determine by calculation", the step "extracting one or more data elements from at least one sensor" is interpreted to include not only collecting raw data elements but also deriving, generating and calculating data elements as well.

See '079 at, e.g., Figures 1, 3, 12 and the abstract:

> A method and apparatus for evaluating a driver's performance under actual real-time conditions and for using such evaluations to determine the driver's ability to safely operate a vehicle compares the information gathered by a radar system and other sensors with information previously stored in an event recording device. Conditions monitored are used to make a determination as to whether the driver is performing in conformity with normal driving standards and the driver's own past performance. The driver's performance is constantly monitored and compared to that driver's past performance to determine whether the driver's present performance is impaired, and if so, whether the impairment is detrimental to the driver's ability to safely operate the vehicle

and col. 9, line 21-col. 11, line 25:

> The display and sensor section 600 which provides information from a variety of vehicle sensors 4a to the microcontroller 510 for use in calculating the hazard level presented by targets indicated from the received radar signal and/or to indicate the operational status and environment of the vehicle. Commonly known sensors may be used, for example, **to measure** distance travelled, vehicle speed (momentary and average), fuel consumption, fuel remaining, direction of travel, engine temperature, oil pressure, engine RPM, oil temperature, transmission fluid temperature, coolant temperature, engine timing and other values relating to the environment or performance of the vehicle. The digital electronics section 500 itself **generates information from the transmitted and received radar signal, such** as the closing rate (CR) of a target with respect to the vehicle, the distance (D) of various targets, and the direction of movement (towards or away from) of the targets with respect to the vehicle. Additional information can be obtained by providing other sensors, such as a brake pedal pressure sensor, brake hydraulic line pressure sensor, tire pressure, accelerometer sensors (for example, fore and aft acceleration/deceleration, and/or left and right (yaw) acceleration of the vehicle), turning rate, turn angle, and/or impact sensors (such as the type used to trigger vehicle air bags), windshield wiper status (to determine if it is raining), fog light status, outside temperature, defroster status, and geographic positioning information. Recording some or all of this data or similar relevant data would make accident reconstruction more reliable and less **expensive.**

...

The present invention includes a plurality of sensors for sensing a wide range of operational conditions and environmental conditions. Commonly known sensors may be used, for example, the preferred embodiment of the present invention has a mechanical speedometer coupled to the drive train of the vehicle in known fashion. A steering wheel position sensor using a dual Hall-effect device senses the location of a magnetic located on the steering wheel shaft. (Further details regarding the means for determining the position and motion of the steering wheel are disclosed below). A tachometer coupled to the engine in known fashion senses the number of revolutions per minute of the engine. A pressure gauge senses the engine oil pressure. A thermometer senses the temperature of the engine oil and/or engine block. A thermometer senses the temperature of the transmission fluid (if the vehicle uses any such fluid). A thermometer senses the temperature of the engine coolant. Accelerometers sense the rate of lateral acceleration in the direction of forward motion and at right angles to the direction of forward motion. Inclinometers sense the attitude of the vehicle with respect to the gravitational field of the earth. An anti-lock braking system, as is known, is provided and a sensor detects activation of this system. Pressure sensors are placed on the accelerator and brake pedals to sense the amount of pressure being applied to each pedal. A vehicle turn signal sensor senses which, of either of the right or left vehicle turn signals, is active. An external thermometer senses the temperature outside the vehicle. A sensor is also provided which senses when the windshield wipers are active. This list of sensors is not intended to be exhaustive, nor are these particular sensors important in every instance. It should therefore be understood that the number and type of sensors provided in the present invention is not of particular importance. The important aspect of the present invention is the ability to determine the operational conditions under which the driver and vehicle are operating.

The digital electronics section 500 **generates information from the transmitted and received radar signal,** such as the closing rate (CR) of a target with respect to the vehicle, the distance (D) of various targets, and the direction of movement (towards or away from) of the targets with respect to the vehicle. Additional information can be obtained by providing other sensors, such as a brake pedal pressure sensor, brake hydraulic line pressure sensor, tire pressure, accelerometer sensors (for example, fore and aft acceleration/deceleration, and/or left and right (yaw) acceleration of the vehicle), turning rate, turn angle, and/or impact sensors (such as the type used to trigger vehicle air bags), windshield wiper status (to determine if it is raining), fog light status, defroster status, turn signal status, anti-skid brake system (ABS) status and performance, and geographic positioning information.

> Referring to FIG. 3, the display and sensor section 600 provides information from the vehicle sensors 4a to the microcontroller 510 **for use in calculating the hazard level** presented by targets indicated from the received radar signal. In the preferred embodiment of the present invention, each of the sensors are coupled to the system processor 107 which controls both the obstacle detection and collision avoidance system, and the operational event recording system. In the preferred embodiment of the present invention, the sensors are sampled or "polled" in known fashion. However, any means for reading the sensors is within the scope of the present invention. For example, the sensors may cause an interrupt to the microcontroller 510 within the digital electronics section 500 of the system processor 107 at intervals. When the microcontroller 510 recognizes the interrupt, the microcontroller 510 reads the output of the sensor 4a that is responsible for generating the interrupt. Furthermore, it is within the scope of the present invention to include a discrete processor that is dedicated to monitoring each of the sensors and storing the output of each in the ERA. Recording some or all of the data collected from each of the sensors would make accident reconstruction more reliable and less expensive.

Therefore, '079 describes "extracting" one or more data elements from at least one sensor wherein the one or more elements are of at least one operating state of the vehicle and the at least one human's actions during a data collection period.

analyzing, grouping, and storing the one or more data elements as group data values in a first memory related to a predetermined group of elements; and,

The specification of the '970 Patent, other than the claims, never utilizes the language "analyzing, grouping, and storing the one or more data elements as group data values in a first memory related to a predetermined group of elements". See '970 Patent at Figures 1 and 5, col. 8, line 26-col. 9, line 22 and col. 10, lines 51-60, col. 1, line 22-col. 2, line 38, col. 4, line -col. 5, line 12, , col. 5, lines 27-41, col. 6, lines 29-43, col. 7, lines 22-col. 8, line 26, e.g. disclose grouping/classifying data representative of/related to vehicle operational and driver behavior characteristics. Therefore, and in light of MPEP 2258, such language is read/interpreted as requiring analyzing of the at least one data element(s), grouping the at least one data element(s),

and storing the at least one data element(s) as group data value/data value of its group in a first memory wherein the group related to a predetermined group of elements. It is noted that the specifics of the "predetermined group of elements" has not been set forth, i.e. what kind of elements?

Also "a first memory" (note also that this discussion applies to the terminology "a second memory", see discussion of next step infra), is claimed. The specification of the '970 Patent, other than the claims, never utilizes such language. The '970 Patent does describe "The computer is comprised of four components, an on-board **data storage** device 402…a central processing unit **and memory** device 406" (col. 6, line 66 -col. 7, line 5), "…the status of all monitored sensors for the data elements is written to **a file** which is **stored** in the **vehicle data storage** 402" (col. 8, lines 55-58), "The trigger information recording step 116 and the recording sensor information step 106 may impart recording of information in the on-board data **storage** device 402 or **memory** 406. The event response information recording at step 118 will usually occur in the central control station" (col. 9, lines 12-16), "All the information from the combination of **files stored in the vehicle**" (col. 10, lines 21-23), "[at] step 212, all the information comprising the insured profile, which is already maintained and stored in other insurance **files**…This insured profile includes the information about coverages including limits and deductibles, which are necessary for establishing the appropriate cost of insurance for the subject insured" (col. 10, lines 33-39) and "…for a certain information **database**…is stored in the **data storage** device of the computer (col. 11, lines 7-11). Therefore, and in light of MPEP 2258, the language "a first memory" and similar language "a second memory" in the next step is interpreted to require at a minimum a first data storage location and a second date storage

location, respectively. However it is also noted that the claim language does not preclude the storage locations also store the information stored by other storage locations e.g. each storage location includes the same stored data.

See '079 at, e.g., Figure 13 and again col. 24, line 63-col. 29, line 64, e.g.:

> In operation, a RAM card 20 would be inserted into the RAM card receptacle 21. In the preferred embodiment, selected data would be gathered from the vehicle sensors 4a and/or the digital electronics section 500 by the microcontroller 22, typically after the vehicle is started. The data is stored into the RAM card 20 by the microcontroller 22 at periodic intervals, which may be determined by time and/or by distance traveled. The microcontroller 22 may also do some computation on the data, such as determining a miles-per-gallon value or average speed, to derive processed data for storage in the RAM card 20.
>
> In general, **data blocks would be stored** in the RAM card 20 beginning at the **first location** in the memory 54. The address is incremented to point to **successive storage locations for storing subsequent data blocks.**
>
> Different modes of operation can be used. In a first mode, selected data is stored approximately every 0.5 seconds, until the memory 54 on the RAM card 20 is full....
>
> In a second mode of operation, the memory **54 is divided,** *in a static or dynamic fashion,* into multiple logical "pages" for storing independent sets of data. ...
>
> In one variation of the second mode of operation, a first page may be used to record a moving window of selected data. If an accident occurs, the first page of data is "frozen", and a **next** page is used for **subsequent** recording. An accident condition may be detected automatically, or indicated by activation of a manual switch. In this manner, data can be captured for later analysis of the accident.
>
> In another variation of the second mode of operation, recording to a page **other than** the current page may be triggered by an unusual event, such as a vehicle operational or performance value exceeding a preset threshold value, or an accident.
>
> In a third mode of operation, the recording rate may be increased upon

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