applied to a road on which change in traffic volume over time is considerable, traffic is heavy, and high traffic managing efficiency is required. For example, control methods such as MODERATO (Management by Origin-Destination Related Adaptation for Traffic Optimization) control (refer to Non-Patent Literature 1), and UTMS (Universal Traffic Management Systems) control (refer to Non-Patent Literature 2) are adopted.

CITATION LIST

[NON PATENT LITERATURE]

[0004]

NON PATENT LITERATURE 1: "Manual on Traffic Signal Control, Revised Edition", edited and issued by Japan Society of Traffic Engineers (pages 16 to 18 and 83 to 87)

NON PATENT LITERATURE 2: "Development and Verification Experiment of Next Generation Signal Control Method", SEI Technical Review, March 2004, Vol. 166, pages 51 to 55

SUMMARY OF INVENTION

[TECHNICAL PROBLEM]

[0004a]

According to a first aspect, a traffic signal control apparatus is provided comprising

an acquisition unit configured to acquire an inflow traffic volume at a first intersection defined below;

an estimation unit configured to estimate an inflow traffic volume at a second intersection defined below, on the basis of the acquired inflow traffic volume at the first intersection;

an information processing unit configured to generate a signal control parameter for a first controller defined below, on the basis of the acquired inflow traffic volume at the first intersection, and generate a signal control parameter for a second controller defined below, on the basis of the estimated inflow traffic volume at the second intersection; and

a communication unit configured to transmit the generated signal control parameter for the first controller to the first controller, and to transmit the generated signal control parameter for the second controller to the second controller, wherein

first intersection: an intersection at which an inflow traffic volume can be obtained,

second intersection: an intersection at which an inflow traffic volume cannot be obtained,

first controller: a traffic signal controller installed at the first intersection, and

second controller: a traffic signal controller installed at the second intersection.

[0004b]

According to a second aspect, a traffic signal control method is provided, comprising:

acquiring an inflow traffic volume at a first intersection defined below;

estimating an inflow traffic volume at a second intersection defined below, on the basis of the acquired inflow traffic volume at the first intersection;

generating a signal control parameter for a first controller defined below, on the basis of the acquired inflow traffic volume at the first intersection, and generating a signal control parameter for a second controller defined below, on the basis of the estimated inflow traffic volume at the second intersection; and

transmitting the generated signal control parameter for the first controller to the first controller, and transmitting the generated signal control parameter for the second controller

to the second controller, wherein

first intersection: an intersection at which an inflow traffic volume can be obtained,

second intersection: an intersection at which an inflow traffic volume cannot be obtained,

first controller: a traffic signal controller installed at the first intersection, and

second controller: a traffic signal controller installed at the second intersection

[0005]

In the above-mentioned signal control methods, an inflow traffic volume to an intersection, which is used to obtain signal control parameters, is usually acquired by a vehicle detector or the like installed on a road.

The vehicle detector is desired to be installed at each of a plurality of intersections to be controlled. However, there are cases where intersections where vehicle detectors are not installed are mixed among the intersections to be controlled, depending on factors such as costs, locational conditions, or the like.