



(12) **United States Patent**  
**Walker et al.**

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(54) **SYSTEMS OF USING VEHICLE SYSTEM DATA TO IMPROVE THE OPERATION OF OFF-ROAD VEHICLES**

(58) **Field of Classification Search**  
CPC . B60W 2510/0676; B60W 2510/0638; B60W 2510/0604; B60W 2530/00; B60W 2540/00; B60W 50/00  
See application file for complete search history.

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(57) **ABSTRACT**

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A system for operating a fleet of off-road vehicles may include a network. A plurality of sensors operatively associated with the fleet of off-road vehicles and connected to the network sense information related to the operation of a plurality of off-road vehicle systems. A processing system operatively connected to the network collects sensor data from the off-road vehicles; combines sensor data from the vehicle systems in accordance with a user-defined event; determines whether the collected and combined sensor data are inside or outside defined limits of the user-defined event; produces an alarm signal for a user when the collected and combined sensor data are outside the defined limits of the user-defined event; and recommends modification of the operation of vehicles for which an alarm signal has been produced. A display system operatively associated with the processing system displays at least information relating to the recommended modification.

(65) **Prior Publication Data**

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**G07C 5/00** (2006.01)  
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(52) **U.S. Cl.**  
CPC ..... **G07C 5/008** (2013.01); **G06Q 10/0639** (2013.01); **G06Q 50/30** (2013.01); **G08G 1/20** (2013.01); **G05D 2201/0213** (2013.01)

**11 Claims, 3 Drawing Sheets**

