Memorandum

## To: Dr. Pennington

## Dr. Salamah

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From: Software Development Advance Technologies

Date:

Re: Requirement Clarification

Confidential

Thank you for taking time to review our current prototype of the system. The purpose of this memo is to get further clarification on some of the features and functions that we discussed during the presentation on 4/9/2013. This will assist us in defining the requirements for the system so that we can implement the necessary functionality that will benefit your needs.

Quality control of data was mentioned during the interview. Are there set procedures or protocols that a scientist must adhere to ensure the quality of data? For example, a scientist must get a second opinion from another colleague when using a data property. Another example can be a scientist must report an abnormal data within 24 hours. With these examples in mind, how would you like the system assist scientist to ensure the quality of data?

Which data are you asking about? For the scientific data being collected, there usually are quality control procedures but these are not standardized. There should be a way in the system to specify the policies and procedures that govern its use. For instance, how often or when each property should run, similar to scheduling automatic backups. Regarding the creation/use of data properties, I cannot think of any particular procedure that would be enforceable. However, providing some kind of social media for scientists to comment on their use of a particular property in a given context would be helpful. Lastly, quality control of identified property anomalies could also include a way to specify procedures. Timeliness of response to abnormalities depends on the kind of data being collected and how the data are being used. If that could be specified somewhere, then perhaps the system could send an e-mail to the primary contact first and then to a backup contact if the primary doesn’t respond within the specified timeframe.

What type of scientist will be using the system primarily? For example, Geologist or Meteorologist.

It could be any kind of scientist. But initially, we are targeting environmental scientists.

What are some of the common frequencies when data is being measured? (Minutes, seconds, hours). Can the user specify, or is it dependent on the sensor?

The user specifies this, usually. Everything from minutes to daily is common, although there are occasions when it might be measured more or less frequently than that.

What type of sensor’s metadata is presented to the user? For example, serial number, manufacture number, sensor location, previous results.

Do you mean what sensor metadata should be presented within the proposed system? Certainly, the metadata that goes with the anomaly data should be specific about what data was being checked. This could be done a variety of ways. Duplicating all of the information about the sensor would be one way. If a person tries to reuse a property, then he will need to know all of this information in order to determine whether the property is reusable or not for his situation. I do not think previous results belongs in metadata.

What type of file formats exist that will be inputted into the system to be analyzed?

I have no clue.

What data will the user be inputting when describing a file format? Will it only by file extensions, will they describe the columns, will they input how the data is separated, or another form that we have not mention?

I have no clue. I do not know what the format is of the data that Dr. Gates is giving you. If it is a text file, then yes the user will have to specify how to parse the data. If it is already a table, then no.

Is it possible to send us several sample files of data that a typical user will use on the system?

Dr. Gates would have to address this.

If there is an error with the system will the system keep collecting data or halt with an error message and wait for user to address the error?

It should keep collecting data until it is determined whether it is an actual error with the system, or anomalous data due to some other reason.

Currently a data property can only be private or public; however, would you like the user who created a data property to grant access to certain a group of individuals? Yes

Would you like the system to keep a record of a user’s full name, title, position, institution and contact email, phone number? Yes

Would you like the system to keep track of a data property’s author, date created, date modified, and by whom? Yes

Will the system keep a history of all anomalies? Yes

Will the user have the capability to completely remove the property from the system or can they only remove it from their collection of favorites? If it is private they should be able to remove it from the system. If it has been shared in any way, then no.

The system shall run on Windows 8, 7 and Mac OS operating system.

Ok

Would you like the system to email or text the scientist when an anomaly occurs? This should be specified by each user.

Would you like the system to generate these types of visual graphs; line, bar, pie graphs? Sure that fine.

What type of information will the anomaly contain for instance the author, timestamp, patterns and scope, graph? I am unsure what you mean. An anomaly does not contain an author. The anomaly data should have metadata that includes author information and the definition of the property that is being checked. When an anomaly occurs, the system should keep track of the timestamp(s) when it occurred, and show the anomalous data in different ways. These are in the original interview and prior documents.

Will the system analyze multiple sensors at the same time, if so how should we handle different units of measurements, for example (temperature vs. wind speed). If multiple sensors are allowed will there be a maximum number of sensors.

The system will be checking multiple data streams on the same time. I do not know how you should handle that technically. I do not know if the system has a maximum number that it can check at a time – that depends on how you design it.

Will the unit of measurement be set by the user, sensor, or data file. The units are specific to a sensor.

Will the user be capable of exporting the data file from the system, if so what format should it be exported in (text, comma split delimited, or a user specified).

Yes, they should be able to export in any of the standard text formats.

Will the user be required to import their data from a predefined database or can they import it from an external location such as usb.

You are mixing formats and hardware in this question. I do not know anything about the input data formats. Whatever formats are allowed, they should be able to import from a usb or any other standard source.

When guiding the user would you like a wizard or small popups over the name of items describing the purpose of each item?

Either of these could be effective.

Will this system handle the administration of the database, or will it be handled by a separate system?

This is up to you to design.

Can any guest user create a login account or must they be invited by a current user.

Any user as long as they provide registration information.

Thank you again for your time and assistance. We look forward to hearing your response.