**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 [5]** The System shall have a wizard or training to guide users on how to use the system.

**Req [37]** The system shall be used using a web site.

**Main Screen**

The system shall display an interactive map with sensor location.

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

The system shall allow a scientist to search for a particular sensor.

**Tracking**

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

**Req [18]** The system shall display sensor’s locations.

The system shall display the type of sensor.

The system shall display the name of the user tracking the sensor.

**Sensor**

**Req [16]** The system shall display the metadata about the sensor to the user.

**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, etc.).

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

The system shall list user’s 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 when data is outside the user specified scope.

**Req [7]** The system shall keep track of which user initially created the property.

The system shall keep track of which user modified a data property.

**Req [8]** The system shall keep 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 authorize users access privileges to the 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 dataset to time units

**Req [26]** The system shall distinguish that a data property is composed of a scope and pattern.

**Req [54]** The system shall inform a user when units are not the identical when measuring 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 keep track of 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 cell phones or emails.

**Req [19]** System shall handle data values pertaining to but are not limited to: temperature, precipitation, humidity, soil moisture, and CO2 levels.

**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 back tested against any collected historical time.

**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 administrating the data and the properties.

**Functional**

**Req [4]** The System shall require authorization to validate the user’s privileges.

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

**Req [14]** The System shall allow for the user to view all 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 the ability to reuse data properties.

**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 for L but does not include the reading for 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 have two scopes.

**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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