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(54) **VEHICLE OBJECT DETECTION SYSTEM AND METHOD**

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application No. 08/905,877, filed on Aug. 4, 1997, now Pat. No. 6,186,537, which is a continuation of application No. 08/505,036, filed on Jul. 21, 1995, now Pat. No. 5,653,462. Continuation-in-part of application No. 09/543,678, filed on Apr. 7, 2000, now Pat. No. 6,412,813, which is a continuation-in-part of application No. 09/047,704, filed on Mar. 25, 1998, now Pat. No. 6,116,639, and which is a continuation-in-part of application No. 08/640,068, filed

(List continued on next page.)

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Related U.S. Application Data

(57) **ABSTRACT**

(63) Continuation-in-part of application No. 09/891,432, filed on Jun. 26, 2001, which is a continuation-in-part of application No. 09/838,920, filed on Apr. 20, 2001, which is a continuation-in-part of application No. 09/563,556, filed on May 3, 2000, which is a continuation-in-part of application No. 09/437,535, filed on Nov. 10, 1999, which is a continuation-in-part of application No. 09/047,703, filed on Mar. 25, 1998, now Pat. No. 6,039,139, which is a continuation-in-part of application No. 08/640,068, filed on Apr. 30, 1996, now Pat. No. 5,829,782, which is a continuation of application No. 08/239,978, filed on May 9, 1994, now abandoned, which is a continuation-in-part of application No. 08/040,978, filed on Mar. 31, 1993, now abandoned, which is a continuation-in-part of application No. 07/878,571, filed on May 5, 1992, now abandoned, said application application number is a continuation-in-part of application No. 08/905,876, filed on Aug. 4, 1997, now Pat. No. 5,848,802, which is a continuation of application No. 08/505,036, filed on Jul. 21, 1995, now Pat. No. 5,653,462, which is a continuation of application No. 08/040,978, filed on Mar. 31, 1993, now abandoned. Continuation-in-part of application No. 09/639,299, filed on Aug. 15, 2000, now Pat. No. 6,422,595, which is a continuation of

System for obtaining information about an object in the vehicle including one or more resonators or reflectors arranged in association with the object, each resonator emitting an energy signal upon receipt of a signal at an excitation frequency, a transmitter device for transmitting signals at least at the excitation frequency of each resonator, an energy signal detector for detecting the energy signal emitted by each resonator upon receipt of the signal at the excitation frequency, and a processor coupled to the detector for obtaining information about the object upon analysis of the energy signal detected by the detector. The information obtained about the object may be a distance between each resonator and the detector, which positional information is useful for controlling components in the vehicle such as the occupant restraint or protection device. If the object is a seat, the information obtained about the seat may be an indication of the position of the seat, the position of the back cushion of the seat, the position of the bottom cushion of the seat, the angular orientation of the seat, and other seat parameters. The resonator(s) may be arranged within the object and may be a SAW device, antenna and/or RFID tag. When several resonators are used, each may be designed to emit an energy signal upon receipt of a signal at a different excitation frequency. The resonators may be tuned resonators including an acoustic cavity or a vibrating mechanical element

