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Asano et al.

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OTHER PUBLICATIONS

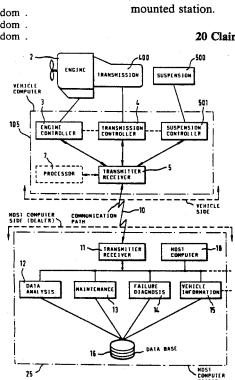
IEEE Spectrum, vol. 23, No. 6, Jun. 1986, New York US pp. 53-59.

Primary Examiner—Thomas G. Black

[57] ABSTRACT

A system and method for load sharing processing operations between a vehicle mounted station (105) and a stationary base station (25) having a large capacity host computer is described. The vehicle mounted station has detectors for determining operating conditions of a vehicle and controllers (3, 4, 501) for varying the operating conditions. The controllers are connected to a transmitter-receiver (5) which is arranged to communicate over a path (10) with a transmitter-receiver (11) of the base station. The base station has a host computer (18) having a large memory capacity. At predetermined intervals, for example, distance of travel or at engine stop, the vehicle transmitter (5) transmits operating conditions to the base receiver (11) for data processing and the base transmitter (11) then transmits processed data back to the vehicle receiver (5), whereupon the controllers (3, 4, 501) modify the vehicle operating conditions. The vehicle operating conditions may be an indication of life expectancy of fuel injectors or sensors, updating data processing maps. The presence of abnormal operating conditions may be detected by the vehicle mounted station, evaluated by the base station and an emergency warning indication provided back to the vehicle mounted station, or if the abnormal condition is not of an emergency nature then counter measures are transmitted from the base station to the vehicle mounted station.

20 Claims, 11 Drawing Sheets



[54] SYSTEM AND METHOD OF LOAD SHARING CONTROL FOR AUTOMOBILE [75] Inventors: Seiji Asano, Matsuta; Kozo Katogi,

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Feb. 15, 1990

[30] Foreign Application Priority Data

364/551.01, 424.04, 138; 340/870.16, 870.03; 73/117.2, 117.3

[56] References Cited

U.S. PATENT DOCUMENTS

4,258,421	3/1981	Juhasz et al	364/424.03
4,757,463	7/1988	Ballou et al	364/551
4,796,206	1/1989	Boscove et al	364/551.01
4,853,859	8/1989	Morita et al	364/424.04
4,939,652	7/1990	Steiner	364/424.04

FOREIGN PATENT DOCUMENTS

 0002232
 6/1979
 European Pat. Off.

 0292811
 11/1988
 European Pat. Off.

 2535491
 5/1984
 France.

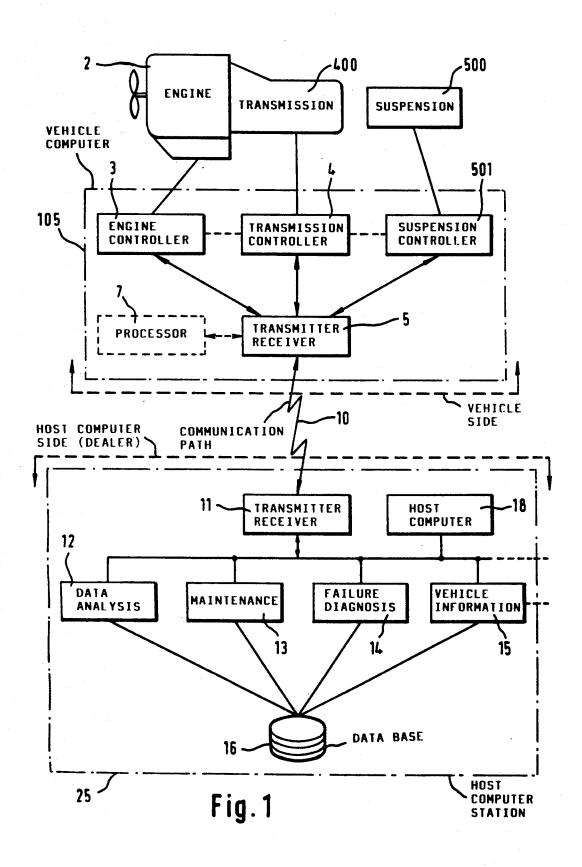
 2559929
 4/1985
 France.

 2100895
 1/1983
 United Kingdom.

 2125578
 3/1984
 United Kingdom.

 2179225
 8/1985
 United Kingdom.

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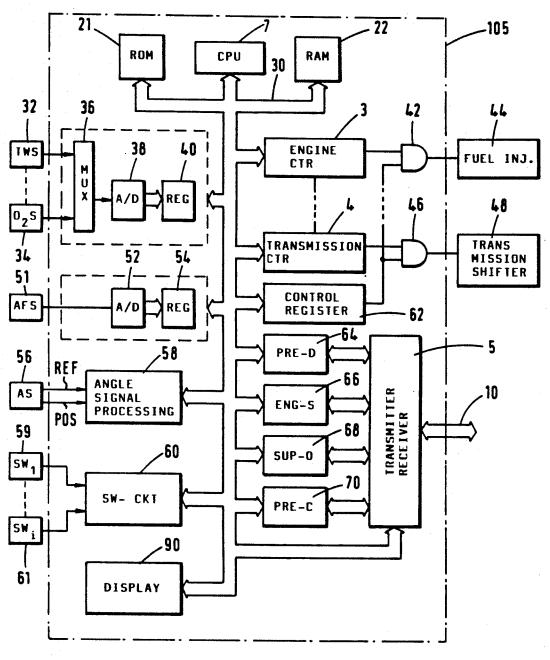


Fig.2

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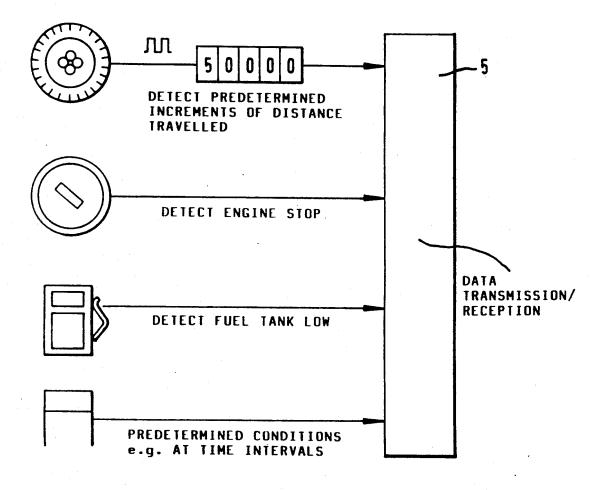
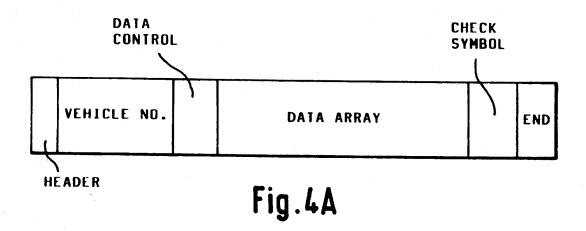


Fig.3



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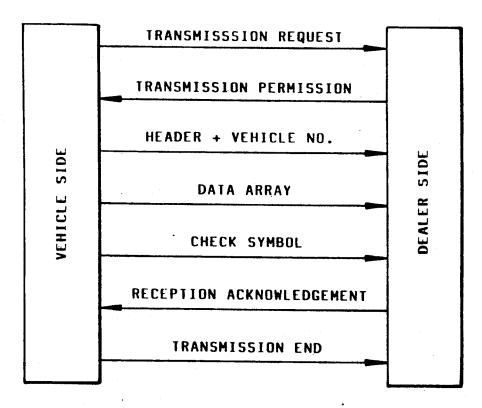


Fig.4B

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