**Req [20]** The system shall take the different sensor file formats and convert them to a system-standardized format for analysis.

**Req [21]** The system shall be able have new file formats inputted to allow for new file formats to be converted by the system.

**Req [40]** The system shall provide details on any alert generated by an anomaly.

**Req [45]** The system shall allow comparison between different sensors.

**Req [46]** The system shall be able to compare new incoming data to stored data.

**Req [51]** The system shall store anomaly information

**Req [52]** The system shall allow a scientist to flag an anomaly

**UPDATED REQUIREMENTS**

**General User Requirements**

All windows shall include a minimize button, a maximize button, and an exit button at the top right corner.

**Req [37]** The system shall be accessible through a web site.

**Wizard training guide**

**Req [5]** The system shall have a training guide for users on how to use the system.

The system shall display a text window on how to specify a scope.

The system shall display a text window on how to specify a pattern.

The system shall display a text window on how to save a data property.

The system shall display a text window on how to set-up an alert notification.

The system shall display a text window on how to select a sensor.

**Main Screen**

The system shall display an interactive map with sensor location.

The interactive map shall allow users to zoom in and zoom out.

The interactive map shall allow users to click regions in order to locate a specific sensor or sensor region.

The system shall allow a scientist to view a map with the locations of active sensors.

The system shall allow a scientist to search for a particular sensor based off of what type of sensor the scientist wishes to view and where the sensor is located.

**Tracking**

\*The system shall display the sensor’s name.

**Req [18]** The system shall display sensor’s location on a map.

The system shall display the type of measurement a sensor is measuring.

**Sensor**

**Req [16]** The system shall display the metadata about the sensor to the user (i.e. GPS coordinates, sensor serial number).

**Data Properties**

**Req [39]** The system shall allow data properties to be displayed in a graphical representation: line or bar graph.

**Req [15]** The system shall allow the user set the frequency of which the data stream measures (i.e. minuets, seconds, hours, microseconds).

The system shall display a list of data properties from other users and from the authorized user.

The system shall list anomalies associated with the data property.

The system shall allow an author of the data property to delete it.

**Req [1]** The system shall create an alert (email alert and/or cellular text message) when data is outside the user specified data property to inform the user when an anomaly occurs.

**Req [7]** The system shall keep track of which user initially created a property by including an author field that is associated with the data property when it is created and saved.

The system shall store the user ID that modified the data property for each property when it is modified.

**Req [8]** The system shall store a revision history of the changes done to a data property.

**Req [10]** The system shall allow a user who initially created the data property to grant other authorized users privileges to a data property.

**Req [9]** The system shall keep track of three kinds of data; data that is coming off the sensors, data properties, and anomalies.

**Req [55]** The system shall transform datasets to their appropriate units

**Req [26]**  A data property shall be composed of a scope and pattern.

**Req [54]** The system shall inform a user when units are not the identical when applying data properties

**Req [49]** The system shall allow a user to print a visual graph; line and bar graph.

**Req [38]** The system shall allow the registered user (scientist) to define and modify properties.

**Req [48]** The system shall allow a user to download visual graphs; line and bar graph

**Preference**

**Req [44]** The system shall allow the user to choose the type of notification they would like, from email or mobile alert.

**Req [6]** The system shall store who generated the data as well as the position, institution, and contact information.

**Req [31]** The system shall allow anomalies to be received as alerts on a user’s cell phone or email.

**Req [19]** System shall handle data values pertaining to weather measurements such as temperature and precipitation.

**Req [11]** The System shall allow the user to designate their properties as public or private, public meaning anybody can view the property, or private which is restricted access.

**Req [12]** The System shall allow properties to be able to be applied to collected historical data.

**Same Class**

**Req [2]** The System shall have users with restricted access that will not be able to create/edit properties.

**Req [3**] The System shall have an administrator that will be managing the data and the properties.

**Functional**

**Req [4]** The System shall require users to have their credentials validated before granting them access to the system.

**Req [13]** The System shall allow for global scopes to be used for analysis which includes a year range of the available data.

**Req [14]** The System shall allow for the user to view data before a specific event declared by the user to happen also known as before R.

**Req [22]** The system shall with the ‘after L’ include the data readings where L holds.

**Req [23]** The system shall with the ‘before L’ does not include the data readings where R holds.

**Req [41]** The System shall allow users to reuse data properties for different measurements or areas of measure.

**Req [42]** The system shall allow the ability to edit data properties.

**Req [24]** The system shall with the ‘between L & R’ includes the reading at point L but does not include the reading for point R.

**Req [25]** The system shall with the ‘after L until R’ includes the readings between the first L all the way until R before the first R otherwise the system will include all the readings after L.

**Req [27]** The system shall with ‘universality between L & R’ readings after L and before are have to hold.

**Req [28]** The system shall with the ‘absence’ pattern the readings in the scope should never hold.

**Req [29]** The system shall with the ‘existence’ pattern the readings should hold at least once in the scope.

**Req [30]** The system shall with the ‘response’ pattern present two graphs.

**Req [47]** The system shall allow a scope to be built once L is specified.

**Req [32]** The system shall allow the registered user (scientist) to view the information that states what error was caused when a problem or anomaly arises using a mobile phone.

**Req [33]** The system shall allow the registered user (scientist) to view the description of the property of an error caused when a problem or anomaly arises using a mobile phone.

**Req [34]** The system shall allow the registered user (scientist) to view the information that states the data that it’s being generated by the sensor related to an error caused when a problem or anomaly arises using a mobile phone.

**Req [35]** The system shall allow the registered user (scientist) to view the information that states what error was caused, the description of the data property, and the data that it’s being generated by the sensor related to an error caused when a problem or anomaly arises using a mobile phone. The view mode should be using a graph tool.

**Req [36]** The system shall allow the registered user (scientist) to a map with the locations of all sensors or a particular one. The data that is being collected at that particular location or the data shall also be allowed. This shall occur at the site or on the mobile device.

**Non-Functional**

**Req [17]** The system shall inform the user about the precision and accuracy of the sensor measurement that is included in the metadata associated with a sensor.

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