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

This requirement was expressed by Dr. Pennington’s description of the system and how the different sensors can vary in the granularity of the measurements from microseconds to hours. This requirement was not reflected in the prototype pending the response to a formalized memo clarifying the assumptions surrounding this requirement.

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

This requirement was brought about though Dr. Pennington’s description of the data files coming from the sensors, this requirement was not reflected in the prototype pending the response to a formalized memo clarifying questions on the metadata associated with a sensor.

**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.

This requirement was described by Dr. Pennington when she described the metadata associated with the sensor, but was not reflected in the prototype pending the response to a formalized memo to answer if the scientist would care to know about the accuracy and precision of the sensor readings.

**Req [18]** The system shall display sensor locations on a map.

Dr. Pennington described the proposed system could support viewing the sensor locations on a map, this requirement was achieved in the prototype though the actions of allowing the user to view the sensors on a map while they filter out sensors they do not wish to view.

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

In the overall description of the proposed system, Dr. Pennington described the sensor network as having multiple sensors that will read different measurements such as temperature, precipitation, etc. This was accomplished in the prototype though the actions of allowing the user to filter their search by sensor type.

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

Dr. Pennington in her interview described the need to convert the different file formats coming from the different sensors in the sensor network into a common format that the system can use. This was prototyped under the assumption that the different file formats meant that the locations of types of data such as GPS data, time stamps, etc. were laid out in various ways. In the prototype the user is allowed to describe the layout of a file format, edit a saved file format or delete a file format.

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

Dr. Pennington in her interview described the need to convert the different file formats coming from the different sensors in the sensor network into a common format that the system can use. This was prototyped under the assumption that the different file formats meant that the locations of types of data such as GPS data, time stamps, etc. were laid out in various ways. In the prototype the user is allowed to describe the layout of a file format, edit a saved file format or delete a file format.

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

Dr. Salamah defined the ‘after L’ scope as displaying the data readings after and including point R. this is not very clearly marked in the prototype but is a part of the prototype design.

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

Dr. Salamah defined the ‘before L’ scope as displaying the data readings before point R. this is not very clearly marked in the prototype but is a part of the prototype design.

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

In the interview with Dr. Salamah, he specified that with the ‘between L & R’ scope the points of interest include the point L up until the point right before point R. This is not very clearly defined within the prototype but is a part of the prototype design.

**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.

Dr. Salamah in the interview brought to our attention the possibility of there being such a thing as nested scopes or in other words a sub-scope in a scope. This wasn’t very well defined within the prototype due to oversight.

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

Dr. Salamah indicated in his interview that a Data Property is composed of a scope or a point in time of interest and a data pattern. This is shown in the prototype though the allowed interaction of the user specifying a type of scope or a point in time of interest and a data pattern where they can express a condition.

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

‘Universality between L & R’ means according to Dr. Salamah that in a specified scope between some start point (L) to some end point (R) some condition must hold true. This was shown in the prototype though an example of how this data property would be presented to the user.

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

The ‘absence’ pattern as described by Dr. Salamah means that the condition should never hold over the specified scope, this is shown in the prototype as an example of how it would be presented in the system.

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

In Dr. Salamah’s interview he describes that the ‘existence’ pattern shows that a reading must hold true at least once in the scope. This is done in the prototype by showing an example of how it would be presented in the system.

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

Dr. Salamah’s description of the ‘response’ pattern defined that in order to show this data pattern there must be essentially two graphs both of which could be measuring different types of data, but both would need to have their scopes synchronized. This was implemented in the prototype exactly the same as Dr. Salamah explained.