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Vlcek et al.

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[54] **FAST RESPONSE SYSTEM FOR A FLEET OF VEHICLES**

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[73] Assignee: **Trimble Navigation Limited**, Sunnyvale, Calif.

[21] Appl. No.: **148,998**

[22] Filed: **Nov. 8, 1993**

[51] Int. Cl.⁶ **H04B 7/26**

[52] U.S. Cl. **455/53.1; 455/54.1; 455/54.2**

[58] Field of Search **455/12.1, 33.1, 455/54.1, 54.2, 56.1, 53.1, 57.1, 58.1; 340/988, 989**

[56] **References Cited**

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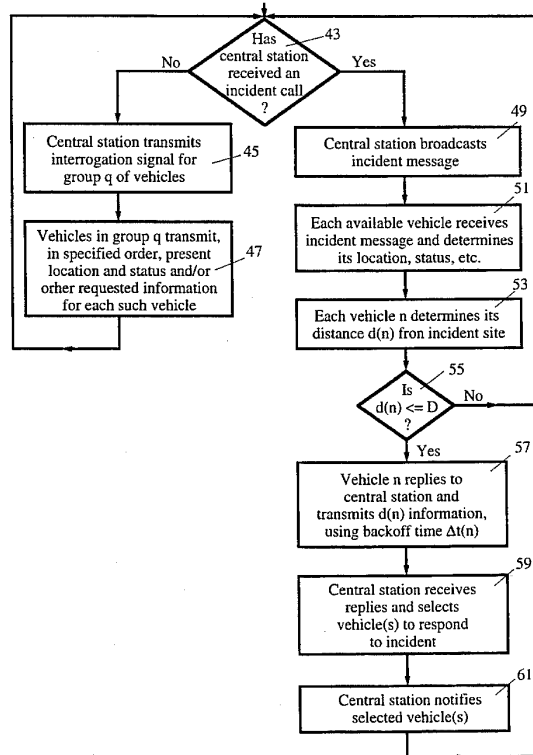
Primary Examiner—Edward F. Urban
Assistant Examiner—Thanh Le
Attorney, Agent, or Firm—John Schipper

[57] **ABSTRACT**

A method for directing a vehicle from a fleet of N vehicles,

numbered $n=1, 2, \dots, N(N \geq 2)$, to respond to a call for assistance received at a central processing station that communicates with a communications unit on each of these vehicles. The central station receives information by radio wave signals on the present location and present status of each vehicle on patrol at a sequence of times. Optionally, the vehicles may be divided into mutually exclusive groups, with each group reporting its location and status at separate times with different frequencies of reporting. An information response interval for a group includes a number of time slots, with each time slot allocated to a vehicle in the group so that no slot is empty. When the central station receives a call for assistance, an assistance message is transmitted to the fleet, specifying the site at which assistance is needed and any available information on the nature of the assistance required. Each available vehicle receives the assistance message and determines its distance $d(n)$ from the assistance site. Each available vehicle whose distance $d(n)$ is no greater than a selected distance D replies to the assistance message by transmitting its status and distance $d(n)$ to the central station with a time delay that is proportional to $d(n)$. Vehicle selection may be based upon first-to-reply and/or upon any specialized equipment or personnel training needed to respond. Vehicle location may be determined by GPS, GLONASS, Loran, or any other suitable location determination system.

34 Claims, 4 Drawing Sheets



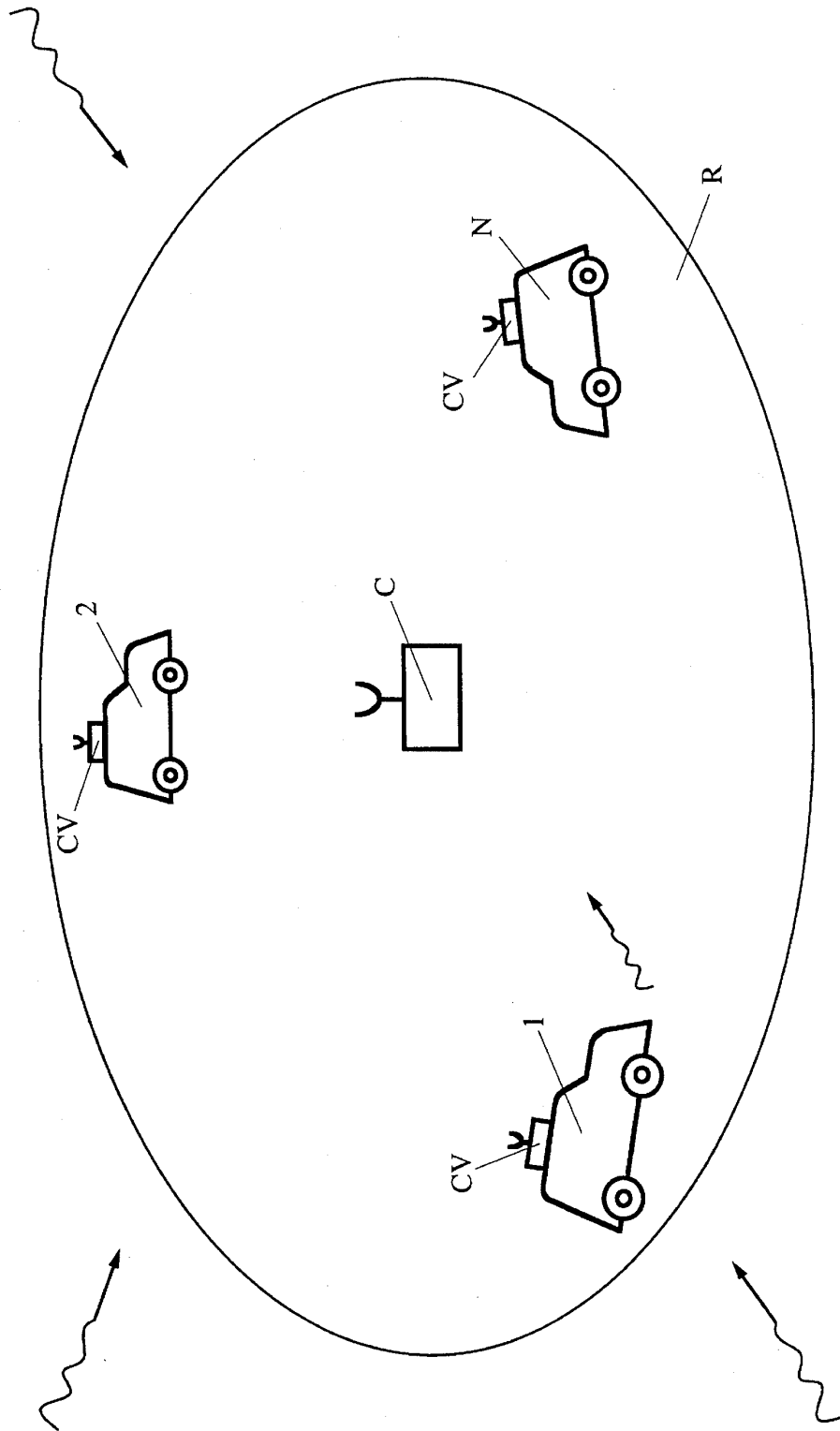


FIG. 1

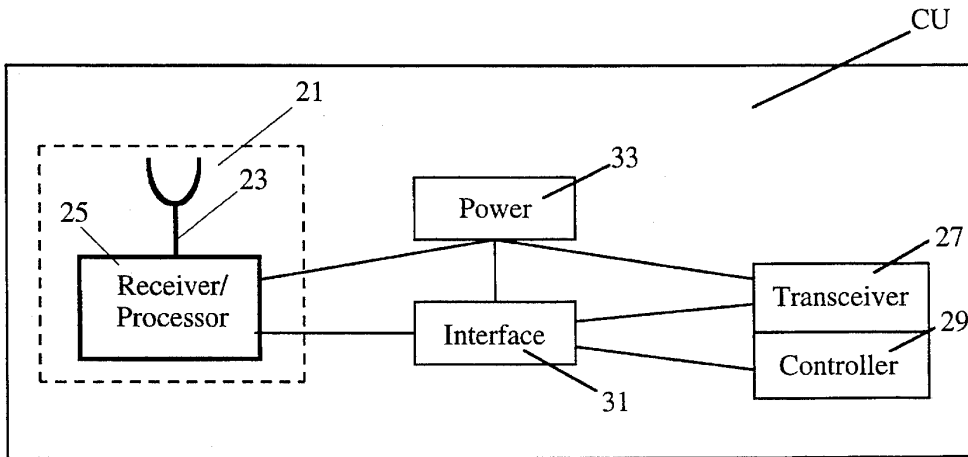


FIG. 2

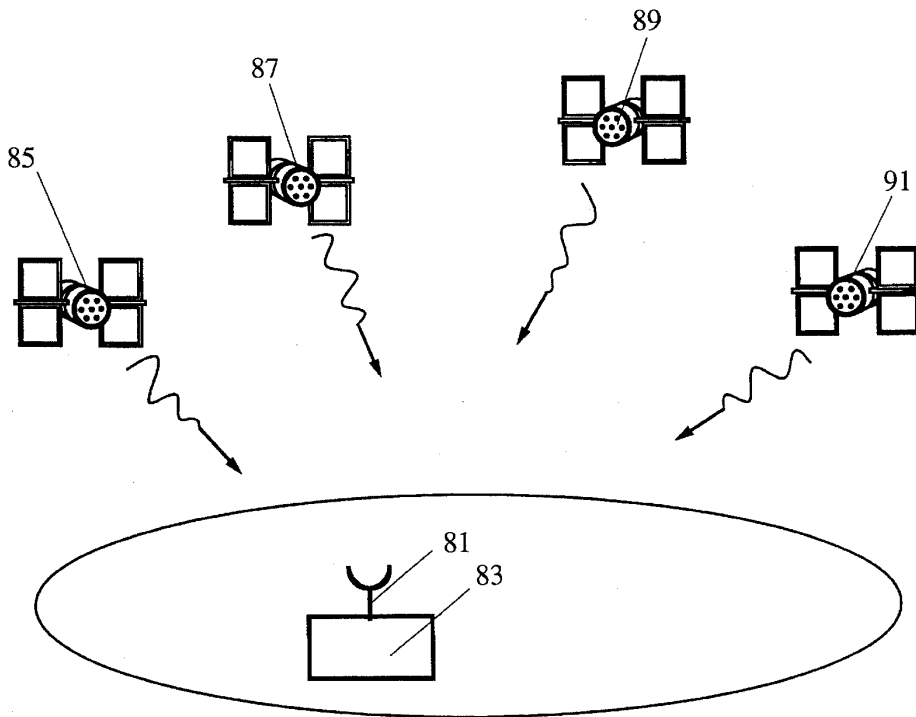


FIG. 4

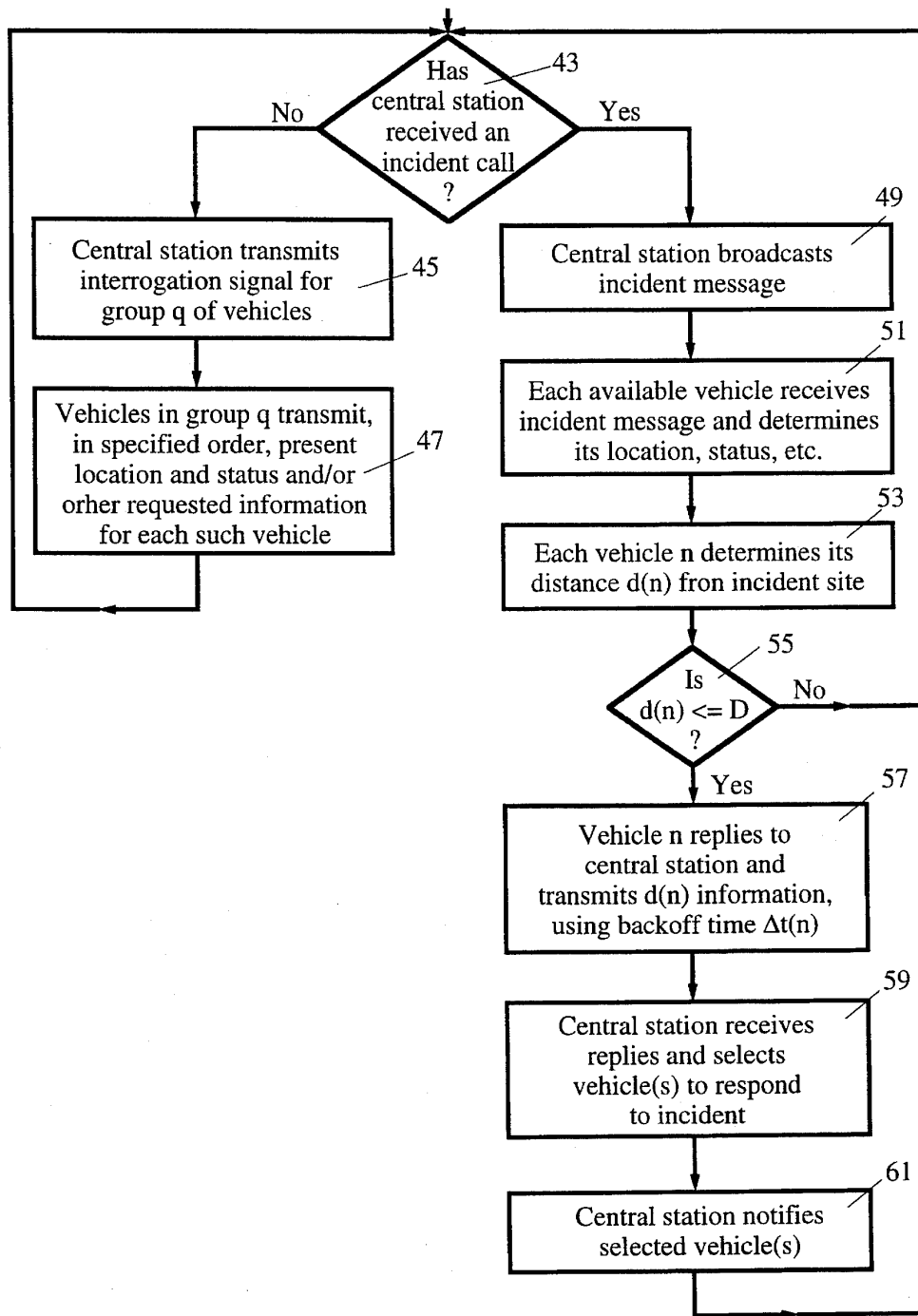


FIG. 3

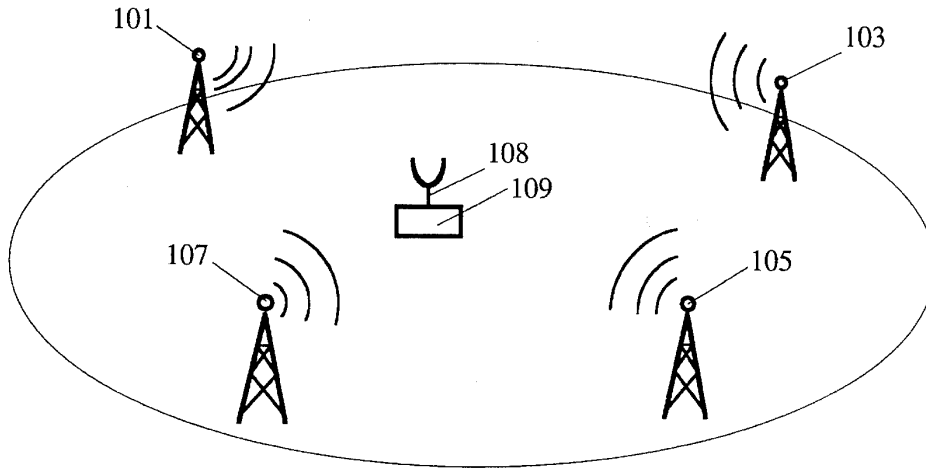


FIG. 5

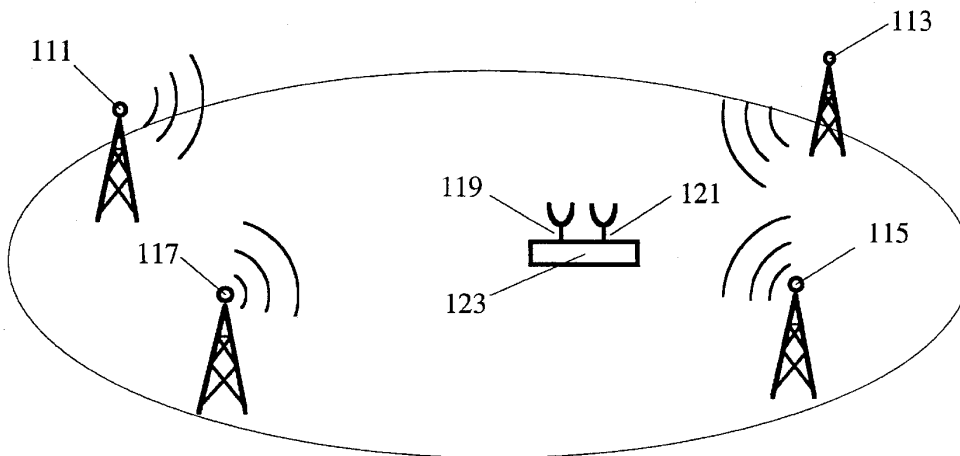


FIG. 6

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