CLAIMS

[Claim 1]

A vehicle operation management system to manage at least vehicle speed, travel distance and travel time, comprising a tachograph on-vehicle device mounted on a vehicle, a management terminal provided for operation management, a management server receiving accesses from the tachograph on-vehicle device and the management terminal via a network, and a storage device,

wherein

a vehicle operation management server software to make the management server function as a management means is implemented on the management server,

the tachograph on-vehicle device comprises

a speed data acquisition unit connected with a speed sensor provided on a drive mechanism of the vehicle, and

a general-purpose terminal connected with the speed data acquisition unit,

the general-purpose terminal is a smartphone or a mobile computer excluding smartphones, which is capable of accessing the management server via a network,

in the general-purpose terminal is installed an on-vehicle device application software including a data memorization module to make the general-purpose terminal function as a transmission means to transmit the speed data to the management server at every transmission interval and make the speed data memorized in the storage device, the speed data being acquired by the speed data acquisition unit at each moment in operation,

the vehicle operation management server software includes a results data registration program,

a results data file is memorized in the storage device,

the results data registration program is the program to make the management server function as a registration means to record the speed data transmitted from the general-purpose terminal by the data memorization module in the results data file for registration,

the vehicle operation management server software includes a triple element browse program,

the triple element browse program is the program to make the management server function as a triple element browse means to display the triple element on a management terminal on the basis of the speed data recorded in the results data file, the triple element being travel distance, travel time and travel speed in one day work or one time work,

a terminal holder is fixed on the vehicle, the terminal holder holding the general-purpose terminal demountably and pretending the general-purpose terminal from falling down during the vehicle running,

the speed data acquisition unit and the general-purpose terminal are capable of transferring the speed date either by a general-purpose interface cable connection or short-distance wireless communication,

after configuring the tachograph on-vehicle device as held by the terminal holder in a vehicle, the general-purpose terminal is capable of demounted from the terminal holder and being held on another terminal holder in another vehicle to configure the tachograph on-vehicle device for the other vehicle,

the vehicle belongs to a vehicle operating company,

a multiplicity of vehicles belong to the vehicle operating company,

the speed data acquisition unit and the general-purpose terminal are mounted on each vehicle,

in the storage device are memorized a vehicle information file where vehicle information including vehicle ID of each vehicle is recorded, and a work information file where work information is recorded,

a work registration program is included in the vehicle operation management server software,

the work registration program is the program to make the management server function as a work registration means to record the vehicle ID for a vehicle used in operation of a day work or one time work,

the vehicle ID is information identifying not the general-purpose terminal but each vehicle,

the triple element browse means is the means to acquire information of the vehicle as data source from the vehicle information file and make the information displayed on the management terminal together with the triple-element, and the triple element browse program is the program to make the

management server function as the triple element browse means.

[Claim 2]

A vehicle operation management system as claimed in the claim 1,

wherein

the speed data acquisition unit has a general-purpose interface output port,

the terminal holder has a general-purpose interface connector port to be in contact with a general-purpose interface input port of the general-purpose terminal mounted thereon,

the general-purpose interface connector port is connected to the general-purpose interface output port of the speed data acquisition unit by a general-purpose interface cable.

[Claim 3]

A vehicle operation management system as claimed in the claim 1,

wherein

the general-purpose terminal has a short distance wireless receiver based on a general-purpose interface standard,

the speed data acquisition unit has a general-purpose interface transmitter based on the same general-purpose interface standard as the short distance wireless receiver of the general-purpose terminal.

[claim 4]

A vehicle operation management system as claimed in the claim 3,

the general-purpose interface transmitter and the short-distance wireless receiver are capable of data transfer without facing to each other.

[Claim 5]

A vehicle operation management system as claimed in the claim 1, 2, 3, 4,

wherein

the speed data acquired by the speed data acquisition unit is vehicle speed pulse,

the results data registration program implemented on the management server is the program to make the management

server function as a calculation means to calculate the travel speed by converting the vehicle speed pulse.

[Claim 6]

A vehicle operation management system as claimed in the claim 1, 2, 3, 4, or 5,

wherein

the speed data acquisition unit has an input port to which a signal from anther device mounted on the vehicle than the speed sensor is input,

the speed data acquisition unit is the unit to output data based on the signal from the other device together with the speed data to the general-purpose terminal,

the data memorization module makes the general-purpose terminal function as a collective transmission means to collect the data based on the signal from the other device and the speed data to transmit to the management server,

the results data registration program is the program to make the management server as a recordation means to record the data based on the signal from the other device together with the speed data in the results data file.

[Claim 7]

A vehicle operation management system managing at least vehicle travel speed, comprising a tachograph on-vehicle device mounted on a vehicle, a management terminal provided for operation management, a management server receiving accesses from the tachograph on-vehicle device and the management terminal via a network, and a storage device,

wherein

a vehicle operation management server software to make the management server function as a management means is implemented on the management server,

the tachograph on-vehicle device comprises

a speed data acquisition unit connected with a sensor provided on a drive mechanism of the vehicle, and

a general-purpose terminal connected with the speed data acquisition unit,

the general-purpose terminal is a smartphone or a mobile computer excluding smartphones, which is capable of accessing

the management server via a network,

in the general-purpose terminal is installed an on-vehicle device application software including a data memorization module to make the general-purpose terminal function as a transmission means to transmit the speed data to the management server at every transmission interval and make the speed data memorized in the storage device, the speed data being acquired by the speed data acquisition unit at each moment in operation,

the vehicle operation management server software includes a results data register program,

a results data file is memorized in the storage device,

the results data registration program is the program to make the management server as a registration means to record the speed data transmitted from the general-purpose terminal by the data memorization module in the results data file for registration,

the vehicle operation management server software includes a browse program,

the browse program is the program to make to management server function as a browse means to display the speed data of one day work or one time work recorded in the results data file on the management terminal,

a terminal holder is fixed in the vehicle, the terminal holder holding the general purpose terminal demountably and pretending the general-purpose terminal from falling down during the vehicle running,

the speed data acquisition unit and the general-purpose terminal are capable of transferring the speed data either by a general-purpose interface cable connection or short-distance wireless communication,

after configuring the tachograph on-vehicle device as held by the terminal holder in a vehicle, the general-purpose terminal is capable of demounted from the terminal holder and being held on another terminal holder in another vehicle to configure the tachograph on-vehicle device for the other vehicle,

the vehicle belongs to a vehicle operating company,

a multiplicity of vehicles belong to the vehicle operating company,

the speed data acquisition unit and the general-purpose terminal are mounted on each vehicle,

in the storage device are memorized a vehicle information file where vehicle information including vehicle ID of each vehicle is recorded, and a work information file where work information is recorded,

a work registration program is included in the vehicle operation management server software,

the work registration program is the program to make the management server function as a work registration means to record the vehicle ID for a vehicle used in operation of a day work or one time work,

the vehicle ID is information identifying not the general-purpose terminal but each vehicle,

the browse means is the means to acquire information of the vehicle as data source from the vehicle information file and make the information displayed on the management terminal together with the speed data, and the browse program is the program to make the management server function as the browse means.