

Aegis Remote Monitoring IoT System



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HOW IT WORKS

REMOTE MONITORING SYSTEM

Aegis Remote Monitoring IoT System consists of (i) **Sensors**, (ii) **Communication Network**, (iii) **Cloud** and (iv) **Dashboard**. The sensors are modular in design with a digital interface for different types of sensors probes such as T, RH, CO2, Differential pressure and more. **The sensor platform is modular** which makes easy addition of sensors, including any off-the-shelf sensor with customization. Several diagnostic tools have been developed to **measure the sensor health remotely** allowing the solution to be implemented on a large scale.



Fig. 1

1. **Monitored** Refrigerator or Freezer
2. **IoT Cloud** with **Ingestion, Data Processing, Storage** and **Analytics**
3. End User **Dashboard** for **Monitoring**

The sensor communicates using WiFi Protocols (IEEE 802.11b/g/n). A key feature of our WiFi communication is that it supports a myriad of encryption including WEP, WPA/WPA2, PEAP, EAP-TLS. Therefore, our sensors can easily operate in any corporate or enterprise network. On board data storage with the store-and-forward feature prevents any data loss in case of network problems. Use of WiFi eliminates the need for any gateway device. The sensors can communicate directly to the Cloud. Fig 1. shows the data flow from the sensor to the cloud.

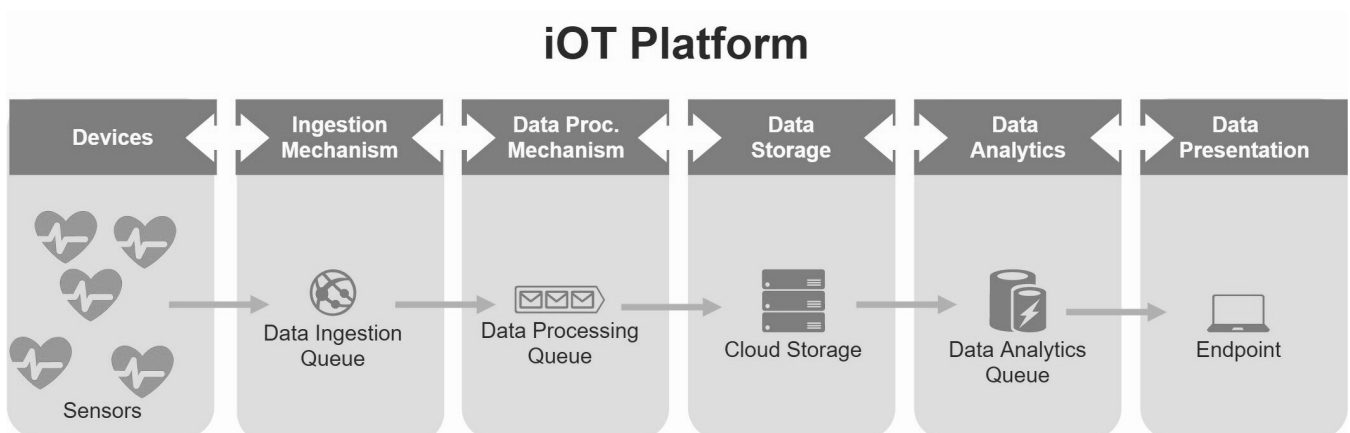


Fig. 2

The IoT cloud platform is unique because it has an **ingestion engine that supports virtually unlimited number of sensors across a distributed network over many locations**. The key elements of the IoT cloud platform is depicted in Fig 2. An additional benefit of this platform is the possibility for users to develop prediction models for a particular use case using the AI and machine learning modules.

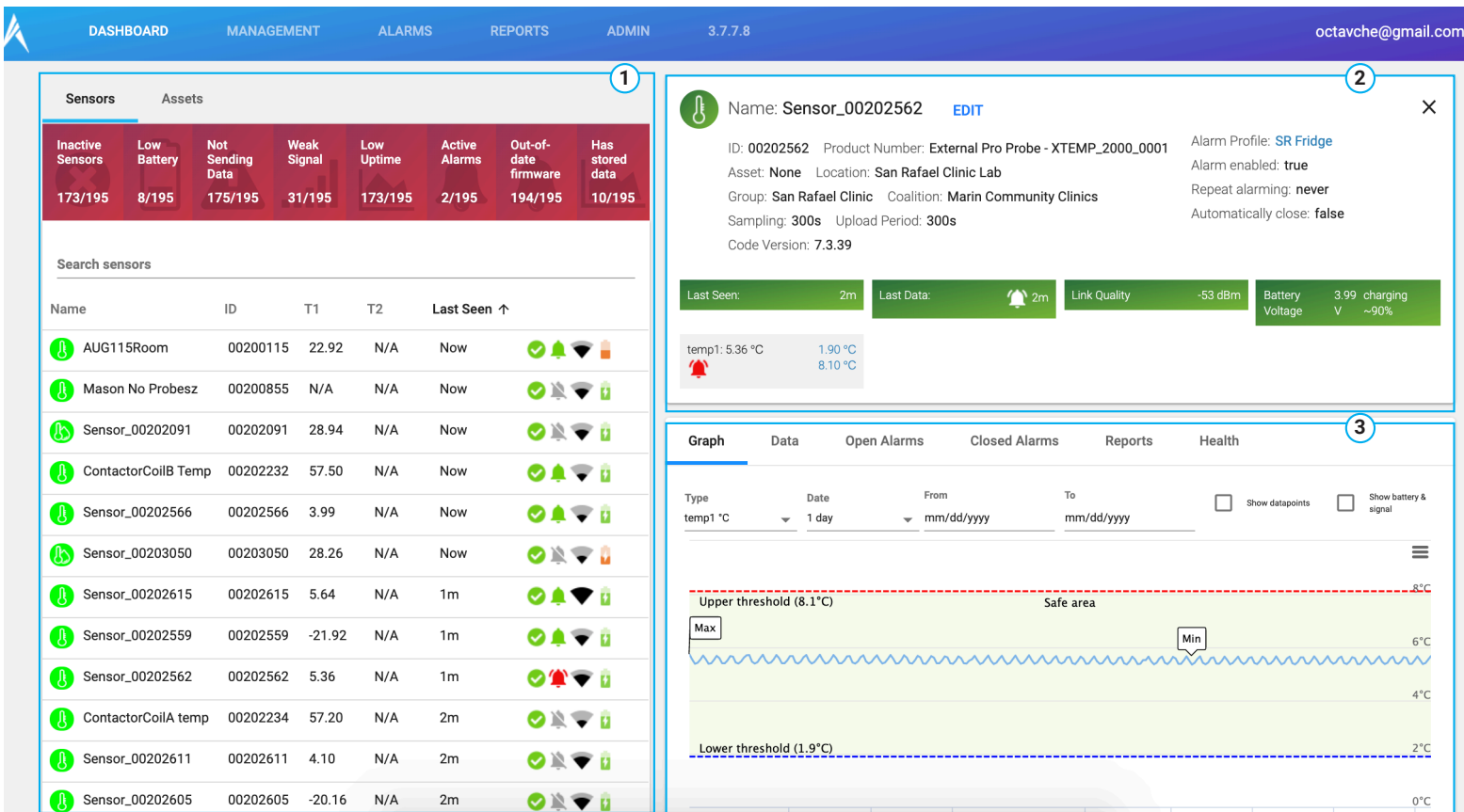


Fig. 3

1. Sensor List
2. Selected **Sensor info** and **sensor health**
3. **Sensor reading** (Graph, Data, Alarms, Reports, Health)

From the cloud the sensors data is moved to a **dashboard for data visualization, alerting and reporting**. Alerting engine includes emails and text messages with escalations. Custom reporting features, for any particular domain, can be created on the dashboard. The dashboard can be accessed from a desktop computer or a phone or a tablet. Fig 3. is an example of the dashboard with the sensor list on the left panel and sensor details on the right panel.

Another unique feature of the dashboard is to track annual sensor certifications and validation procedures. In addition the ability to visualize assets and its maintenance procedures is very useful. Custom workflows can be implemented.