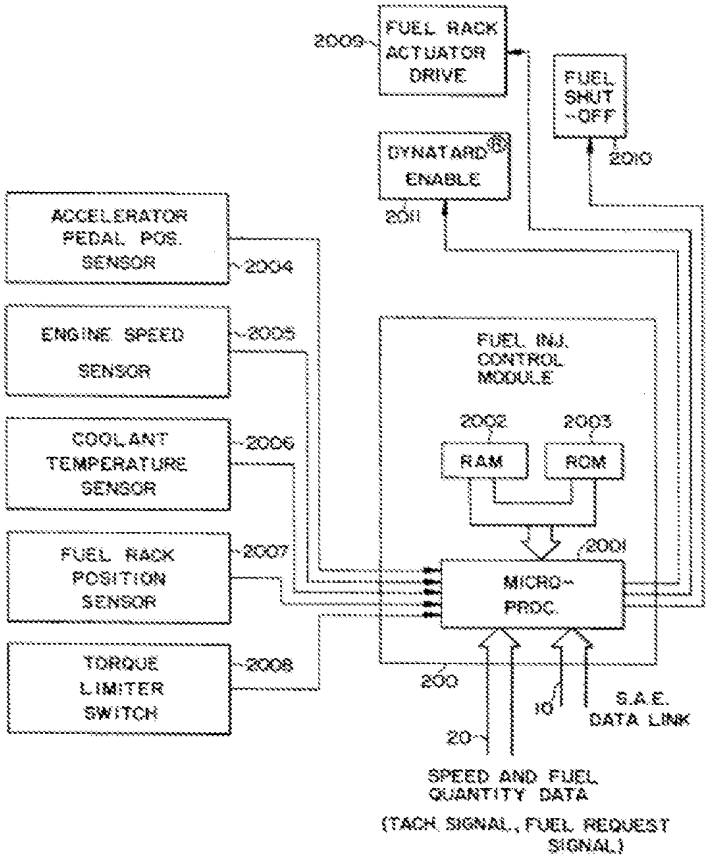
Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

Mack '324 discloses an engine and vehicle management and control system. Abstract. Figure 1 of Mack '324 illustrates an overview of the system:



The fuel injection control module 200 in Mack '324 contains a microprocessor 2001, and receives inputs from sensors 201 and outputs a fuel quantity signal 203 and a fuel shut-off enable signal 207. Col. 2, lines 33 to 27. Figure 3 illustrates the details of the fuel injection control module:



Inputs to the fuel injection control module include sensor inputs from "an accelerator pedal position sensor 2005, an engine speed sensor 2005, a coolant temperature sensor 2006, a fuel rack position sensor 2007, and a torque limiter switch 2008." Col. 3, lines 57 to 61. Mack '324 teaches a fuel overinjection notification signal that stops fuel being injected to the engine when certain overspeed conditions are met. Col. 6, lines 24 to 53. The fuel request signal is sent by the fuel injection control module, to which the sensors are input. Therefore, Mack '324 teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle." Although Mack '324 does not refer to the use of a manifold pressure sensor, manifold pressure sensors are taught by Jurgen. Therefore, the combination of Jurgen and Mack '324 teaches "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

Claims 29 and 30 require the fuel overinjection notification circuit to be activated when certain conditions measured by the claimed sensors are either increasing or decreasing. For example, claim 29 requires the fuel overinjection notification circuit to be activated when

it is determined that (1) road speed is increasing; (2) throttle position is increasing; and (3) the manifold pressure exceeds a manifold pressure set point. In the remarks that were presented with these claims, the Applicant stated as follows:

> Specifically, as presented in new Claims 34-36, Applicants' claimed apparatus for optimizing operation of a vehicle includes a fuel overinjection notification circuit and a processor subsystem which determines when to activate the fuel overinjection notification circuit. The processor makes that determination based upon data received from specifically recited sensors, including the road speed sensor.

February 16, 1999 Amendment, page 11 (emphasis in original).

In allowing these claims, the Examiner stated that the prior art does not disclose that the processor subsystem determines "whether to activate the fuel overinjection notification circuit based upon data received from the road speed sensor, the throttle position sensor and the manifold sensor." April 22, 1999 Notice of Allowability, at 3. The combination of Jurgen and Mack '324 teaches the use of road speed, throttle position, and manifold pressure sensors, and also teaches that a fuel overinjection notification circuit can be activated based upon input from these sensors. *See* Jurgen, page 12.22; Mack '324, col. 6, lines 24 to 53.

A person of ordinary skill in the art, at the time the alleged inventions of claims 28–30 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen and Mack '324, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 28–30 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen and Mack '324, to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), and to provide for "optimization in terms of fuel economy" (Mack '324, col. 1, line 24). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen and Mack '324 are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen and Mack '324, Jurgen describes at page xvii

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
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Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen and Mack '324 teaches the limitations that the applicants asserted were absent from the prior art cited during prosecution of the '781 patent, *i.e.*, a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Accordingly, a substantial new question of patentability affecting claims 28–30 is raised by the combination of Jurgen and Mack '324.

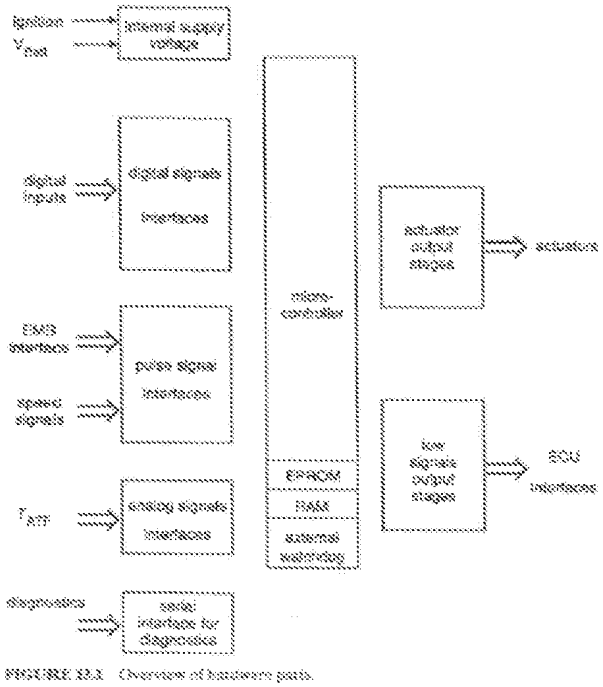
As set forth in the appended charts, the combination of Jurgen and Mack '324 teaches all of the limitations of claims 28–30 of the '781 patent and therefore renders obvious claims 28–30 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 28–30 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen and Mack '324.

9. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and GM '753

Claims 28–30 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen and GM '753. Neither Jurgen nor GM '753 was cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 28–30 are obvious in view of the combination of Jurgen and GM '753 was not previously considered. The combination of Jurgen and GM '753 is closer to the subject matter of claims 28–30 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen and GM '753 provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the applicants asserted that claim 28 was allowable over the prior art on the basis that the prior art does not disclose a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), and throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen illustrates these hardware parts:

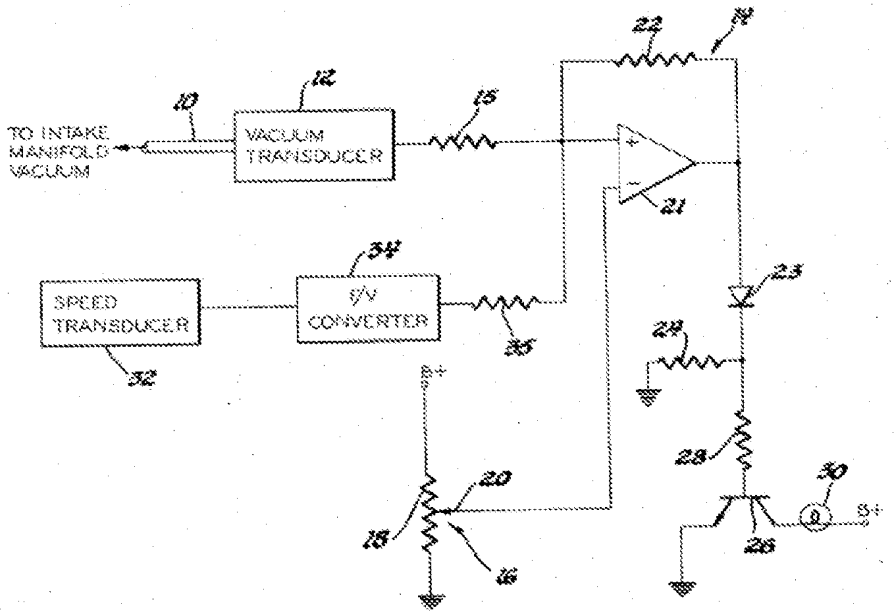


Jurgen, therefore, teaches "a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, a manifold pressure sensor and a throttle position sensor" and "a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom."

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Jurgen, therefore, teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle."

Jurgen teaches "said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift/downshift notification circuit." For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition or shift the engine.

GM '753 discloses "a warning system for providing an indication when the fuel consumption of a throttle controlled vehicle having an internal combustion engine with an intake manifold exceeds pre-established levels." Abstract. Figure 1 of GM '753 provides an overview of the system, which includes a manifold pressure sensor and a vehicle speed sensor:



The vacuum transducer 12 of GM '753 "is effective to generate a voltage having a magnitude which progressively changes with a progressively increased manifold intake level." Col. 1, lines 38 to 55. The speed transducer "generates a series of voltage pulses having a frequency progressively increasing with increasing vehicle speed." Col. 2, lines 34 to 51. These inputs are fed to an analog circuit acting as a processor, which is used to send current to a lamp when a level "determined to represent excessive fuel consumption" is reached. Col. 2, lines 52 to 58. "When the vehicle is operated in a manner such that the manifold vacuum decreases below the manifold vacuum trigger level established at the instantaneous vehicle speed, ***the output of the summing switch 14 swings positive to effect energization of the lamp 30 to provide an indication of fuel consumption in excess of the predetermined amount at that speed***." Col. 3, lines 20 to 27. Therefore, GM '753 teaches "a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle." Although GM '753 does not refer to the use of a throttle position sensor, throttle position sensors are taught by Jurgen. Therefore, the combination of

Jurgen and GM '753 teaches "said processor subsystem determining whether to activate said fuel overinjection notification sensor based upon data received from said road speed sensor, said throttle position sensor and said manifold pressure sensor."

Claims 29 and 30 require the fuel overinjection notification circuit to be activated when certain conditions measured by the claimed sensors are either increasing or decreasing. For example, claim 29 requires the fuel overinjection notification circuit to be activated when it is determined that (1) road speed is increasing; (2) throttle position is increasing; and (3) the manifold pressure exceeds a manifold pressure set point. In the remarks that were presented with these claims, the Applicant stated as follows:

> Specifically, as presented in new Claims 34-36, Applicants' claimed apparatus for optimizing operation of a vehicle includes a fuel overinjection notification circuit and a processor subsystem which determines when to activate the fuel overinjection notification circuit. The processor makes that determination based upon data received from specifically recited sensors, <u>including the road speed sensor.</u>

February 16, 1999 Amendment, page 11 (emphasis in original).

In allowing these claims, the Examiner stated that the prior art does not disclose that the processor subsystem determines "whether to activate the fuel overinjection notification circuit based upon data received from the road speed sensor, the throttle position sensor and the manifold sensor." April 22, 1999 Notice of Allowability, at 3. The combination of Jurgen and GM '753 teaches the use of road speed, throttle position, and manifold pressure sensors, and also teaches that a fuel overinjection notification circuit can be activated based upon input from these sensors. *See* Jurgen, page 12.22; GM '753, col. 3, lines 20 to 27.

A person of ordinary skill in the art, at the time the alleged inventions of claims 28–30 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen and GM '753, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 28–30 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen and GM '753, to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), and to "provide[e] an indication when the fuel consumption of a . . . vehicle . . . exceeds pre-

established levels" (GM '753, Abstract). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen and GM '753 are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen and GM '753, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Jurgen and GM '753 teaches the limitations that the applicants asserted were absent from the prior art during prosecution of the '781 patent, *i.e.*, a fuel overinjection notification circuit that is activated based on three sensors: a road speed sensor, a throttle position sensor, and a manifold pressure sensor. Accordingly, a substantial new question of patentability affecting claims 28–30 is raised by the combination of Jurgen and GM '753.

As set forth in the appended charts, the combination of Jurgen and GM '753 teaches all of the limitations of claims 28–30 of the '781 patent and therefore renders obvious claims

28–30 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 28–30 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen and GM '753.

10. Claim 31 is Anticipated Under 35 U.S.C. § 102(b) by Davidian

Claim 31 is anticipated under 35 U.S.C. § 102(b) by Davidian. Davidian was not cited by the Examiner or the applicants during prosecution of the '781 patent, and Davidian is closer to the subject matter of claim 31 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. Davidian provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

Davidian discloses an anti-collision system that includes "a front space sensor 8 for sensing the space in front of the vehicle, such as the presence of another vehicle." Col. 4, lines 52 to 66. This front space sensor includes "a transmitter 106 and a receiver 108 for transmitting and receiving the pulses (e.g., RF, ultrasound, laser, IR, etc.) in the front space sensor 8 . . . for measuring the distance of the vehicle from objects in front of . . . the vehicle." Col. 10, lines 17 to 26. The front space sensor in Davidian continuously transmits pulses (including, in one example, RF pulses) and measures "the round-trip time from the pulse transmission to the echo reception in order to determine the distance of the vehicle from the object." Col. 10, lines 38 to 50. Therefore, Davidian teaches "a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle."

Davidian also teaches the use of sensors, including "a speed sensor 12 which may sense the speed of the vehicle in any known manner." Col. 4, lines 60 to 66. Therefore, Davidian teaches "at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor."

Davidian also teaches a processor subsystem, disclosed as microcomputer 4, which is illustrated in FIGS. 6a and 6b. It is coupled to the radar detector (front vehicle space sensor 8) and the vehicle speed sensor 12:

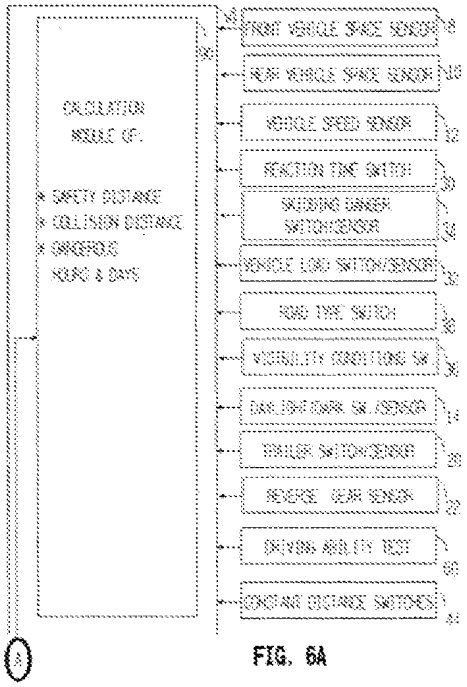


FIG. 6A

"The microcomputer 4 as illustrated in FIGS. 6a, 6b is divided into various functional modules, as follows: a calculation module 90, which receives data concerning the various parameters briefly described above." Col. 8, lines 29 to 43. Therefore, Davidian teaches "a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom."

Davidian teaches a memory subsystem that stores a vehicle speed/stopping distance table. "***Computer module 90 also includes information about the vehicle braking distances as a function of speed. This is preferably in the form of a look-up table,*** for example, provided by the manufacturer for predetermined defined conditions concerning road type, skidding danger, vehicle load and tires pressure, and is ***stored in a ROM (read-only memory) of the microcomputer so that it can be changed periodically if necessary.***" Col. 9, lines 20 to 27. This memory subsystem is a part of the microcomputer 4, as illustrated in FIG. 6A. Therefore, Davidian teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table."

Davidian teaches a vehicle proximity alarm circuit, which activates a collision alarm when a calculated "Collision Distance" is close to a calculated "Stopping Distance." "A determination is also made of the collision distance CD which is equal to the stopping distance SD divided by the collision safety factor CSF, e.g., 1.25 in the example illustrated above, such that should the distance between the vehicle and the object come within the collision distance CD, the collision alarm is then actuated." Col. 12, line 59 to col. 13, line

11. The collision alarm, may be an audio alarm or a visual alarm. Col. 9, lines 52 to 56. The determination whether to activate the collision alarm is made by the calculation module 90, which is part of the microcomputer 4. *See* col. 12, line 27 ("Operation of the Calculation Module 90"). Therefore, Davidian teaches "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object."

Davidian also teaches that the processor subsystem determines when to activate the proximity alarm based on (1) separation distance data (received from the front vehicle space sensor 8); (2) vehicle speed data (received form vehicle speed sensor 12); and (3) the vehicle speed/stopping distance table stored in memory. The radar input, the vehicle speed input, and the vehicle speed/stopping distance tables are all located in the calculation module 90, which it uses to calculate stopping distance and collision distance. Therefore, Davidian teaches "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Thus, Davidian teaches the limitations that the applicants asserted were absent from the prior art during prosecution of the '781 patent, *i.e.*, a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem. Accordingly, a substantial new question of patentability affecting claim 31 is raised by Davidian.

As set forth in the appended charts, Davidian teaches all of the limitations of claim 31 of the '781 patent and therefore anticipates claim 31 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claim 31 of the '781 patent under 35 U.S.C. § 102(b) as anticipated by Davidian.

11. Claims 31 and 32 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Tonkin and Doi et al.

Claims 31 and 32 are obvious under 35 U.S.C. § 103(a) in view of the combination of Tonkin and Doi et al. Although Doi et al. was cited by the Examiner during prosecution of the '781 patent, Tonkin was not cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 31 and 32 are obvious in view of the combination of Tonkin and Doi et al. was not previously considered. The combination of Tonkin and Doi et al. is closer to the subject matter of claims 31 and 32 of the '781 patent than any prior art

that was relied upon during prosecution of the '781 patent, and the combination of Tonkin and Doi et al. provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the applicants asserted that claim 31 was allowable over the prior art on the basis that the prior art does not disclose a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem. The applicants admitted, however, that a vehicle proximity alarm that is activated based on separation is disclosed in the prior art: "The Applicants respectfully note, however, that the system disclosed in Doi et al. determines alert conditions relative to the proximity between a vehicle and a forward object based upon changes in the distance separating the vehicle and the forward object."

Tonkin discloses a system that calculates a safety envelope and displays a visible warning when a rear-facing vehicle is getting too near. Abstract. Tonkin discloses the use of a radar sensor in order to determine "distance of separation and/or a relative velocity of a trailing vehicle." Page 1, lines 23 to 29. *See also* page 5, lines 4 to 9, "The sensor means for sensing the distance and velocity of the trailing vehicle may comprise a radar system." Therefore, Tonkin discloses "a radar detector."

Tonkin also teaches the use of sensors, including a velocity sensing means comprising "a conventional speed sensing device fitted to the vehicle's transmission train." Page 5, lines 17 to 19. Therefore, Tonkin teaches "at least one sensor coupled to said vehicle for monitoring operation thereof, said at least one sensor including a road speed sensor."

Tonkin also teaches the use of a processor coupled to the sensor. Page 1, lines 32 to 34 ("wherein the controller is operable to process the received velocity signal and data signals to determine the existence of an unsafe condition"). Therefore, Tonkin discloses "a processor subsystem, coupled to said radar detector and said at least one sensor, to receive data therefrom."

Tonkin teaches the use of a memory subsystem that stores parameters in a lookup table, including a vehicle speed/stopping distance table. For example, Tonkin teaches that predetermined driving parameters "may for example be stored in a look up table." Page 3, lines 25 to 32. Additionally, the control system that activates the vehicle proximity alarm relies in part on "known safe stopping distances such as those published by the Minister of Transport, in which a vehicle will stop when the brakes are applied." Page 16, lines 2 to 21. Finally, Tonkin teaches that a look-up table or database could be provided for unsafe closing

speeds, which could be varied according to the velocity of the subject vehicle." Page 17, lines 7 to 25. Therefore, Tonkin teaches "a memory subsystem, coupled to said processor subsystem, said memory subsystem storing a first vehicle speed/stopping distance table."

Tonkin also teaches a vehicle proximity alarm circuit. "***The system may comprise means for warning*** that the subject vehicle is stationary. ***The system can further comprise means for providing warning*** of different levels of deceleration of the subject vehicle. ***The warning means can comprise an orange light display for the relative speed and/or relative separation conditions and a red light display for the vehicle stationary and/or levels of deceleration conditions***. The relative separation and/or relative speed warning may be overridden by the level of deceleration warning." Page 2, line 29 to page 3, line 3. The control system in Tonkin warns the driver behind the vehicle equipped with the device that the driver is getting too close. Therefore, Tonkin teaches "a vehicle proximity alarm circuit coupled to said processor subsystem, said vehicle proximity alarm circuit issuing an alarm that said vehicle is too close to said object."

Tonkin teaches that the processor subsystem determines when to activate the proximity alarm circuit based upon (1) separation distance data received from said radar detector; (2) vehicle speed data received from said road speed sensor; and (3) the vehicle speed/stopping distance table. For example, the radar system is "operable to sense a distance of separation and/or a relative velocity of a trailing vehicle." Page 1, lines 32 to 34. The processor subsystem "is operable to process the received velocity signal and data signals to determine the existence of an unsafe condition." The velocity signal used by the processing means is the vehicle velocity signal determined from the vehicle speed sensor. Page 5, lines 17 to 19. The data signals include the separation data (determined from the radar), and the determination regarding whether to activate the alarm is made, in part, using the safe stopping distances provided in the look-up table. Page 17, lines 7 to 25. Therefore, Tonkin teaches "said processor subsystem determining whether to activate said vehicle proximity alarm circuit based upon separation distance data received from said radar detector, vehicle speed data received from said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem."

Although Tonkin does not refer to the radar detector determining a distance separating a vehicle having an engine and an object *in front* of the vehicle, Doi et al., which was cited by the Examiner during prosecution of the '781 patent, discloses a radar detector that "emits a pulse laser beam (as a radar wave) forward of the vehicle 1 from the source and receives reflected light beam reflected by a forward object in the way such as a vehicle, thereby

measuring the distance from the vehicle 1 to the forward object." Col. 2, lines 59 to 62. Therefore, Doi et al. teaches "a radar detector, said radar detector determining a distance separating a vehicle having an engine and an object in front of said vehicle."

Tonkin teaches that "information regarding the weather might be obtained for example by enabling the warning system controller to ascertain if the windscreen wipers are in use or have been in use recently due to rain." Page 18, lines 9 to 13. Additionally, Tonkin teaches that "safe stopping distances can be adjusted for prevailing weather conditions." Page 18, lines 16 to 19. Therefore, Tonkin discloses the adjustment of the vehicle speed/stopping distance tables based upon weather information determined from a windshield wiper sensor as claimed in claim 32.

A person of ordinary skill in the art, at the time the alleged invention of claims 31 and 32 of the '781 patent was made, would have found it obvious to combine the teachings of Tonkin and Doi et al., and, in addition, would have been motivated to do so, for example, to "provide safety information for example to drivers of following vehicles" (Tonkin, page 1, lines 4-5) and to "detect the relative speed of a vehicle to a forward object (e.g., a forward vehicle) at high efficiency" (Doi et al., col. 1, lines 34 to 36). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will enhance the efficient operation thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Tonkin and Doi et al. are concerned with, for example, vehicle safety.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Thus, the combination of Tonkin and Doi et al. teaches the limitations that the applicants asserted were absent from the prior art during prosecution of the '781 patent, *i.e.*, disclose a vehicle proximity alarm that is activated based upon three parameters: (1) road speed, as determined by a road speed sensor; (2) separation, as determined by a radar detector; and (3) a vehicle speed/stopping distance table stored in a memory subsystem.

Accordingly, a substantial new question of patentability affecting claims 31 and 32 is raised by the combination of Tonkin and Doi et al.

As set forth in the appended charts, the combination of Tonkin and Doi et al. teaches all of the limitations of claims 31 and 32 of the '781 patent and therefore renders obvious claims 31 and 32 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 31 and 32 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Tonkin and Doi et al.

12. Claims 2, 4, and 5 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Chasteen

Claims 2, 4, and 5 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Saturn '452, and Chasteen. Although Chasteen was cited by the Examiner during prosecution of the '781 patent, neither Jurgen nor Saturn '452 was cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claims 2, 4, and 5 are obvious in view of the combination of Jurgen, Saturn '452, and Chasteen was not previously considered. The combination of Jurgen, Saturn '452, and Chasteen is closer to the subject matter of claims 2, 4, and 5 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Saturn '452, and Chasteen provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claim 1, from which claims 2, 4, and 5 depend, was allowable over the prior art cited during prosecution on the basis that the prior art does not teach an upshift notification circuit, wherein the processor determines, based upon data received from sensors, when to activate said upshift notification circuit, and there is no indication in the prosecution history that any of dependent claims 2, 4, and 5 were allowable over the cited prior art for any reason other than their dependency from claim 1. As also more fully explained above, the combination of Jurgen and Saturn '452 raises a substantial new question of patentability affecting claim 1 and renders obvious claim 1 under 35 U.S.C. § 103(a).

During prosecution of the '781 patent, the Examiner determined that a person of ordinary skill in the art would have found the added limitations of dependent claims 2, 4, and

5 obvious in view of the teachings of Chasteen.[10] For example, in rejecting claims 2 and 4 as obvious in view of Chasteen, the Examiner found that:

> Chasteen discloses the sensors as discussed for sensing the signals and a processor and compare [sic] manifold pressure for activating the fuel injection. Chasteen discloses the speed (RPM) and throttle position are determined to be greater than 0 (increasing) and the CPU provide s control command to the engine to prime the engine (See column 11, lines 22-33) therefore on [sic] would consider increasing and decreasing the speed and throttle for adjusting the fuel injector for supplying fuel to the engine.

In the amendment filed by the applicants in response to the Office Action containing the foregoing findings, the applicants did not amend claims 2 and 4 and did not present any arguments against the Examiner's findings. Instead, and as indicated above, the applicants amended claim 1, from which claims 2, 4 , and 5 depend, to include the upshift notification circuit limitations that the Examiner found missing from the prior art.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen discloses a diagram of these hardware parts:

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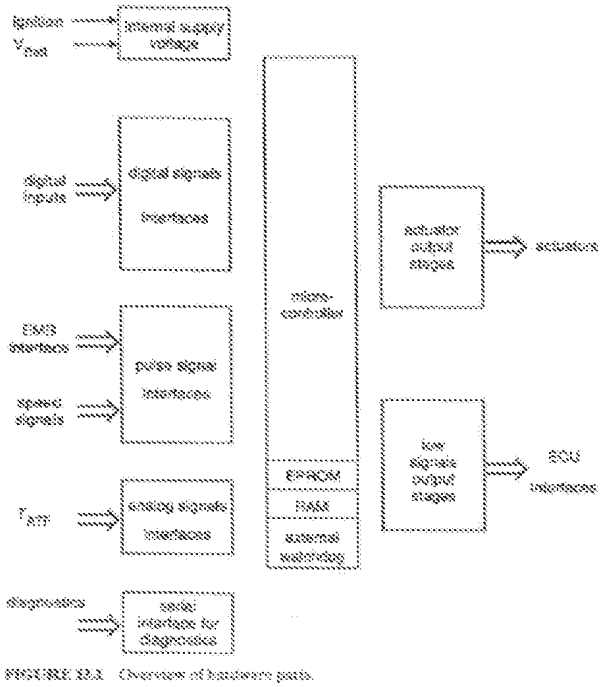
[10] To render a claim obvious, "[t]he prior art reference (or references when combined) need not teach or suggest all of the claim limitations." M.P.E.P. § 2141



Jurgen, therefore, teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is increasing[/decreasing]," and "means for determining when throttle position for said vehicle is increasing[/decreasing]" as claimed in claims 2, 4, and 5.

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition.

Because Saturn '452 discloses an upshift notification circuit triggered by a processor in response to sensors (*see* col. 2, lines 42 to 55), the Examiner's statements that the fuel overinjection circuit triggered based upon sensor inputs would have been obvious in view of Chasteen also apply to the upshift notification circuit in view of Saturn '452.

A person of ordinary skill in the art, at the time the alleged inventions of claims 2, 4, and 5 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Saturn '452, and Chasteen, and, in addition, would have been motivated to do so.

Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 2, 4, and 5 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Saturn '452, and Chasteen, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to provide a "means for indicating to the operator a point in operation for upshifting to the next higher gear" (Saturn '452, Abstract), to provide "an improved method of determining shift points and indicating the same to a vehicle operator in order to maximize real driving fuel economy" (Saturn '452, col. 1, lines 44 to 47), and to indicate the "optimum fuel requirements for the engine" (Chasteen, col. 2, lines 48 to 54). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Saturn '452, and Chasteen are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Saturn '452, and Chasteen, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Jurgen, Saturn '452, and Chasteen teaches all of the limitations of claims 2, 4, and 5 of the '781 patent and therefore renders obvious claims 2, 4, and 5 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 2, 4, and 5 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Saturn '452, and Chasteen.

13. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Chasteen

Claims 2, 4, 5, 8, 10, 12, and 15 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Toyota '599, and Chasteen. While Chasteen was cited by the Examiner during prosecution, neither Jurgen nor Toyota '599 was cited by the Examiner or the applicants during prosecution. Thus, the question of whether claims 2, 4, 5, 8, 10, 12, and 15 are obvious in view of the combination of Jurgen, Toyota '599, and Chasteen was not previously considered. The combination of Jurgen, Toyota '599, and Chasteen is closer to the subject matter of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Toyota '599, and Chasteen provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 1, 7, and 13, from which claims 2, 4, 5, 8, 10, 12, and 15 depend, were allowable over the prior art cited during prosecution solely on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits, and there is no indication in the prosecution history that any of dependent claims 2, 4, 5, 8, 10, 12, and 15 were considered allowable over the cited prior art for any reason other than their dependency from claim 1, 7, or 13.

As set forth in more detail above, the combination of Jurgen and Toyota '599 raises a substantial new question of patentability affecting claims 1, 7, and 13 and renders unpatentable claims 1, 7, and 13 under 35 U.S.C. § 103(a).

During prosecution of the '781 patent, the Examiner determined that a person of ordinary skill in the art would have found the added limitations of dependent claims 2, 4, 5, 8, 10, 12, and 15 obvious in view of the teachings of Chasteen.[11] For example, in rejecting claims 2, 4, and 8 as obvious in view of Chasteen, the Examiner found that:

> Chasteen discloses the sensors as discussed for sensing the signals and a processor and compare [sic] manifold pressure for activating the fuel injection. Chasteen discloses the speed (RPM) and throttle position are determined to be greater than 0 (increasing) and the CPU provides a control command to the engine fuel injector to prime the engine (See column 11, lines 22-33) therefore on [sic] would consider increasing and decreasing the speed and throttle for adjusting the fuel injector for supplying fuel to the engine.

In the Amendment filed by the applicants in response to the Office Action containing the foregoing findings, the applicants did not amend claims 2, 4, or 8 and did not present any arguments against the Examiner's findings. Instead, and as indicate above, the applicants amended claim 1, from which claims 2, 4, and 5 depend, to include the upshift notification circuit limitations that the Examiner found missing from the prior art. Similarly, the applicants rewrote claim 7, from which claims 8, 10, 12 depend, into independent form, in effect adding the downshift notification circuit limitations that the Examiner found missing from the prior art.[12] As for claim 15, which depends from claim 13, the Examiner allowed claim 13, and dependent claim 15, because claim 13 include the upshift and downshift notification circuit limitations that the Examiner found missing from the prior art.

Jurgen teaches an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also teaches that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), throttle position (page 12.21), and acceleration, *i.e.*, change in speed, (pages 7.8 to 7.18), and that the use of

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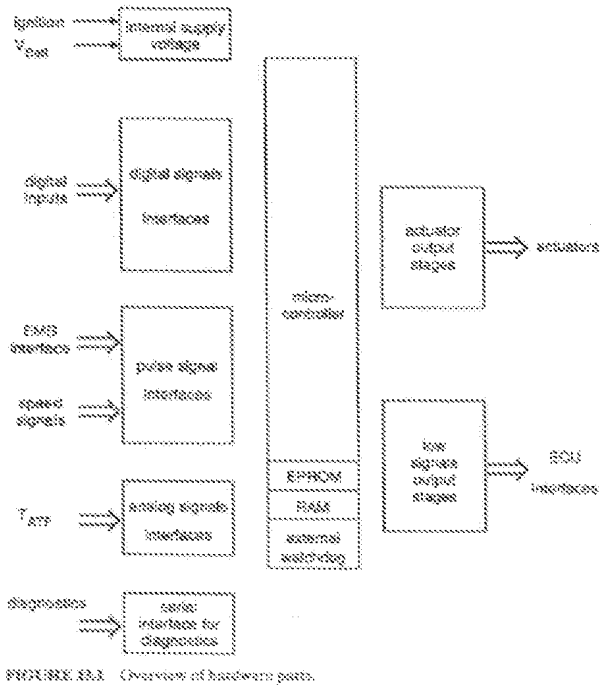
[11] To render a claim obvious, "[t]he prior art reference (or references when combined) need not teach or suggest all of the claim limitations." M.P.E.P. § 2141.

[12] *See, e.g., Honeywell Int'l v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1144 (Fed. Cir. 2004) ("[Dependent c]laims 4, 8, and 19 were rewritten into independent form, and the original independent claims were cancelled, effectively adding the inlet guide vane limitations [of dependent claims 4, 8 and 19] to the claimed invention.").

processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6) "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen discloses a diagram of these hardware parts:



Jurgen, therefore, teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is increasing[/decreasing]," and "means for determining when throttle position for said vehicle is increasing[/decreasing]" as claimed in claims 2, 4, 5, 8, 10, 12, and 15.

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Based upon the Examiner's findings during the original prosecution, it would have been obvious to one of ordinary skill in the art to enable the fuel overinjection notification circuit based upon sensor inputs. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition.

Claims 5, 10, and 15 require that the upshift and/or downshift notification circuits are activated based upon the same types of sensor inputs. For example, claim 5 requires that "said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point." These claims were indicated as allowable because "the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit."[13] Because Toyota '599 discloses both upshift and downshift notification circuits triggered by a processor in response to sensors (*see* col. 5, line 63 to col. 6, line 2), the Examiner's statements that the fuel overinjection circuit triggered based upon sensor inputs would have been obvious in view of Chasteen also apply to the upshift/downshift notification circuits in view of Toyota '599.

A person of ordinary skill in the art, at the time the alleged inventions of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Toyota '599, and Chasteen, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Toyota '599, and Chasteen, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "obtain preferable shift positions relating to optimum fuel consumption rate in accordance with . . . data detected" (Toyota

[13] Claim 15 was explicitly allowed for the quoted reason. Claims 5 and 10 were objected to as being dependent on a rejected base claim, and were allowed when the upshift/downshift notification circuit limitations were added to the independent claims.

'599, Abstract), and to indicate the "optimum fuel requirements for the engine" (Chasteen, col. 2, lines 48 to 54). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Toyota '599, and Chasteen are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Toyota '599, and Chasteen, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Jurgen, Toyota '599, and Chasteen teaches all of the limitations of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent and therefore renders obvious claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Toyota '599, and Chasteen.

14. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Chasteen

Claims 2, 4, 5, 8, 10, 12, and 15 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Volkswagen '070, and Chasteen. Although Chasteen was cited during prosecution of the '781 patent, neither Jurgen nor Volkswagen '070 was cited by the Examiner or the applicants during prosecution. Thus, the question of whether claims 2, 4, 5, 8, 10, 12, and 15 are obvious in view of the combination of Jurgen, Volkswagen '070, and Chasteen was not previously considered. The combination of Jurgen, Volkswagen '070, and Chasteen is closer to the subject matter of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Volkswagen '070, and Chasteen provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 1, 7, and 13, from which claims 2, 4, 5, 8, 10, 12, and 15 depend, were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits, and there is no indication in the prosecution history that any of dependent claims 2, 4, 5, 8, 10, 12, and 15 were considered allowable over the prior art for any reason other than their dependency from claim 1, 7, or 13.

As set forth in more detail above, the combination of Jurgen and Volkswagen '070 raises a substantial new question of patentability affecting claims 1, 7, and 13 and renders obvious claims 1, 7, and 13 under 35 U.S.C. § 103(a).

During prosecution of the '781 patent, the Examiner determined that a person of ordinary skill in the art would have found the added limitations of dependent claims 2, 4, 5, 8, 10, 12, and 15 obvious in view of the teachings of Chasteen.[14] For example, in rejecting claims 2, 4, and 8 as obvious in view of Chasteen, the Examiner found that:

> Chasteen discloses the sensors as discussed for sensing the signals and a processor and compare [sic] manifold pressure for activating the fuel injection. Chasteen discloses the speed (RPM) and throttle position are determined to be greater than 0 (increasing) and the CPU provides a control command to the

[14] To render a claim obvious, "[t]he prior art reference (or references when combined) need not teach or suggest all of the claim limitations." M.P.E.P. § 2141.

> engine fuel injector to prime the engine (See column 11, lines 22-33) therefore on [sic] would consider increasing and decreasing the speed and throttle for adjusting the fuel injector for supplying fuel to the engine.

In the Amendment filed by the applicants in response to the Office Action containing the foregoing findings, the applicants did not amend claims 2, 4, or 8 and did not present any arguments against the Examiner's findings. Instead, and as indicate above, the applicants amended claim 1, from which claims 2, 4, and 5 depend, to include the upshift notification circuit limitations that the Examiner found missing from the prior art. Similarly, the applicants rewrote claim 7, from which claims 8, 10, 12 depend, into independent form, in effect adding the downshift notification circuit limitations that the Examiner found missing from the prior art.[15] As for claim 15, which depends from claim 13, the Examiner allowed claim 13, and dependent claim 15, because claim 13 include the upshift and downshift notification circuit limitations that the Examiner found missing from the prior art.

Jurgen teaches an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also teaches that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), throttle position (page 12.21), and acceleration, *i.e.*, change in speed, (pages 7.8 to 7.18), and that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen discloses a diagram of these hardware parts:

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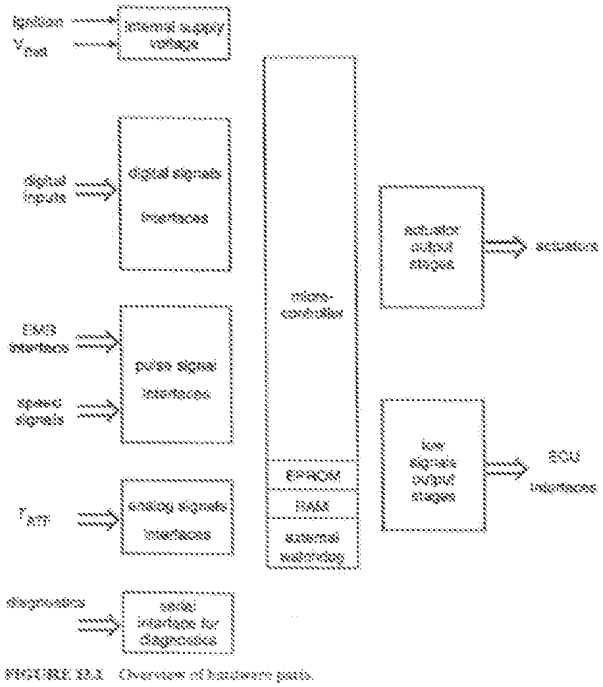
[15] *See, e.g., Honeywell Int'l v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1144 (Fed. Cir. 2004) ("[Dependent c]laims 4, 8, and 19 were rewritten into independent form, and the original independent claims were cancelled, effectively adding the inlet guide vane limitations [of dependent claims 4, 8 and 19] to the claimed invention.").



Jurgen, therefore, teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is increasing[/decreasing]," and "means for determining when throttle position for said vehicle is increasing[/decreasing]" as claimed in claims 2, 4, 5, 8, 10, 12, and 15.

Volkswagen '070 acknowledges that automobile instrument panels that display fuel economy are in the prior art. For example, Volkswagen '070 describes at page 9:

> It is useful in addition to this device, a display of the route-specific fuel consumption is provided in a vehicle. Such display devices are known per se; they generally utilize the ***induction manifold vacuum*** as a measure of the fuel consumption. . . . In this case it us useful to integrate the signal transmitters denoted by 4 and 5 in Figure 2 into the instrument of the fuel consumption display, as sketched in Figure 3. During standard driving operation, pointer 30 of the fuel consumption display sweeps scale 31, while it is hidden behind cover 32 during an idling operation or at full-load accelerations. Incorporated in the scale is arrow 33, which constitutes part of a signal transmitter requesting upshifting, which therefore corresponds to signal transmitter 4 in Figure 2.

(emphasis added)

Thus, by describing a fuel consumption display that indicates full-load acceleration, Volkswagen '070 teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is

increasing[/decreasing]," "means for determining when throttle position for said vehicle is increasing[/decreasing]," and the processor activating the fuel overinjection circuit based upon measurements from these sensors as claimed in claims 2, 4, 5, 8, 10, 12, and 15.

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Based upon the Examiner's findings during the original prosecution, it would have been obvious to one of ordinary skill in the art to enable the fuel overinjection notification circuit based upon sensor inputs. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition.

Claims 5, 10, and 15 require that the upshift and/or downshift notification circuits are activated based upon the same types of sensor inputs. For example, claim 5 requires that "said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point." These claims were indicated as allowable because "the prior art fails to disclose an upshift notification circuit coupled to the processor subsystem, the upshift notification circuit issuing a notification that the engine of the vehicle is being operated at an excessive engine speed and the processor determines when to activate the upshift notification circuit and a downshift notification circuit coupled to the processor subsystem, the downshift notification circuit issuing a notification that the engine of the vehicle is being operated at an insufficient engine speed and the processor determines when to activate the downshift notification circuit."[16] Because Volkswagen '070 discloses both upshift and downshift notification circuits triggered by a processor in response to sensors (*see* pages 6–8), the Examiner's statements that the fuel overinjection circuit triggered based upon sensor inputs would have been obvious in view of Chasteen also apply to the upshift/downshift notification circuits in view of Volkswagen '070.

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[16] Claim 15 was explicitly allowed for the quoted reason. Claims 5 and 10 were objected to as being dependent on a rejected base claim, and were allowed when the upshift/downshift notification circuit limitations were added to the independent claims.

A person of ordinary skill in the art, at the time the alleged inventions of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Volkswagen '070, and Chasteen, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Volkswagen '070, and Chasteen, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), , to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "provid[e] a device that assists the operator of the internal combustion engine equipped with a conventional transmission . . . for example, in setting an operating point of the engine that is advantageous in terms of fuel consumption" (Volkswagen '070, page 5)and to indicate the "optimum fuel requirements for the engine" (Chasteen, col. 2, lines 48 to 54). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Volkswagen '070, and Chasteen are concerned with, for example, improving fuel efficiency.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Volkswagen '070, and Chasteen, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-

> cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Jurgen, Volkswagen '070, and Chasteen teaches all of the limitations of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent and therefore renders obvious claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 2, 4, 5, 8, 10, 12, and 15 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Volkswagen '070, and Chasteen.

15. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin

Claim 18 is obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Toyota '599, Davidian, and Tonkin. Jurgen, Toyota '599, Davidian, and Tonkin were not cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claim 18 is obvious in view of the combination of Jurgen, Toyota '599, Davidian, and Tonkin was not previously considered. The combination of Jurgen, Toyota '599, Davidian, and Tonkin is closer to the subject matter of claim 18 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen, Toyota '599, Davidian, and Tonkin provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

Claim 18 depends from claim 17, and adds the limitations of a windshield wiper sensor for indicating whether a windshield wiper of the vehicle is activated and that the memory subsystem stores a second vehicle speed/stopping distance table.

As set forth in more detail above, the combination of Jurgen, Toyota '599, and Davidian raises a substantial new question of patentability affecting claim 17 and renders obvious claim 17.

Tonkin teaches that "information regarding the weather might be obtained for example by enabling the warning system controller to ascertain if the windscreen wipers are in use or have been in use recently due to rain." Page 18, lines 9 to 13. Additionally, Tonkin teaches that "safe stopping distances can be adjusted for prevailing weather conditions." Page 18, lines 16 to 19. Therefore, Tonkin discloses the adjustment of the vehicle speed/stopping distance tables based upon weather information determined from a windshield wiper sensor.

A person of ordinary skill in the art, at the time the alleged invention of claim 18 of the '781 patent was made, would have found it obvious to combine the teachings of Jurgen, Toyota '599, Davidian, and Tonkin, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged invention of claim 18 of the '781 patent was made would have been further motivated to combine the teachings of Jurgen, Toyota '599, Davidian, and Tonkin, to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "obtain preferable shift positions relating to optimum fuel consumption rate in accordance with . . . data detected" (Toyota '599, Abstract), to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4), and to "provide safety information for example to drivers of following vehicles" (Tonkin, page 1, lines 4-5). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Toyota '599, Davidian, and Tonkin are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Toyota '599, Davidian, and Tonkin, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
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> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Regarding the second vehicle speed/stopping distance table, claim 18 merely recites that the memory subsystem stores a second vehicle speed/stopping distance table, and neither claim 18 nor claim 17, from which claim 18 depends, otherwise mentions the second vehicle speed/stopping distance table. Therefore, the second vehicle speed/stopping distance table is a mere duplication of parts, which has not patentable significance since no new or unexpected result is produced thereby. *See*, M.P.E.P. § 2144.04(VI)(B).

As set forth in the appended charts, the combination of Jurgen, Toyota '599, Davidian, and Tonkin teaches all of the limitations of claim 18 of the '781 patent and therefore renders obvious claim 18 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claim 18 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Toyota '599, Davidian, and Tonkin.

16. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin

Claim 18 is obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Volkswagen '070, Davidian, and Tonkin. Jurgen, Volkswagen '070, Davidian, and Tonkin were not cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claim 18 is obvious in view of the combination of Jurgen, Volkswagen '070, Davidian, and Tonkin was not previously considered. The combination of Jurgen, Volkswagen '070, Davidian, and Tonkin is closer to the subject matter of claim 18 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen, Volkswagen '070, Davidian, and Tonkin provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

Claim 18 depends from claim 17, and adds the limitations of a windshield wiper sensor for indicating whether a windshield wiper of the vehicle is activated and that the memory subsystem stores a second vehicle speed/stopping distance table.

As set forth in more detail above, the combination of Jurgen, Volkswagen '070, and Davidian raises a substantial new question of patentability affecting claim 17 and renders obvious claim 17.

Tonkin teaches that "information regarding the weather might be obtained for example by enabling the warning system controller to ascertain if the windscreen wipers are in use or have been in use recently due to rain." Page 18, lines 9 to 13. Additionally, Tonkin teaches that "safe stopping distances can be adjusted for prevailing weather conditions." Page 18, lines 16 to 19. Therefore, Tonkin discloses the adjustment of the vehicle speed/stopping distance tables based upon weather information determined from a windshield wiper sensor.

A person of ordinary skill in the art, at the time the alleged invention of claim 18 of the '781 patent was made, would have found it obvious to combine the teachings of Jurgen, Volkswagen '070, Davidian, and Tonkin, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged invention of claim 18 of the '781 patent was made would have been further motivated to combine the teachings of Jurgen, Volkswagen '070, Davidian, and Tonkin, to

"provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "provid[e] a device that assists the operator of the internal combustion engine equipped with a conventional transmission . . . for example, in setting an operating point of the engine that is advantageous in terms of fuel consumption" (Volkswagen '070, Page 5), to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4), and to "provide safety information for example to drivers of following vehicles" (Tonkin, page 1, lines 4-5). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Volkswagen '070, Davidian, and Tonkin are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Volkswagen '070, Davidian, and Tonkin, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either

the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Regarding the second vehicle speed/stopping distance table, claim 18 merely recites that the memory subsystem stores a second vehicle speed/stopping distance table, and neither claim 18 nor claim 17, from which claim 18 depends, otherwise mentions the second vehicle speed/stopping distance table. Therefore, the second vehicle speed/stopping distance table is a mere duplication of parts, which has not patentable significance since no new or unexpected result is produced thereby. *See*, M.P.E.P. § 2144.04(VI)(B).

As set forth in the appended charts, the combination of Jurgen, Volkswagen '070, Davidian, and Tonkin teaches all of the limitations of claim 18 of the '781 patent and therefore renders obvious claim 18 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claim 18 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Volkswagen '070, Davidian, and Tonkin.

17. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin

Claim 18 is obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Saturn '452, Davidian, and Tonkin. Jurgen, Saturn '452, Davidian, and Tonkin were not cited by the Examiner or the applicants during prosecution. Therefore, the question of whether claim 18 is obvious in view of the combination of Jurgen, Saturn '452, Davidian, and Tonkin was not previously considered. The combination of Jurgen, Saturn '452, Davidian, and Tonkin is closer to the subject matter of claim 18 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Jurgen, Saturn '452, Davidian, and Tonkin provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

Claim 18 depends from claim 17, and adds the limitations of a windshield wiper sensor for indicating whether a windshield wiper of the vehicle is activated and that the memory subsystem stores a second vehicle speed/stopping distance table.

As set forth in more detail above, the combination of Jurgen, Saturn '452, and Davidian raises a substantial new question of patentability affecting claim 17 and renders obvious claim 17.

Tonkin teaches that "information regarding the weather might be obtained for example by enabling the warning system controller to ascertain if the windscreen wipers are in use or have been in use recently due to rain." Page 18, lines 9 to 13. Additionally, Tonkin teaches that "safe stopping distances can be adjusted for prevailing weather conditions."

Page 18, lines 16 to 19. Therefore, Tonkin discloses the adjustment of the vehicle speed/stopping distance tables based upon weather information determined from a windshield wiper sensor.

A person of ordinary skill in the art, at the time the alleged invention of claim 18 of the '781 patent was made, would have found it obvious to combine the teachings of Jurgen, Saturn '452, Davidian, and Tonkin, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged invention of claim 18 of the '781 patent was made would have been further motivated to combine the teachings of Jurgen, Saturn '452, Davidian, and Tonkin, to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to provide a "means for indicating to the operator a point in operation for upshifting to the next higher gear" (Saturn '452, Abstract), to provide "an improved method of determining shift points and indicating the same to a vehicle operator in order to maximize real driving fuel economy" (Saturn '452, col. 1, lines 44 to 47). to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4), and to "provide safety information for example to drivers of following vehicles" (Tonkin, page 1, lines 4-5). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Saturn '452, Davidian, and Tonkin are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Saturn '452, Davidian, and Tonkin, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately

> in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Regarding the second vehicle speed/stopping distance table, claim 18 merely recites that the memory subsystem stores a second vehicle speed/stopping distance table, and neither claim 18 nor claim 17, from which claim 18 depends, otherwise mentions the second vehicle speed/stopping distance table. Therefore, the second vehicle speed/stopping distance table is a mere duplication of parts, which has not patentable significance since no new or unexpected result is produced thereby. *See*, M.P.E.P. § 2144.04(VI)(B).

As set forth in the appended charts, the combination of Jurgen, Saturn '452, Davidian, and Tonkin teaches all of the limitations of claim 18 of the '781 patent and therefore renders obvious claim 18 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claim 18 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Saturn '452, Davidian, and Tonkin.

18. Claims 24 and 25 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian and Chasteen

Claims 24 and 25 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Saturn '452, Davidian, and Chasteen. Although Chasteen was cited by the Examiner during prosecution of the '781 patent, Jurgen, Saturn '452, and Davidian were not cited by the Examiner or the applicants during prosecution. Thus, the question of whether claims 24 and 25 are obvious in view of the combination of Jurgen, Saturn '452, Davidian and Chasteen was not previously considered. The combination of Jurgen, Saturn '452, Davidian, and

Chasteen is closer to the subject matter of claims 24 and 25 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Saturn '452, Davidian, and Chasteen provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claim 23, from which claims 24 and 25 depend, was allowable over the prior art cited during prosecution on the basis that the prior art does not teach an upshift notification circuit, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits, and there is no indication in the prosecution history that either claim 24 or claim 25 was considered allowable over the cited prior art for any reason other than their dependency from claim 23.

As set forth in more detail above, the combination of Jurgen, Saturn '452, and Davidian raises a substantial new question of patentability affecting claim 23 and renders obvious claim 23 under 35 U.S.C. § 103(a).

During prosecution of the '781 patent, the Examiner determined that a person of ordinary skill in the art would have found the added limitations of dependent claims 24 and 25 obvious in view of the teachings of Chasteen.[17] For example, in rejecting claim 24 as obvious in view of the combination of Chasteen and Doi et al., the Examiner found that:

> Chasteen discloses the sensors as discussed for sensing the signals and a processor and compare [sic] manifold pressure for activating the fuel injection. Chasteen discloses the speed (RPM) and throttle position are determined to be greater than 0 (increasing) and the CPU provides a control command to the engine fuel injector to prime the engine (See column 11, lines 22-33) therefore on [sic] would consider increasing and decreasing the speed and throttle for adjusting the fuel injector for supplying fuel to the engine.

In the Amendment filed by the applicants in response to the Office Action containing the foregoing findings, the applicants did not amend claim 24 or 25 and did not present any arguments against the Examiner's findings. Instead, and as indicate above, the applicants amended claim 23, from which claims 24 and 25 depend, to include the upshift notification circuit limitations that the Examiner found missing from the prior art.

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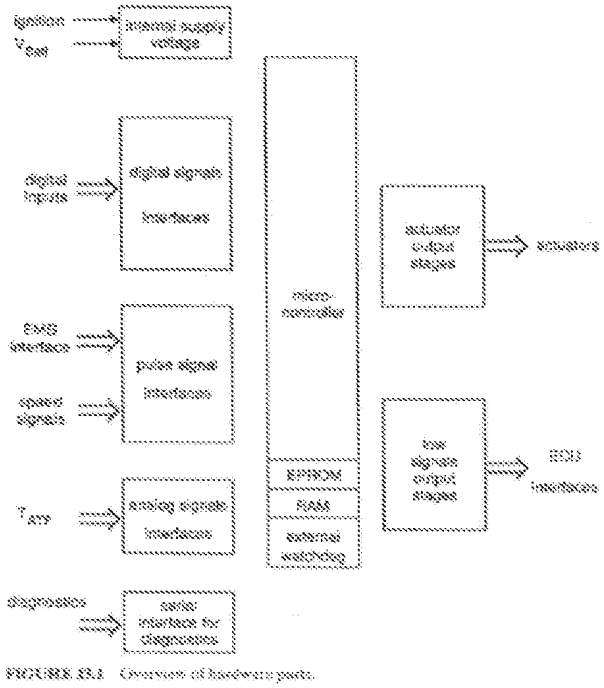
[17] To render a claim obvious, "[t]he prior art reference (or references when combined) need not teach or suggest all of the claim limitations." M.P.E.P. § 2141.

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen discloses a diagram of these hardware parts:



Jurgen, therefore, teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is increasing[/decreasing]," and "means for determining when throttle position for said vehicle is increasing[/decreasing]" as claimed in claims 24, 25, and 27.

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Based upon the Examiner's statements during the original prosecution, it would have been obvious to one of ordinary skill in the art to enable the fuel overinjection notification circuit based upon sensor

inputs. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition.

Claim 25 describes that the upshift notification circuit is activated based upon the same types of sensor inputs. For example, claim 25 requires that "said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point." Because Saturn '452 discloses an upshift notification circuit triggered by a processor in response to sensors (*see* col. 2, lines 42 to 55) the Examiner's statements that the fuel overinjection circuit triggered based upon sensor inputs would have been obvious in view of Chasteen also apply to the upshift notification circuit in view of Saturn '452.

A person of ordinary skill in the art, at the time the alleged inventions of claims 24 and 25 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Saturn '452, Davidian, and Chasteen, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 24 and 25 of the '781 patent were made would have been further motivated to combine the teachings of Jurgen, Saturn '452, Davidian, and Chasteen, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to provide a "means for indicating to the operator a point in operation for upshifting to the next higher gear" (Saturn '452, Abstract), to provide "an improved method of determining shift points and indicating the same to a vehicle operator in order to maximize real driving fuel economy" (Saturn '452, col. 1, lines 44 to 47), to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4), and to indicate the "optimum fuel requirements for the engine" (Chasteen, col. 2, lines 48 to 54). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective

action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Saturn '452, Davidian, and Chasteen are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Saturn '452, Davidian, and Chasteen, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Jurgen, Saturn '452, Davidian, and Chasteen teaches all of the limitations of claims 24 and 25 of the '781 patent and therefore renders obvious claims 24 and 25 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 24 and 25 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Saturn '452, Davidian, and Chasteen.

19. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian and Chasteen

Claims 24, 25, and 27 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Toyota '599, Davidian and Chasteen. Although Chasteen was cited

by the Examiner during prosecution of the '781 patent, Jurgen, Toyota '599, and Davidian were not cited by the Examiner or the applicants during prosecution. Thus, the question of whether claims 24, 25, and 27 are obvious in view of the combination of Jurgen, Toyota '599, Davidian and Chasteen was not previously considered. The combination of Jurgen, Toyota '599, Davidian, and Chasteen is closer to the subject matter of claims 24, 25, and 27 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Toyota '599, Davidian, and Chasteen provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 23 and 26, from which claims 24, 25, and 27 depend, were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits, and there is no indication in the prosecution history that any of dependent claims 24, 25, and 27 were considered allowable over the cited prior art for any reason other than their dependency from claim 23 or 26.

As set forth in more detail above, the combination of Jurgen, Toyota '599, and Davidian raises a substantial new question of patentability affecting claims 23 and 26 and renders obvious claims 23 and 26 under 35 U.S.C. § 103(a).

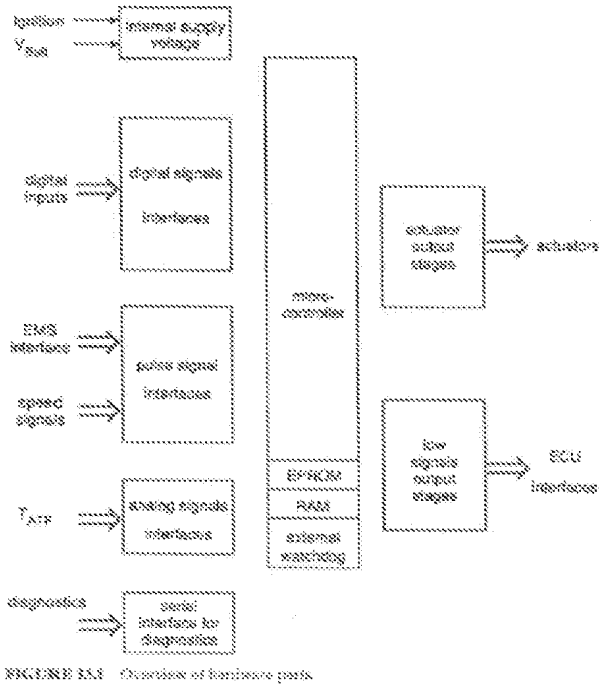
During prosecution of the '781 patent, the Examiner determined that a person of ordinary skill in the art would have found the added limitations of dependent claims 24, 25, and 27 obvious in view of the teachings of Chasteen.[18] For example, in rejecting claim 24 as obvious in view of the combination of Chasteen and Doi et al., the Examiner found that:

> Chasteen discloses the sensors as discussed for sensing the signals and a processor and compare [sic] manifold pressure for activating the fuel injection. Chasteen discloses the speed (RPM) and throttle position are determined to be greater than 0 (increasing) and the CPU provides a control command to the engine fuel injector to prime the engine (See column 11, lines 22-33) therefore on [sic] would consider increasing and decreasing the speed and throttle for adjusting the fuel injector for supplying fuel to the engine.

[18] To render a claim obvious, "[t]he prior art reference (or references when combined) need not teach or suggest all of the claim limitations." M.P.E.P. § 2141.

In the Amendment filed by the applicants in response to the Office Action containing the foregoing findings, the applicants did not amend claim 24, 25, or 27 and did not present any arguments against the Examiner's findings. Instead, and as indicate above, the applicants amended claim 23, from which claims 24 and 25 depend, to include the upshift notification circuit limitations that the Examiner found missing from the prior art, and rewrote claim 26, from which, claim 27 depends, in effect adding the downshift notification circuit limitations that the Examiner found missing from the prior art.[19]

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen discloses a diagram of these hardware parts:



[19] *See, e.g., Honeywell Int'l v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1144 (Fed. Cir. 2004) ("[Dependent c]laims 4, 8, and 19 were rewritten into independent form, and the original independent claims were cancelled, effectively adding the inlet guide vane limitations [of dependent claims 4, 8 and 19] to the claimed invention.").

Jurgen, therefore, teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is increasing[/decreasing]," and "means for determining when throttle position for said vehicle is increasing[/decreasing]" as claimed in claims 24, 25, and 27.

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Based upon the Examiner's statements during the original prosecution, it would have been obvious to one of ordinary skill in the art to enable the fuel overinjection notification circuit based upon sensor inputs. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition.

Claims 25 and 27 require that the upshift and/or downshift notification circuits are activated based upon the same types of sensor inputs. For example, claim 25 requires that "said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point." Because Toyota '599 discloses both upshift and downshift notification circuits triggered by a processor in response to sensors (*see* col. 5, line 63 to col. 6, line 2), the Examiner's statements that the fuel overinjection circuit triggered based upon sensor inputs would have been obvious in view of Chasteen also apply to the upshift/downshift notification circuits in view of Toyota '599.

A person of ordinary skill in the art, at the time the alleged inventions of claims 24, 25, and 27 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Toyota '599, Davidian, and Chasteen, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 24, 25, and 27 of the '781

patent were made would have been further motivated to combine the teachings of Jurgen, Toyota '599, Davidian, and Chasteen, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "obtain preferable shift positions relating to optimum fuel consumption rate in accordance with [] data detected" (Toyota '599, Abstract), to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4), and to indicate the "optimum fuel requirements for the engine" (Chasteen, col. 2, lines 48 to 54). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Toyota '599, Davidian, and Chasteen are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Toyota '599, Davidian, and Chasteen, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
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> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either

the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Jurgen, Toyota '599, Davidian, and Chasteen teaches all of the limitations of claims 24, 25, and 27 of the '781 patent and therefore renders obvious claims 24, 25, and 27 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 24, 25, and 27 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Toyota '599, Davidian, and Chasteen.

20. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian and Chasteen

Claims 24, 25, and 27 are obvious under 35 U.S.C. § 103(a) in view of the combination of Jurgen, Volkswagen '070, Davidian and Chasteen. Although Chasteen was cited by the Examiner during prosecution of the '781 patent, Jurgen, Volkswagen '070, and Davidian were not cited by the Examiner or the applicants during prosecution. Thus, the question of whether claims 24, 25, and 27 are obvious in view of the combination of Jurgen, Volkswagen '070, Davidian and Chasteen was not previously considered. The combination of Jurgen, Volkswagen '070, Davidian, and Chasteen is closer to the subject matter of claims 24, 25, and 27 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent. The combination of Jurgen, Volkswagen '070, Davidian, and Chasteen provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

As more fully explained above, the Examiner concluded that claims 23 and 26, from which claims 24, 25, and 27 depend, were allowable over the prior art cited during prosecution on the basis that the prior art does not teach upshift and/or downshift notification circuits, wherein the processor determines, based upon data received from sensors, when to activate said upshift and/or downshift notification circuits, and there is no indication in the prosecution history that any of dependent claims 24, 25, and 27 were considered allowable over the cited prior art for any reason other than their dependency from claim 23 or 26.

As set forth in more detail above, the combination of Jurgen, Volkswagen '070, and Davidian raises a substantial new question of patentability affecting claims 23 and 26 and renders obvious claims 23 and 26 under 35 U.S.C. § 103(a).

During prosecution of the '781 patent, the Examiner determined that a person of ordinary skill in the art would have found the added limitations of dependent claims 24, 25,

and 27 obvious in view of the teachings of Chasteen.[20] For example, in rejecting claim 24 as obvious in view of the combination of Chasteen and Doi et al., the Examiner found that:

> Chasteen discloses the sensors as discussed for sensing the signals and a processor and compare [sic] manifold pressure for activating the fuel injection. Chasteen discloses the speed (RPM) and throttle position are determined to be greater than 0 (increasing) and the CPU provides a control command to the engine fuel injector to prime the engine (See column 11, lines 22-33) therefore on [sic] would consider increasing and decreasing the speed and throttle for adjusting the fuel injector for supplying fuel to the engine.

In the Amendment filed by the applicants in response to the Office Action containing the foregoing findings, the applicants did not amend claim 24, 25, or 27 and did not present any arguments against the Examiner's findings. Instead, and as indicate above, the applicants amended claim 23, from which claims 24 and 25 depend, to include the upshift notification circuit limitations that the Examiner found missing from the prior art, and rewrote claim 26, from which, claim 27 depends, in effect adding the downshift notification circuit limitations that the Examiner found missing from the prior art.[21]

Jurgen discloses an electronic engine control system that receives sensor inputs, evaluates them, and determines the necessary outputs to provide for optimal driveability. (Jurgen, page 12.1). Jurgen also discloses that these sensors monitor engine speed (page 7.6), road speed (pages 7.8, 14.3), manifold pressure (pages 2.5, 2.7), throttle position (page 12.21). Jurgen also teaches that the use of processor subsystems to receive inputs from these sensors was known. (Pages 12.1, 13.6, 22.6). "During the entire operating time of the vehicle, the ECUs are constantly supervising the sensors they are connected to." (Page 22.6). Indeed, Jurgen discloses a diagram of these hardware parts:

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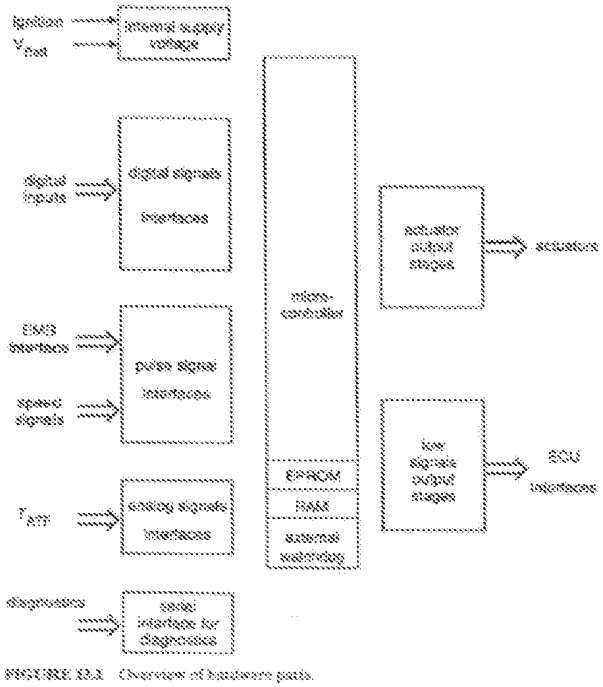
[20] To render a claim obvious, "[t]he prior art reference (or references when combined) need not teach or suggest all of the claim limitations." M.P.E.P. § 2141.

[21] *See, e.g., Honeywell Int'l v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1144 (Fed. Cir. 2004) ("[Dependent c]laims 4, 8, and 19 were rewritten into independent form, and the original independent claims were cancelled, effectively adding the inlet guide vane limitations [of dependent claims 4, 8 and 19] to the claimed invention.").



Jurgen, therefore, teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is increasing[/decreasing]," and "means for determining when throttle position for said vehicle is increasing[/decreasing]" as claimed in claims 24, 25, and 27.

Volkswagen '070 acknowledges that automobile instrument panels that display fuel economy are in the prior art. For example, Volkswagen '070 describes at page 9:

> It is useful in addition to this device, a display of the route-specific fuel consumption is provided in a vehicle. Such display devices are known per se; they generally utilize the ***induction manifold vacuum*** as a measure of the fuel consumption. . . . In this case it us useful to integrate the signal transmitters denoted by 4 and 5 in Figure 2 into the instrument of the fuel consumption display, as sketched in Figure 3. During standard driving operation, pointer 30 of the fuel consumption display sweeps scale 31, while it is hidden behind cover 32 during an idling operation or at full-load accelerations. Incorporated in the scale is arrow 33, which constitutes part of a signal transmitter requesting upshifting, which therefore corresponds to signal transmitter 4 in Figure 2.

(emphasis added)

Thus, by describing a fuel consumption display that indicates full-load acceleration, Volkswagen '070 teaches "means for determining when road speed for said vehicle is increasing[/decreasing]," means for determining when throttle position for said vehicle is

increasing[/decreasing]," "means for determining when throttle position for said vehicle is increasing[/decreasing]," and the processor activating the fuel overinjection circuit based upon measurements from these sensors as claimed in claims 2, 4, 5, 8, 10, 12, and 15.

Jurgen teaches a fuel overinjection notification circuit, which issues a notification that excessive fuel is being supplied to the engine of the vehicle. For example, the ECU taught by Jurgen can shut off fuel in certain situations by evaluating the throttle position, engine RPM, and vehicle speed. (Page 12.4). Additionally, the ECU can shut off fuel injectors when a maximum speed is achieved (page 12.14). The ECU provides the fuel overinjection notification to the fuel injectors when a fuel cutoff state is reached. Based upon the Examiner's statements during the original prosecution, it would have been obvious to one of ordinary skill in the art to enable the fuel overinjection notification circuit based upon sensor inputs. For example, the combination of the ECU, which monitors all of the vehicle's sensors (see above) and the TCU, which stores the shift maps, can send notification circuits to the fuel injectors and/or the transmission in order to alleviate a fuel overinjection condition.

Claims 25 and 27 require that the upshift and/or downshift notification circuits are activated based upon the same types of sensor inputs. For example, claim 25 requires that "said processor subsystem activating said upshift notification circuit if both road speed and throttle position for said vehicle are increasing, manifold pressure for said vehicle is at or below said manifold pressure set point and engine speed for said vehicle is at or above said RPM set point." Because Volkswagen '070 discloses both upshift and downshift notification circuits triggered by a processor in response to sensors (*see* pages 6–8), the Examiner's statements that the fuel overinjection circuit triggered based upon sensor inputs would have been obvious in view of Chasteen also apply to the upshift/downshift notification circuits in view of Volkswagen '070.

A person of ordinary skill in the art, at the time the alleged inventions of claims 24, 25, and 27 of the '781 patent were made, would have found it obvious to combine the teachings of Jurgen, Volkswagen '070, Davidian, and Chasteen, and, in addition, would have been motivated to do so. Indeed, Jurgen, for example, expressly describes one such motivation: "The motive for using an electronic engine control system is to provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur." (Jurgen, Page 12.1). A person of ordinary skill in the art, at the time the alleged inventions of claims 24, 25, and 27 of the '781 patent were made would have been further motivated to combine the teachings of

Jurgen, Volkswagen '070, Davidian, and Chasteen, to "provide optimal driveability for all operating conditions" (Jurgen, Page 12.1), to "provide[] the fuel metering and ignition timing precision to minimize fuel consumption (Jurgen, Page 12.4), to "provid[e] a device that assists the operator of the internal combustion engine equipped with a conventional transmission . . . for example, in setting an operating point of the engine that is advantageous in terms of fuel consumption" (Volkswagen '070, Page 5), to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3 to 4), and to indicate the "optimum fuel requirements for the engine" (Chasteen, col. 2, lines 48 to 54). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will ***enhance the efficient operation*** thereof with the ability to automatically take corrective action ***if the vehicle is being operated unsafely***." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Jurgen, Volkswagen '070, Davidian, and Chasteen are concerned with, for example, improving fuel efficiency and safety.

Furthermore, as additional evidence that a person of ordinary skill in the art would be motivated to combine the teachings of Jurgen, Volkswagen '070, Davidian, and Chasteen, Jurgen describes at page xvii:

> Automotive electronics as we know it today encompasses a wide variety of devices and systems. Key to them all, and those yet to come, is the ability to sense and measure accurately automotive parameters. Equally important at the output is the ability to initiate control actions accurately in response to commands. In other words, sensors and actuators are the heart of any automotive electronics application. . . .
>
> The importance of sensors and actuators cannot be overemphasized. The future growth of automotive electronics is arguably more dependent on sufficiently accurate and low-cost sensors and actuators than on computers, controls, displays, and other technologies.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either

the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Jurgen, Volkswagen '070, Davidian, and Chasteen teaches all of the limitations of claims 24, 25, and 27 of the '781 patent and therefore renders obvious claims 24, 25, and 27 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claims 24, 25, and 27 of the '781 patent under 35 U.S.C. § 103(a) as obvious in view of the combination of Jurgen, Volkswagen '070, Davidian, and Chasteen.

21. Claim 32 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Davidian and Tonkin

Claim 32 is obvious under 35 U.S.C. § 103(a) in view of the combination of Davidian, Chasteen, and Tonkin. Neither Davidian nor Tonkin was cited by the Examiner or the applicants during prosecution of the '781 patent. Therefore, the question of whether claim 32 is obvious in view of the combination of Davidian and Tonkin was not previously considered. The combination of Davidian and Tonkin is closer to the subject matter of claim 32 of the '781 patent than any prior art that was relied upon during prosecution of the '781 patent, and the combination of Davidian and Tonkin provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '781 patent.

Claim 32 depends from claim 31. As set forth in more detail above, Davidian raises a substantial new question of patentability affecting claim 31 and anticipates claim 31 under 35 U.S.C. § 102(b).

Claim 32 adds the limitations of a windshield wiper sensor for indicating whether a windshield wiper of the vehicle is activated and that the memory subsystem further stores a second vehicle speed/stopping distance table. During prosecution of the '781 patent, the applicants stated that "the windshield wiper sensor [of claim 32] is not used to inform the operator as to whether the windshield wipers are on or off." Rather, according to the applicants, "the sensor is used by the processor subsystem to classify road conditions as either 'dry' or 'wet'." Davidian describes that the automatic sensors of the vehicle include a rain sensor 16 (col. 4, line 67 to col. 5, line 2), and Tonkin describes that safe stopping distances can be adjusted for prevailing weather conditions, and that information regarding the weather may be obtained by the warning system controller ascertaining if the windscreen wipers are in use or have been in use recently due to rain (col. 18, lines 9 to 16). Thus, the

combination of Davidian and Tonkin teaches a windshield wiper sensor for indicating whether a windshield wiper of the vehicle is activated, as described in claim 32.

Regarding the memory subsystem storing a second vehicle speed/stopping distance table, Tonkin describes that "safe stopping distances can be adjusted for prevailing weather conditions, again by providing stored values according to weather and possibly for different severities of poor weather." Page 18, lines 16 to 19. Thus, Tonkin teaches a memory subsystem storing a second vehicle speed/stopping distance table, as described in claim 32.

Claim 32 additionally recites that:

> if said windshield wiper sensor indicates that said windshield wiper is deactivated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based on data received from said radar detector, said road speed sensor and said first vehicle speed/stopping distance table stored in said memory subsystem;

and

> if said windshield wiper sensor indicates that said windshield wiper is activated, said processor subsystem determining whether to activate said vehicle proximity alarm circuit based on data received from said radar detector, said road speed sensor and said second vehicle speed/stopping distance table stored in said memory subsystem.

According to the applicants, "[i]f the road is dry, the processor subsystem uses a first vehicle speed/stopping distance table to determine if an object is too closed to the vehicle" and "[i] the road is wet, however, the processor subsystem uses a second vehicle speed/stopping distance table to determine if the object is too close to the vehicle." Referring, for example, to page 18, lines 19 to 26, Tonkin teaches the same control strategy:

> [A] two level warning system can be provided wherein, a first waning, e.g. turn on all lamps 13, when a trailing vehicle 18 encroaches within the safe stopping distance of the subject vehicle 16 for poor weather conditions, and a second warning e.g. flash all or some lamps 13, if the trailing vehicle encroaches within the safe stopping distance for good conditions.

A person of ordinary skill in the art, at the time the alleged inventions of claim 18 of the '781 patent was made, would have found it obvious to combine the teachings of Davidian Chasteen, and Tonkin and, in addition, would have been motivated to do so, for example, to provide an "anti-collision system for vehicles" that "computes[] the danger-of-collision distance to the object" (Davidian, Col. 1, line 7 and col. 2, lines 3-4) and to "provide safety

information for example to drivers of following vehicles" (Tonkin, page 1, lines 4-5). The '781 patent states that its object is to "provide a system which integrates the ability to issue audible warnings which advise the driver to correct operation of the vehicle in a manner which will enhance the efficient operation thereof with the ability to automatically take corrective action if the vehicle is being operated unsafely." Col. 1, line 66 to col. 2, line 5. Thus, like the '781 patent, Tonkin and Doi et al. are concerned with, for example, vehicle safety.

Moreover, the combination of these teachings is merely (a) the combination of prior art elements according to known methods to yield predictable results; (b) the simple substitution of known elements for one another to obtain predictable results; (c) the use of known techniques to improve similar devices in the same way; (d) the application of known techniques to known devices ready for improvement to yield predictable results; (e) obvious to try; and (f) known to work in one field of endeavor prompting variations for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Davidian and Tonkin teaches all of the limitations of claim 32 of the '781 patent and therefore renders obvious claim 32 of the '781 patent. Therefore, VWGoA proposes a ground of rejection of claim 32 of the '781 patent under 35 U.S.C. § 103(a) as obvious by the combination of Davidian and Tonkin.

VIII. VWGoA's PROPOSED GROUNDS OF REJECTION

In view of all of the foregoing, and the annexed claim charts, VWGoA respectfully proposes the following grounds of rejection:

1. Claim 1 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Saturn '452

2. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Toyota '599

3. Claims 1, 7, and 13 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Volkswagen '070

4. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Davidian

5. Claims 17–23 and 26 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Davidian

6. Claims 17–21 and 23 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Davidian

7. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Nissan '055

8. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and Mack '324

9. Claims 28–30 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen and GM '753

10. Claim 31 is Anticipated Under 35 U.S.C. § 102(b) by Davidian

11. Claims 31 and 32 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Tonkin and Doi et al.

12. Claims 2, 4, and 5 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, and Chasteen

13. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, and Chasteen

14. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, and Chasteen

15. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin

16. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin

17. Claim 18 is Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin

18. Claims 24 and 25 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Saturn '452, Davidian and Chasteen

19. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Toyota '599, Davidian and Chasteen

20. Claims 24, 25, and 27 are Obvious Under 35 U.S.C. § 103(a) in View of the Combination of Jurgen, Volkswagen '070, Davidian and Chasteen

21. Claim 32 is Obvious Under 35 U.S.C. § 103(a) in in View of the combination of Davidian and Tonkin

IX. FEE PURSUANT TO 37 C.F.R. § 1.510(a)

The fee under 37 C.F.R. § 1.510(a) for requesting *ex parte* reexamination is being paid by credit card. The Director is authorized to charge any additional fees that may be required in connection with this paper or these proceedings on behalf of Requester,

Volkswagen Group of America, Inc., to the deposit account of Kenyon & Kenyon LLP, Deposit Account ***11-0600***.

X. CERTIFICATION PURSUANT TO 37 C.F.R. § 1.510(b)(5)

According to 37 C.F.R. § 1.510(b)(5), a request for *ex parte* reexamination must include a certification that a copy of the request filed by a person other than the patent owner has been served in its entirety on the patent owner at the address as provided for in 37 C.F.R. § 1.33(c).

According to the Office's PAIR system, the correspondence address for the '781 patent is: Michael S. Bush, Haynes & Boone LLP, 3100 Nationsbank Plaza, 901 Main Street, Dallas, TX 75202-3789. Accordingly, a copy of this Request is being served in its entirety at the foregoing correspondence address as provided for in 37 C.F.R. § 1.33(c), in accordance with 37 C.F.R. § 1.510(b)(5). A certificate of service is annexed hereto as Exhibit 10, which sets forth that, pursuant to 37 C.F.R. § 1. 1.510(b)(5), a copy of this Request is being served in its entirety on "the patent owner at the address as provided for in [37 C.F.R.] § 1.33(c)" at the following address: 3100 Nationsbank Plaza, 901 Main Street, Dallas, TX 75202-3789.

XI. CERTIFICATION PURSUANT TO 37 C.F.R. § 1.510(b)(6)

Requester Volkswagen Group of America, Inc. hereby certifies that the statutory estoppel provisions of 35 U.S.C. § 315(e)(1) or 35 U.S.C. § 325(e)(1) do not prohibit the filing of the *ex parte* reexamination request.

XII. CONCLUSION

For all of the reasons set forth above, reexamination of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17–32 of the '781 patent is requested.

Respectfully submitted,

Date: May 22, 2014

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Appendix

1. Claim 1 is Obvious in View of the Combination of Jurgen and Saturn '452 ..... A-3

2. Claims 1, 7, and 13 are Obvious in View of the Combination of Jurgen and Toyota '599 ..... A-9

3. Claims 1, 7, and 13 are Obvious in View of the Combination of Jurgen and Volkswagen '070 ..... A-31

4. Claims 17–23 and 26 are Obvious in View of the Combination of Jurgen, Toyota '599, and Davidian A-57

5. Claims 17–23 and 26 are Obvious in View of the Combination of Jurgen, Volkswagen '070, and Davidian A-104

6. Claims 17–21 and 23 are Obvious in View of the Combination of Jurgen, Saturn '452, and Davidian A-153

7. Claims 28–30 are Obvious in View of the Combination of Jurgen and Nissan '055 ..... A-185

8. Claims 28–30 are Obvious in View of the Combination of Jurgen and Mack '324 ..... A-200

9. Claims 28–30 are Obvious in View of the Combination of Jurgen and GM '753 ..... A-213

10. Claim 31 is Anticipated by Davidian A-225

11. Claims 31 and 32 are Obvious in View of the Combination of Tonkin and Doi et al. A-230

12. Claims 2, 4, and 5 are Obvious in View of the Combination of Jurgen, Saturn '452, and Chasteen A-241

13. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious in View of the Combination of Jurgen, Toyota '599, and Chasteen A-257

14. Claims 2, 4, 5, 8, 10, 12, and 15 are Obvious in View of the Combination of Jurgen, Volkswagen '070, and Chasteen A-308

15. Claim 18 is Obvious in View of the Combination of Jurgen, Toyota '599, Davidian, and Tonkin A-349

16. Claim 18 is Obvious in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Tonkin A-354

17. Claim 18 is Obvious in View of the Combination of Jurgen, Saturn '452, Davidian, and Tonkin A-359

18. Claims 24 and 25 are Obvious in View of the Combination of Jurgen, Saturn '452, Davidian, and Chasteen A-364

19. Claims 24, 25, and 27 are Obvious in View of the Combination of Jurgen, Toyota '599, Davidian, and Chasteen A-383

20. Claims 24, 25, and 27 are Obvious in View of the Combination of Jurgen, Volkswagen '070, Davidian, and Chasteen A-410

21. Claim 32 is Obvious in View of the Combination of Davidian and Tonkin A-433