CLAIMS

1. A delivery management system managing delivery of a gas container to a user who uses portable gas fuel enclosed in the gas container,

the delivery management system comprising:

a measurement apparatus configured to measure a usage amount or an amount after use of a gas container used in the user facility; an information processing apparatus; and a deliverer terminal apparatus used by a deliverer who exchanges the gas container

wherein the information apparatus receives, as a request to start an exchange, measurement apparatus identification information of the measurement apparatus in the user facility from the deliverer who goes to exchange the gas container,

the measurement apparatus corresponding to the measurement apparatus identification information receives a transmit request and obtains measurement data representing the usage amount or the amount of after use of gas, and

the information processing apparatus receives the measurement data to calculate refund amount to the user based on the received measurement data

2. The delivery management system according to claim 1, the delivery management system comprising:

a measurement apparatus for measuring the usage amount or the amount of after use; an information processing apparatus; and a deliverer terminal apparatus used by a deliverer,

wherein measurement apparatus identification information is stored in the database in association with user identification information,

the measurement apparatus or the deliverer terminal apparatus transmits deliverer identification information of a deliverer replacing the gas container, and the measurement apparatus identification information to the information processing apparatus in association, and

the information processing apparatus stores the delivery completion date for an eligible user facility in the database in association with the user based on the received measurement apparatus identification information and the deliverer identification information.

3.The delivery management system according to claim 2, wherein the measurement apparatus is a weight measurement apparatus capable of measuring weight as the amount of after use, the delivery management system obtains the weight of a gas container used at a user facility, and calculates the refund amount based on the weight, and the weight of the gas container alone or the weight of gas filled in the gas container.

4.The delivery management system according to claim 2, wherein the measurement apparatus is a flow rate measurement apparatus capable of measuring flow rate as the usage amount, the delivery management system obtains flow rate of a gas container used in a gas container at a user facility, and calculates the refund amount based on the flow rate.

5. The delivery management system according to any one of claims 2 to 4,

the delivery management system located at a user base, and comprising a gas leak sensor capable of communicating with the information processing apparatus,

wherein the database stores user information including the location of a user facility, and corresponded to the user identification information,

the deliverer terminal apparatus transmits its own location to the information processing apparatus,

the gas leak sensor reports to the information processing apparatus when detecting an abnormality,

the information processing apparatus receiving the report determines a deliverer to rush to a site based on the location of the deliverer terminal apparatus.

6.The delivery management system according to claim 5,

the delivery management system comprising an operator terminal apparatus capable of communicating with the information processing apparatus,

wherein the database stores a telephone number of the deliverer terminal apparatus as deliverer contact information,

the information processing apparatus transmits user identification information or the location of the user facility where a gas leak sensor that has reported are located, and a

telephone number or deliverer identification information of the deliverer to request to the operator terminal apparatus when determining the deliverer to request.

7. The delivery management system as claimed in claim 6, wherein the information processing apparatus causes the operator terminal apparatus to display, on the same screen, together with map information, the location of the user facility where the measurement apparatus with a detected abnormality is arranged, the current locations of the plurality of deliverers who are candidates to be requested to rush to the site, and the deliverer contact information or deliverer identification information of the deliverers,

the map information indicating the location of the user facility, the current locations of the plurality of deliverers who are candidates to be requested to rush to the site, and a priority order, and the deliverer contact information or the deliverer identification information being displayed sequentially in accordance with the priority order.

8. The delivery management system according to any one of claims 5 to 7, wherein the database stores a destination for information transmission to the deliverer terminal apparatus as deliverer contact information,

the information processing apparatus transmits user identification information or the location of the user facility where a gas leak sensor has reported an abnormality to the destination when determining the deliverer to request.

9.The delivery management system according to any one of claims 6 to 8,wherein the database stores a destination or a telephone number for information transmission to the user terminal apparatus as user contact information, the information processing apparatus receiving the report transmits the user contact information to an operator terminal apparatus or reports to the user terminal apparatus using the user contact information.

10.The delivery management system according to any one of claims 5 to 9, wherein the user is stored in the database in association with a deliverer who has a contract for delivery of the gas container, the information processing apparatus determines the deliverer to request out of deliverers including a deliverer those who are not in a contractual relationship with a user of an express destination.

11.The delivery management system according to any one of claim 1 to 10, wherein the information processing apparatus is configured to be able to communicate with a user terminal apparatus,

adds an appropriate user to a delivery candidate list based on a past delivery completion date stored in association with the user,

presents multiple candidate dates and times to the user terminal apparatus of the user added to the delivery candidate, and receives a desired delivery date from the user terminal apparatus,

adds the user to a delivery schedule list for delivery on the desired delivery date.

12. The delivery management system according to claim 11, wherein in the database stores a delivery area associated with each user,

the information processing apparatus presents multiple dates and time frames as a plurality of candidate dates to a user terminal apparatus of the user added to the delivery candidate list,

receives a combination of the date and the time frame as the desired delivery from the user terminal apparatus date,

adds the user to a delivery schedule list based on the delivery area associated with the user and the desired delivery date.

13. The delivery management system according to any one of claim 11 or 12 citing any one of claims 2 to 4, wherein the information processing apparatus receives a measurement result of the gas container from the measurement apparatus,

and deletes the user from the delivery candidate list who has a predetermined remaining amount of gas in the gas container out of the users added to the delivery candidate list.

14. A delivery management method applied to a delivery management system,

the delivery management system comprising :

a measurement apparatus configured to measure a usage amount or an amount after use of a gas container used in the user facility; an information processing apparatus; and a deliverer terminal

apparatus used by a deliverer who exchanges the gas container,

the method comprising the steps of:

receiving, by the information processing apparatus, as a request to start an exchange, measurement apparatus identification information of a measurement apparatus in the user facility from the deliverer who goes to exchange the gas container;

receiving, by the measurement apparatus corresponding to the measurement apparatus identification information, a transmit request and obtaining measurement data representing the usage amount or the amount of after use of the gas;

calculating by the information processing apparatus, a refund amount to the user based on the received measurement data.

15. The delivery management method according to claim 14, the delivery management system, furthermore, executes a step for determining an amount of payment of a cashless payment to be made to the user based on the refund amount.