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(54) Title: WIRELESS MONITORING SYSTEM

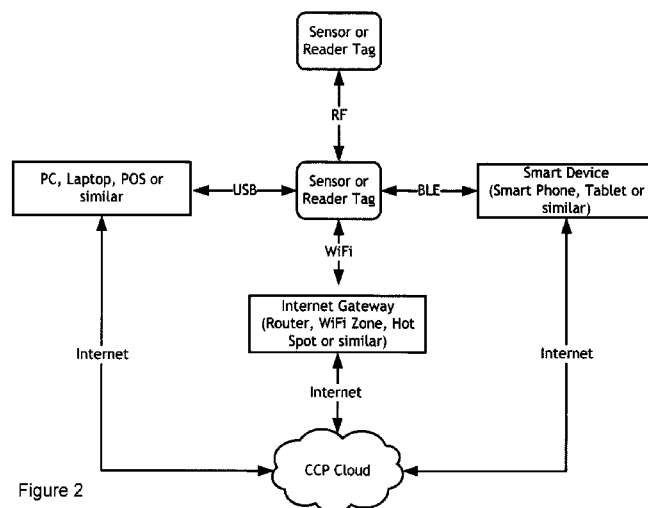


Figure 2

(57) **Abstract:** A system which creates a wireless monitoring network comprised of programmed devices and computing devices (such as a smart phone, tablet, PC, laptop, hot spot or similar) for the capture and transmission of real-time monitoring data. The system uses programmed devices that incorporate at least one sensor, a micro-controller, a data store, transmitters and receivers for multiple wireless communication methods and data input and output ports. The micro-controller may be programmed to operate the programmed device as a collector and transmitter of data from sensors in the programmed device or from other sensors connected to its input port, or as a reader and transmitter of data from other programmed devices. When a computing device is connected to a programmed device via USB, WiFi or Bluetooth (LE), the programmed device acts as a data reader providing monitoring data to the computing device. The system optimises communications and power usage to maximise network sustainability and performance by managing alternative functional states with finite state machine firmware. Monitoring data may be transmitted by programmed devices using methods which may be determined by the network itself. A computing device may interpret, manage and display data through a local application or it may transmit data to a cloud application for interpretation, management and display on a web site. Captured data is transformed into business intelligence information such as remaining shelf-life or refrigeration system efficiency.