front end of the vehicle 1 in the present embodiment, but other types of sensors may be used, and their mounting positions are not limited to the front end of the vehicle 1.

[0026]

Next, parameter setting for the automated steering control during the above-mentioned calibration process of the system will be explained with reference to the plan views in Figs. 2 to 5, the flowchart in Fig. 7 and so on.

[0027]

First, in the present embodiment, the above-mentioned post-installed type automated driving robots are installed on the vehicle 1. That is, the steering robot 2, the pedal robot 3, the gear robot, the controller 5, the GUI unit 6 and so on, which are described above, are installed on vehicle 1. Next, various specifications inherent in the vehicle 1, such as a wheelbase and so on, are input into the system from the GUI unit 6. Here, a default turning radius estimated from the vehicle specifications is also input (step S1 in Fig. 7). The input information is stored in the storage of the controller 5

[0028]

Note that the specifications of the vehicle 1 may be input as numerical values or, if the system stores a vehicle database, the vehicle type may be input. In this case, the controller 5 retrieves the vehicle specifications compatible with the vehicle type from the database based on the input vehicle type. In addition, if a maximum steering angle of the steering wheel and a minimum turning radius are known, these values are also input.

[0029]

In the present embodiment, the default turning radius is calculated by using an Expression (1) shown below that is a two-wheeled vehicle kinematics model, or the like. It is well known to study vehicle dynamics by using the two-wheeled vehicle kinematics model in a simulated manner instead of a four-wheeled vehicle kinematics model, and the default turning radius is calculated by using the two-wheeled vehicle kinematics model in the present embodiment.

$$\delta s = K\tan^{-1}(L/R) = K\tan^{-1}(\kappa L) \qquad \text{Expression (1)}$$

[0030]

Here, δs is the steering angle, K is a steering gear ratio, L is the wheelbase value, R is the turning radius, and κ is a turning curvature. The turning radius R and turning curvature κ have an inverse relationship. Note that, in a case where a steered angle of the steered road wheel, i.e., the front wheels, can be obtained and the steering gear ratio K is obvious, the default turning radius may be determined by using