Claims

1. A data collection device, comprising:

at least one processor;

a communications system communicably coupled with the at least one processor, the communications system capable of communicating with one or more gas sensing devices, over a network; and

a memory communicably coupled with the at least one processor, the memory configured to store detected concentrations of a particular gas reported by gas sensors associated with the one or more gas sensing devices,

wherein the at least one processor is configured to:

receive reports of detected concentrations of the gas from the one or more gas sensing devices in accordance with one or more predetermined schedules respectively associated with the one or more gas sensing devices;

receive an alarm from an alarming gas sensing device of the one or more gas sensing devices indicating that a detected concentration of the gas is greater than a predetermined threshold;

receive updated reports of detected concentrations of the gas automatically provided from the alarming gas sensing device at a rate faster than that provided by the predetermined schedule respectively associated with the alarming gas sensing device;

track a rate that the detected concentration of the gas at the alarming gas sensing device is increasing or decreasing; and

send a clear alarm command to the alarming gas sensing device when the tracked rate at the alarming gas sensing device indicates a decrease in concentration of the gas at a rate at which there is no safety concern.

2. The data collection device of claim 1, wherein the at least one processor is further configured to:

send a command to the alarming gas sensing device to send the updated reports at the faster rate.

3. The data collection device of claim 1, wherein the at least one processor is further configured to, in response to receiving the alarm:

send a command to one or more gas sensing devices nearby the alarming gas sensing device to send updated reports of detected concentrations of the gas at respective rates that are faster than that provided by the predetermined schedules respectively associated with the one or more gas sensing devices nearby the alarming gas sensing device; and

receive the updated reports of detected concentrations of the gas from the gas sensing devices nearby the alarming gas sensing device at the faster rates.

4. The data collection device of claim 3, wherein the at least one processor is further configured to:

determine a location of a gas leak by triangulating the received updated reports from the alarming gas sensing device and the nearby gas sensing devices based on the locations of the alarming gas sensing device and the nearby gas sensing devices.

5. The data collection device of claim 3, further comprising a display, and wherein the at least one processor is further configured to:

create and display a gas concentration map based on the received updated reports from the alarming gas sensing device and the nearby gas sensing devices and on the locations of the alarming gas sensing device and the nearby gas sensing devices.

6. The data collection device of claim 5, wherein the gas concentration map takes into account one or more of wind speed and direction, street layout, or building topology.

7. The data collection device of claim 1, wherein the tracking the rate includes receiving the tracked rate from the alarming gas sensing device.

8. The data collection device of claim 1, wherein the data collection device is a computing device at a central utility office.

9. The data collection device of claim 1, wherein the data collection device is a mobile field computing device, and wherein the at least one processor is further configured to:

poll one or more of the gas sensing devices for detected concentrations of the gas.

10. A method of gas detection, comprising:

receiving, by a processor of a data collection device, reports of detected concentrations of a particular gas from one or more gas sensing devices having one or more associated gas sensors, the reports received in accordance with one or more predetermined schedules respectively associated with the one or more gas sensing devices;

receiving, by the processor, an alarm from an alarming gas sensing device of the one or more gas sensing devices indicating that a detected concentration of the gas is greater than a predetermined threshold;

receiving updated reports of detected concentrations of the gas automatically provided from the alarming gas sensing device at a rate faster than that provided by the predetermined schedule respectively associated with the alarming gas sensing device;

tracking a rate that the detected concentration of the gas at the alarming gas sensing device is increasing or decreasing; and

sending a clear alarm command to the alarming gas sensing device when the tracked rate at the alarming gas sensing device indicates a decrease in concentration of the gas at a rate at which there is no safety concern.

11. The method of claim 10, further comprising:

sending, by the processor, a command to the alarming gas sensing device to send the updated reports at the faster rate.

12. The method of claim 10, further comprising, in response to the receiving of the alarm:

sending, by the processor, a command to one or more gas sensing devices nearby the alarming gas sensing device to send updated reports of detected concentrations of the gas at respective rates that are faster than that provided by the predetermined schedules respectively associated with the one or more gas sensing devices nearby the alarming gas sensing device; and

receiving the updated reports of detected concentrations of the gas from the gas sensing devices nearby the alarming gas sensing device at the faster rates.

13. The method of claim 12, further comprising at least one of:

determining a location of a gas leak by triangulating the received updated reports from the alarming gas sensing device and the nearby gas sensing devices based on the locations of the alarming gas sensing device and the nearby gas sensing devices; or

creating and displaying a gas concentration map based on the received updated reports from the alarming gas sensing device and the nearby gas sensing devices and on the locations of the alarming gas sensing device and the nearby gas sensing devices.

14. The method of claim 10, wherein the tracking the rate includes receiving, the tracked rate from the alarming gas sensing device.

15. A non-transitory computer-readable medium having computer program logic stored thereon, the computer program logic including instructions to cause a processor of a data collection device to:

receive reports of detected concentrations of a particular gas from one or more gas sensing devices having one or more associated gas sensors, the reports received in accordance with one or more predetermined schedules respectively associated with the one or more gas sensing devices;

receive an alarm from an alarming gas sensing device of the one or more gas sensing devices indicating that a detected concentration of the gas is greater than a predetermined threshold;

receive updated reports of detected concentrations of the gas automatically provided from the alarming gas sensing device at a rate faster than that provided by the predetermined schedule respectively associated with the alarming gas sensing device;

track a rate that the detected concentration of the gas at the alarming gas sensing device is increasing or decreasing; and

send a clear alarm command to the alarming gas sensing device when the tracked rate at the alarming gas sensing device indicates a decrease in concentration of the gas at a rate at which there is no safety concern.

16. The computer readable medium of claim 15, wherein the instructions further cause the processor to: send a command to the alarming gas sensing device to send the updated reports at the faster rate.

17. The computer readable medium of claim 15, wherein the instructions further cause the processor to, in response to receiving the alarm:

send a command to one or more gas sensing devices nearby the alarming gas sensing device to send updated reports of detected concentrations of the gas at respective rates that are faster than that provided by the predetermined schedules respectively associated with the one or more gas sensing devices nearby the alarming gas sensing device; and

receive the updated reports of detected concentrations of the gas from the gas sensing devices nearby the alarming gas sensing device at the faster rates.

18. The computer readable medium of claim 15, wherein the instructions further cause the processor to, at least one of:

determine a location of a gas leak by triangulating the received updated reports from the alarming gas sensing device and the nearby gas sensing devices based on the locations of the alarming gas sensing device and the nearby gas sensing devices; or

create and display a gas concentration map based on the received updated reports from the alarming gas sensing device and the nearby gas sensing devices and on the locations of the alarming gas sensing device and the nearby gas sensing devices.

19. The computer readable medium of claim 15, wherein the tracking the rate includes receiving the tracked rate from the alarming gas sensing device.