

Ing. Jorge Nevárez Jacobo
Aeropuertos y Servicios Auxiliares (ASA)
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México

Subject: Automated Weather Observing System Characteristics Review

Dear Ing. Nevárez:

As you requested, the MITRE team conducted a thorough review of the report prepared by ASA, dated 17 February 2014, pertaining to an Automated Weather Observing System (AWOS) being considered for installation at the potential new airport sites in the State of Hidalgo. It is important to mention at the outset that MITRE is not an expert in the acquisition of AWOS systems. Therefore, MITRE can only provide its opinion regarding the system being considered (i.e., the Vaisala AWOS III P/T model V-C).

It appears that the sensors being considered and described in the above-mentioned ASA report meet the requirements prescribed in MITRE's specifications document that was submitted to ASA in November 2013 (see Enclosure No. 5: Specifications for Automated Meteorological Observing Systems - for the three potential airport sites in the State of Hidalgo, referenced in MITRE Technical Letter F500-L14-004). We do, however, have a few questions and comments that should be addressed and clarified (see below):

1. The ASA report indicates that the data acquisition system has a storage capacity of up to one month of data. MITRE's specifications require that the system have the capability to record observations made every half-hour, 24 hours a day, and store a minimum of 36 days worth of observations. This is important because the data download technician may not be able to go to the AWOS exactly every 30 days. Having a storage capacity of 36 days allows a cushion so that important data is not lost.

Next, it is not clear what data collection and logger model is being considered for the AWOS. Therefore, please send MITRE the brochure and/or technical specifications regarding the data collection and logger model that would be installed.

2. The ASA report did not mention if the AWOS output would be provided in a sub-set of Aviation Routine Weather Report (METAR) format, as shown in Appendix A of MITRE's above-mentioned specifications document. This has been an issue in previous AWOS-related projects that MITRE has been involved in

recently. Therefore, I recommend that ASA provide a copy of MITRE's required output format and requirements to the AWOS manufacturer, and request that a sample data output be provided for MITRE's review. A key describing what each field in the sample data output represents, including units of measurement used, should also be provided.

3. It is not clear what rain gauge model is being considered. Therefore, please send MITRE the brochure and/or technical specifications regarding the rain gauge that would be installed.
4. MITRE could not find through internet searches any documentation or brochure regarding the thunderstorm detector model SA20MP that is being considered. Therefore, please send MITRE the brochure and/or technical specifications for this thunderstorm detector model.
5. Many of MITRE's AWOS specifications were not addressed in ASA's report. Once ASA reaches the point of requesting a detailed technical proposal from its chosen AWOS provider, please ensure that all of MITRE's requirements as described in the above-mentioned specifications document are thoroughly addressed in an organized manner, for MITRE's review. This will allow the MITRE team to assist ASA in the review of the AWOS technical proposal and provide feedback, which will help ensure that ASA is obtaining and installing an appropriate system.

Finally, the idea of reconfiguring the weather station currently owned by ASA by replacing some sensors with new sensors causes MITRE very much concern. MITRE does not have any experience in the use of existing systems that have been modified. Problems could arise that could result in the loss of data, or data inconsistency and inaccuracy, which would delay MITRE's Hidalgo-related airport work or undermine the credibility of the results. Due to the seriousness of the Hidalgo aeronautical studies and schedule sensitivities, it is the opinion of MITRE that modifying an existing or used system introduces the risk for operational complications and data issues. We strongly recommend the purchase of new devices, instead of "patching" existing models. Besides, all sites should use the same device, to ensure rapid comparative analyses.

Please send me an e-mail confirming that you received this letter. Also, please send me your response to this letter by 24 March 2014.

Do not hesitate to contact me if you need any clarification or any other assistance.

Sincerely,



Ing. Robert W. Kleinhans
Project Technical Coordinator

cc:

Gilberto Manuel Vázquez Alanís (ASA)
Dr. Bernard Lisker (MITRE)