MEETING MINUTES

PLANNING FOR TRANSITIONING OPERATION OF THE SCADA SYSTEM TO THE GOVERNMENT AND SUBSEQUENT GOVERNMENT OPERATIONS CAMP STANLEY STORAGE ACTIVITY, TEXAS

Date: Thursday, 16 August 2007
Time: 10:00 A.M. – 12:00 P.M.
Place: Camp Stanley Storage Activity (CSSA)
Subject: Transitioning and Planning of the Government Operation of the SCADA system
Attendees:

Attendee	Organization	Phone
Tom Tijerina	CSSA Engineering	210-336-2372
Glare Sanchez	CSSA Environmental	210-295-7453
Ron Reese	CSSA IT	210-462-6124
Hector Davila	CSSA IT	210-383-7171
Ronnie Pfeil	CSSA IT	830-816-2393
Charlie Lopez	CSSA Communications	210-295-7454
Matt Lyman	COI - CSSA IT	210-295-7330
Chris Beal	Portage - CSSA Environmental	210-336-1171
Brian Vanderglas	Parsons-Austin: Project Manager	512-719-6059
Mike Stimets	Parsons-Austin: IT	512-719-6802
Kyle Caskey	Parsons-CSSA: Construction Manager	210-204-8529
Scott Pearson[1]	Parsons-Austin: Task Manager	512-719-6087

[1] Minutes prepared by Scott Pearson, Parsons-Austin.

The agenda and presentation materials are included as Attachment 1. A list of instrumentation that requires routine maintenance is included as Attachment 2.

INTRODUCTIONS AND PURPOSE

The meeting was opened with brief introductions. The purpose of the meeting was to discuss the status, roles, and responsibilities associated with government ownership and maintenance associated with the SCADA projects.

SCADA TESTING AND ACCEPTANCE

Government acceptance of the SCADA system will be a two-tiered approach consisting of a pre- and post-final inspection. It is anticipated that the government acceptance will be based upon several criteria including construction and operational aspects, server/workstation functionality, and data report format and content. Parsons anticipates being ready for the inspections in September 2007.

Tom Tijerina would like CSSA personnel to have the opportunity to "test drive" the system for two weeks and be allowed to provide comment and input. To facilitate this, SCI will set up user accounts on the SCADA system that will use the same network login ID that the employees use to access the CSSA LAN. *Note: CSSA IT provided the network IDs to Parsons and SCI earlier that morning.* SCI will perform the appropriate programming to implement the access rights to the system. Most users will have "read only" rights to the system, with "administrator" rights being reserved to those who will maintain or be allowed to manipulate set points.

Once the network IDs are established, Kyle Caskey will spend a few moments with each user to demonstrate the system and show employees the key features of the SCADA program. Demonstration times will be scheduled with the key users in Public Works, Environmental, Administration, and Security. This "hands on" tutorial will provide the user with the general skills to navigate and evaluate the system prior to government acceptance. A brief introduction to the on-line Operations and Maintenance (O&M) Manual will be included. CSSA will consolidate all the comments and suggestions, probably via email. The use of a "whiteboard" on the system to post comments was suggested, but may not be possible on the system.

ANTICIPATED FUNCTIONS TO SUPPORT THE SCADA SYSTEM

Once the SCADA system is turned over to the government, CSSA will assume the responsibilities of daily operation and routine maintenance tasks. These items include the following:

Computer Maintenance/Troubleshooting

Computer maintenance will include system optimizations, software updates, virus protection, data archival, and maintaining the fiber optic and wireless networks. At its current sampling rate, SCI estimates the current storage space can accommodate approximately one year of data before the storage capacity is full. Therefore, periodic data back-ups will be required to prevent overwriting non-archived data. *Note: Consider using a Maximo work order to generate reminders to back up historian, or provide alarm when one month of storage remains.*

Occasionally, field devices (RTUs) will be need checking for fiber optic or wireless VHF connectivity. Other times, either the workstations or server require re-booting to establish connectivity. The goal is to establish a CSSA point-of-contact (POC) that can internally maintain or troubleshoot the minor problems before calling SCI for service calls. Undoubtedly, an internal POC can respond quicker than placing a service call for SCI technical support.

Instrument Maintenance and Calibration

A few instruments will require periodic maintenance and calibration. Primarily, these instruments are the dissolved oxygen, pH, and the chlorine analyzer associated with the wastewater treatment plant (WWTP), water level transducers in monitoring wells, weather stations, and the chlorine analyzers at the well CS-1 and Building 54. A list of instrumentation that requires periodic maintenance is included in Attachment 2.

Customization/Programming

Those employees with "administrator rights" will have the ability to make changes to the server and work stations. As an example, the site-specific screens for each SCADA location can

be "tweaked" to better fit the needs of CSSA. All programming functions reside on the SCADA server in Building 2, therefore all changes made at server are automatically updated to the workstations. Limited programming by CSSA can also be expected to enhance already existing functions or adding new data output to the site-specific screens.

Data Extraction and Reports/Trends

Besides the capability of observing real-time data, the other powerful function of the SCADA system is the analysis of historical data. The data that resides on the historian SQL server is available at any workstation by using the MS Excel "Historian add-on" function. By utilizing this function, the historian data is accessible to all users with a general familiarity with MS Excel for analysis and graphing SCI will be providing ten, pre-defined reports that have been requested by CSSA. However, this is only the tip of the iceberg for analyzing the data in ways that are not even conceived as of yet. It is anticipated that various requests from Engineering, Environmental, or Public Works will require additional data analysis, reporting, or charting to make informed decisions. Therefore the ability to retrieve and manipulate this data as an "in-house" function is recommended.

Maintaining/Customizing Alarm Setpoints and Notifications

Parsons has provided the initial set points (high and low alarms) and the corresponding notifications for most instruments attached to the SCADA system. The notification of an alarm condition comes in two forms: visible alarms on the server and automated dial-out notifications to pre-defined recipients. Until we have more experience with the actual operational parameters of the items monitored, it is anticipated that a high frequency of nuisance alarms will occur because the notifications are set too high or low. The ability to modify these setpoints both in the SCADA system and the Win-911 dial-out software will be a necessity to maintaining the appropriate level of alarm notifications that truly require corrective action. During the first couple weeks of testing, the Win-911 will notify Kyle Caskey only so that Parsons can have a chance to filter out some of the most persistent alarms.

Maintaining/Customizing Maximo Interface/Work orders

Much like maintaining the alarm functions of the SCADA system, CSSA will also want to be able to customize the integration between SCADA and Maximo using the CBM-Max software. This integration will occur during mid-October 2007, and will include training on how to manipulate the software and customize the work orders deemed necessary. Currently, the proposed integration of SCADA into Maximo is a smaller subset of entire system instrumentation, and will only create work orders for the most critical of components. However, CSSA should be able to develop the ability to modify or add new integrated work orders that originate from SCADA. CBM-Max will be installed on a separate rack-mounted server to be purchased by CSSA in the near future.

GOVERNMENT OWNERSHIP AND MAINTENANCE

Responsible Entities

After acceptance of government ownership, both Parsons and CSSA share the opinion that one CSSA POC should be responsible for maintaining the SCADA system. That person should be able to perform or coordinate support to accomplish the SCADA tasks described in the

previous section. The consensus is the most logical person would be a member of the IT group at CSSA. Thus far, a POC has not been determined. CSSA will make that decision internally at a later date.

Man-hour Estimate for SCADA Maintenance

As provided in Attachment 1, Parsons provided an estimate of man-hours to maintain/operate the SCADA and CBM-Max systems on a monthly basis. This estimate was prepared consulting both SCI (systems integrator) and Parsons IT personnel who are very familiar with maintaining computer networks. For the tasks previously described, those hours ranged from 8 to 20 hours per week (32 to 80 hours per month). For this presentation, those ranges were estimated 11 hours per week (44 hours per month) as shown in Attachment 2. Of these estimated hours, as much as 12 hours per month are likely associated with field equipment calibrations, troubleshooting, and technical support that will most likely be performed by Eli Wright. The remaining 32 hours per month are primarily IT POC functions, or their designee.

Everyone recognized the difficulty in trying to accurately estimate the number of hours that will actually required to maintain the system. Generally, it was agreed that the level of effort in the beginning will be significant, and is expected to decrease to a level of routine maintenance over several months once the system, alarms, work orders, and reports are "tweaked" to CSSA's satisfaction.

Parsons and SCI Support

As part of their contract, SCI is tasked with providing 200 hours of technical support directly to CSSA. Those hours are intended for non-warranty work, and include programming/customization, additional training, report generation (if needed), and troubleshooting in general. The CSSA POC will be responsible for contacting and coordinating the technical support implementation with SCI, and tracking their support hours.

Using the SCI pool of hours to make site visits to re-boot servers and workstations will not make for good use of those hours, therefore everyone recognized that minimizing those types of calls would be in the best interest of CSSA. To make efficient use of the service hours, SCI has recommended that it is generally more efficient to make one service call to make 5 repairs versus 5 separate service calls. So if non-critical items can be pooled into one visit, it would extend the life of the service agreement.

Between TO 0022 and TO 0190, Parsons also has a pool of 240 technical support hours to assist with the ownership transition period. Parsons has proposed that CSSA use those hours at the start-up for the bulk of customizations, data extraction, and reporting to the extent of their capability. Upon government acceptance of the system and conveyance of the system, these hours could be tapped for Parsons to provide significant support to the CSSA designated SCADA POC until the full list of responsibilities for the SCADA POC is better understood. These services would generally include resetting alarm setpoints and dial-out notifications, minor modifications to workstation screens, and editing or creating custom reports using the MS Excel add-in functionality. This should help reserve the SCI support hours for more major revisions such as additional programming, additional screens, and instrumentation and connectivity issues.

Since the SCADA-Maximo integration will not start until near the end of the task order period-of-performance (POP), a previous meeting (August 6, 2007 – TO 0027) suggested the

POP extensions of the SCADA task orders. To fully utilize these support hours (assume 6 months at 40 hours per month), the POP extensions should conclude the projects on or before March 31, 2008.

OTHER ISSUES

Printers

At some point, it will be desirable to have printer(s) associated with the SCADA network. Since the SCADA system operates on an independent network, it cannot share with existing CSSA network printers. Either each workstation can be equipped with a printer, or they can share a network printer to be located at Building 2. CSSA will look into their options next fiscal year.

Fiber Optic

Parsons mentioned that the fiber optic link between Buildings 44 and 45 was not operational (prior construction damage), and therefore communication to the Building 45 RTU is not available. SCI has spent significant time trying to identify a viable pair of fiber to that Building. While testing with a laser light indicates potential connectivity, the signal strength is not sufficient for actual communication. Charlie Lopez said that he would look into getting a fiber connection run from another part of the building back to the RTU.

This topic evolved to a discussion regarding the overall CSSA fiber network. The SCADA system is almost exclusively using the multimode (MM) fiber pairs. Singlemode (SM) fiber pairs are also present at the base. Hector Davila indicated that SM is generally preferable to MM since it can transmit data for much longer distances. Tom was concerned that there might be some data reliability/accuracy issues if we are not SM fiber. Hector indicated that the data is not corrupted, just that the signal is weaker using a MM network. Hector also asked if the RTU network switches were using either lasers or LEDs as the light source. Laser signals can travel for much greater distances than LED light sources. Hector noted that MM runs are limited to about 500 meters.

Note: Scott Pearson checked the manufacturer specifications of the fiber switches used. SCI installed N-TRON switches (models 306FX2, 900B/900N, 908TX, and 908 FX). These models are all use LED light sources, and according to the manufacturer, are capable of MM transmissions up to 2,000 meters (2 kilometers). Generally, the fiber optic runs between SCADA RTUs are well below 500 meters, except for Buildings 44 to 45, B44 to B289, and B289 to B201. These runs range between 500 and 1,000 meters. More information regarding the particular network switches used can be found at:

http://www.n-tron.com/pdf/300SeriesManual.pdf

http://www.n-tron.com/pdf/900SeriesMan.pdf

ACTION ITEMS

Parsons

- *Work with SCI to establish network login IDs that would allow CSSA personnel to test-drive the system.*

- *Kyle Caskey will provide individual tutorial lessons to introduce the SCADA system to CSSA users.*
- *Parsons will utilize TO 0027 and TO 0190 technical support hours to help make a smooth transition to CSSA ownership/operation.*

CSSA

- *CSSA will identify a single POC to coordinate the operation of the SCADA system and CBM-Max integration.*
- *Run new fiber at Building 45 from alternative location within building to RTU.*
- *Consolidate notes and comments on the use of the SCADA system after the "test drive" and provide to Parsons and SCI.*
- *Look into options of equipping SCADA server and workstations with printers.*

ATTACHMENT 1

MEETING AGENGA, SIGN-IN SHEET, AND HAND-OUTS

DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, RRAD
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

Agenda for Technical Interchange Meeting
SCADA and Maximo Integration and Support
at
Camp Stanley Storage Activity – Boerne, Texas

Time: Thursday, August 15, 2007; 10:00 am to 12:00 pm

Place: Camp Stanley Storage Activity, Boerne, Texas, Conference Room

Proposed Order of Discussion

Date & Time	Topic
10:00 am – 10:30 am	***SCADA Testing and Acceptance*** • *Field Equipment* • *Computer Equipment* • *Software Interface* • *Alarm Testing and Notifications* • *Reports*
10:30 am – 11:00 am	***Anticipated Functions to Support SCADA System*** • *Computer Maintenance/Troubleshooting* • *Customization/Programming* • *Data Extraction and Reports/Trends* • *Maintaining/Customizing Alarm setpoints and Notifications* • *Maintaining/Customizing Maximo Interface/Workorders*
11:00 am – 11:30 am	***Government Ownership and Maintenance*** • *Responsible Entities* • *Estimated Man-hours* • *Types of Anticipated Maintenance* • *Parsons and SCI Support*
11:30 am – 12:00 pm	***Roundtable Discussion of Implementation*** • *Other*

CSSA SCADA PROJECTS
SUBJECT: SCADA/Maximo Integration and Maintenance
DATE: August 16, 2007

SIGN-IN SHEET

NAME	ORGANIZATION	LOCATION	PHONE	E-MAIL
Scott Pearson	Parsons	Austin	512 719 6087	
Brian Vandegas	Parsons	Austin	512 719 6059	brian.vandegas@parsons.com
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Kyle Caskey	PARSONS	CSSA	704-8529	KERRY.K.CASkey@PARSONS.Com
Mike Stimets	Parsons	Austin	512-825 4282	mike.stimets@parsons.com
Scott Pearson	PARSONS	Austin	512-719-6087	William.Scott.Pearson @parsons.com

CSSA SCADA PROJECTS
SUBJECT: SCADA/Maximo Integration and Maintenance
DATE: August 16, 2007

SIGN-IN SHEET

NAME	ORGANIZATION	LOCATION	PHONE	E-MAIL
Chris Beal	CSSA / Portage		210 336-1171	bealc@enviroDept.NET
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Ronnie Pfeil	CSSA / IT		~~210~~ 830 916-2343	ronnie@pjiWORKS.com

Description and Monthly Monhour Estimate for Maintaining CSSA SCADA System

	General	Estimated Hours per Month	Description
System Maintenance	Maintaining Server and Workstations	4	Software Updates, Patches, Virus Protection, Performance Optimization, Hardware Configurations
	Historian Database Maintenance and Archival	2	Monthly backup of data
	Communications / Networking	3	Maintain and troubleshoot fiber optic, Ethernet, and VHF wireless networks
	Alarms and Notifications	3	Maintain and adjust alarm set points in SCADA server and Win-911 call-out notifications. Modify, add, or delete alarm notifications as necessary. Respond to SCADA system alarms as warranted.
	Technical Support with SCI	4	Work with SCADA integrator for technical support for those activities beyond the job description.
Field Equipment Maintenance	Field Equipment Troubleshooting	4	Investigate and assess malfunctioning field equipment and coordinate technical support or service from SCADA integrator.
	Calibration and Verification	4	Verify instrumentation operation and perform routine maintenance or calibration as needed.
	Technical Support with SCI	4	Work with SCADA integrator for technical support for those activities beyond the job description.
Data Analysis	Reports and Trends	8	Prepare monthly reports for Engineering and Environmental. Also includes modification or development of existing or new reports as requested.
Maximo Integration	Maintain CBM-Max Server	2	Software Updates, Patches, Virus Protection, Performance Optimization, Hardware Configurations
	Maintain CBM-Max software	4	Add, delete, or modify threshold limit values, timers, job plans, and work orders for automated integration into Maximo.
	Technical Support with Matrikon	2	Work with CBM-Max developer for technical support for those activities beyond the job description.

Estimated Hours per month: **44**
Average Hours per week: **11**

ATTACHMENT 2

INSTRUMENT MAINTENANCE SCHEDULE

Maintenance Schedule for SCADA Instruments Requiring Calibration or Verification

Location	Instrument	Maintenance	Frequency	Responsible Division
WWTP	Chlorine Analyzer	Calibration Check	Once per week	Public Works - Eli Wright
		Membrane Replacement	Every 6 months	
		Electrolyte Replacement	Every 6 months	
	pH	Calibration Check	Once per week	
	Dissolved Oxygen	Clean Sensor	Once per week	
		Calibration Check	Once per week	
		Membrane Cleaning	Check Once per month. Clean when visibly soiled	
		Membrane Replacement	When cleaning ineffective	
		Cathode Cleaning	When visibly soiled	
		Electrolyte Replacement	Every 12 months	
Well CS-1	Chlorine Analyzer	Calibration Check	Once per week	Public Works - Eli Wright
		Membrane Replacement	Every 6 months	
		Electrolyte Replacement	Every 6 months	
	Transducer	Confirm Connectivity at HMI	Quick Trend once per day during normal SCADA operation	
		Reference Level Check	Once per week	
		External Power Check	Once per week	
Well CS-9	Transducer	Confirm Connectivity at HMI	Quick Trend once per day during normal SCADA operation	Public Works - Eli Wright
		Reference Level Check	Once per week	
		External Power Check	Once per week	
Well CS-10	Transducer	Confirm Connectivity at HMI	Quick Trend once per day during normal SCADA operation	Public Works - Eli Wright
		Reference Level Check	Once per week	
		External Power Check	Once per week	
Building 54	Chlorine Analyzer	Calibration Check	Once per week	Public Works - Eli Wright
		Membrane Replacement	Every 6 months	
		Electrolyte Replacement	Every 6 months	

Maintenance Schedule for SCADA Instruments Requiring Calibration or Verification

Location	Instrument	Maintenance	Frequency	Responsible Division
CS-MW6-LGR, BS, CC	Transducer	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Reference Level Check	Once per month	
		External Power Check	Once per month	
CS-MW9-LGR, BS, CC	Transducer	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Reference Level Check	Once per month	
		External Power Check	Once per month	
CS-MW10-LGR, CC	Transducer	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Reference Level Check	Once per month	
		External Power Check	Once per month	
CS-MW12-LGR, BS, CC	Transducer	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Reference Level Check	Once per month	
		External Power Check	Once per month	
CS-MW16-LGR, CC	Transducer	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Reference Level Check	Once per month	
		External Power Check	Once per month	
MW16 Weather Station	Weather Station	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Download CR-10X	Once every three months	
AOC-65 Weather Station	Weather Station	Confirm Connectivity at HMI	Quick Trend once per week during normal SCADA operation	Environmental
		Download CR-10X	Once every three months	
Building 91	Humidity Sensor	Calibration Check	Every 12 months (requires special kit)	Engineering