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(54) **TRACKING, AUTO-CALIBRATION, AND MAP-BUILDING SYSTEM**

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(51) **Int. Cl.**[7] **G01C 21/26**
(52) **U.S. Cl.** **701/207**; 701/36; 701/220; 701/300; 342/357.07
(58) **Field of Search** 701/33, 36, 207, 701/220, 222, 225, 300; 342/357.01, 357.07, 357.08, 424

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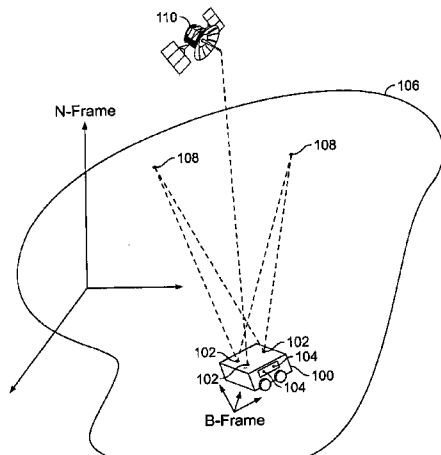
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(57) **ABSTRACT**

A navigation or motion tracking system includes components associated with particular sensors, which are decoupled from a tracking component that takes advantage of information in the sensor measurements. The architecture of this system enables development of sensor-specific components independently of the tracking component, and enables sensors and their associated components to be added or removed without having to re-implement the tracking component. In a software implementation of the system, sensor-specific software components may be dynamically incorporated into the system and the tracking component is then automatically configured to take advantage of measurements from the corresponding sensors without having to modify the tracking component.
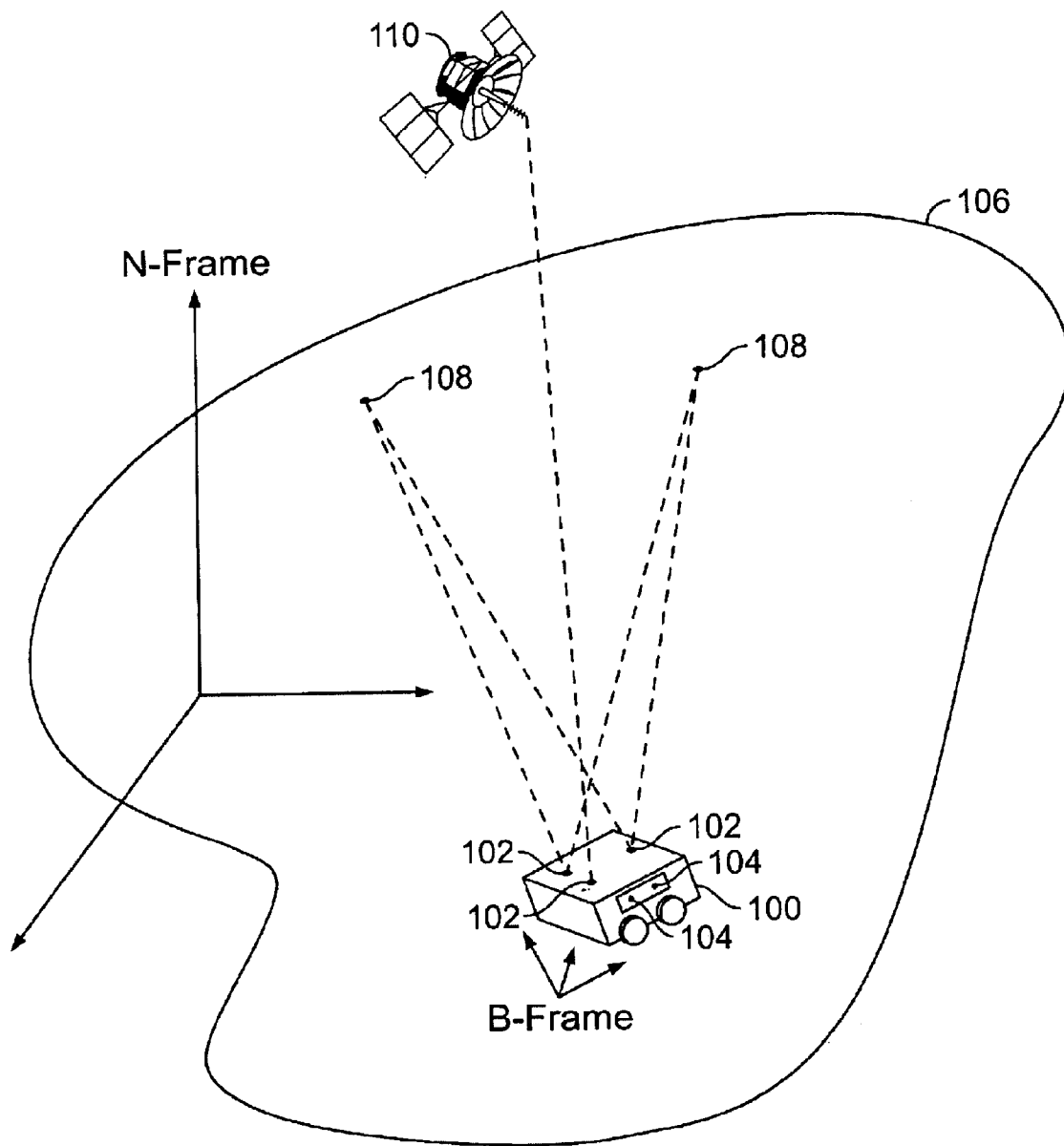
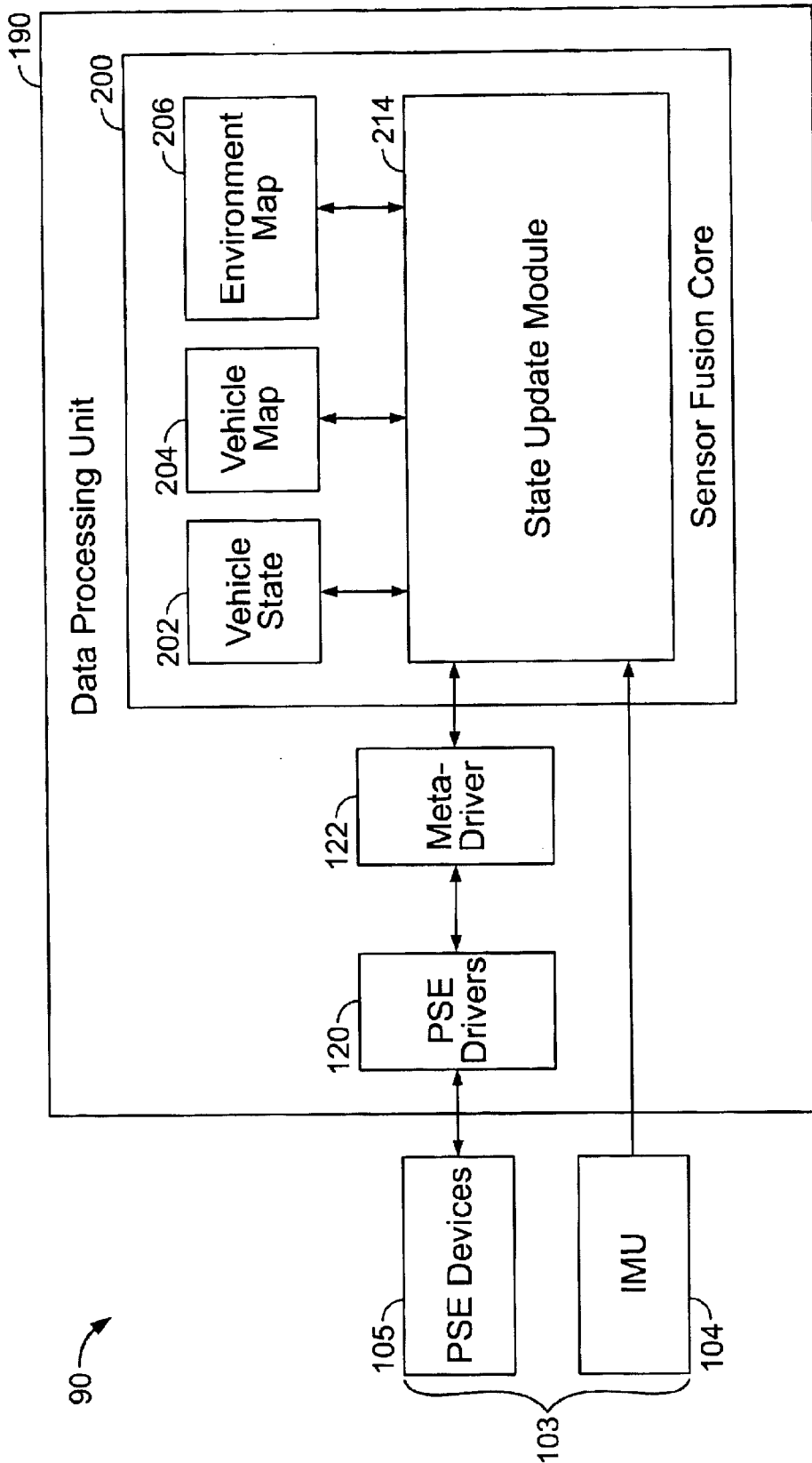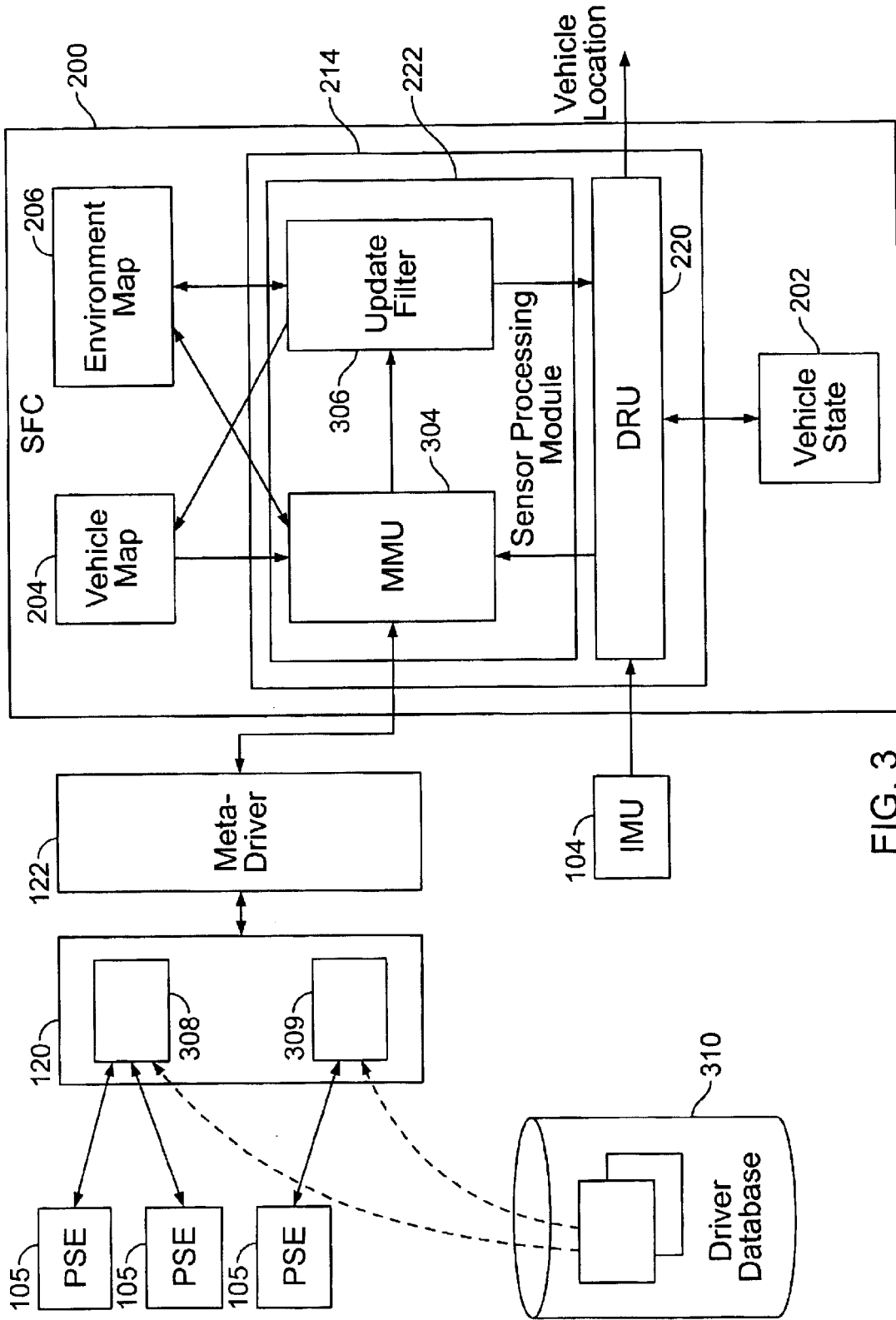**69 Claims, 12 Drawing Sheets**

FIG. 1

FIG. 2

FIG. 3

FIG. 4

DOCKET ALARM
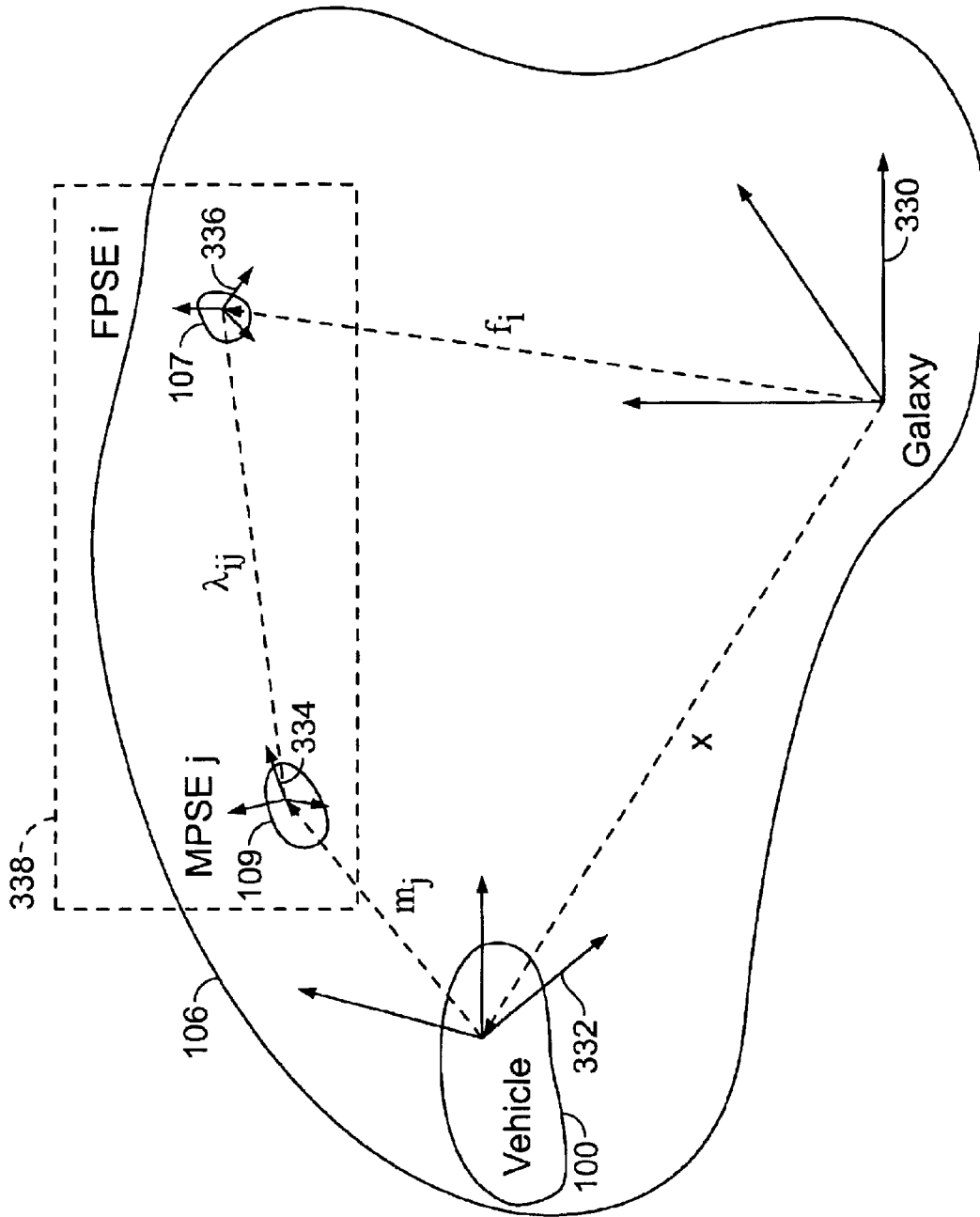
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