



Systems & Software, Inc.



Augusta Utilities Department

**Advance Metering Infrastructure and
Meter Data Management
Statement of Work**

Document Version 1.4

1/14/2025

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Revision History

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08/01/2024	1.1	Temetra Integration solution removed	Michael Lamontagne
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1. EXECUTIVE SUMMARY

This Statement of Work (SOW) defines the work to be performed by Systems and Software Inc. (herein referred to as "S&S") for Augusta Utilities Department, (herein referred to as "Customer" or "AUGUSTA UTILITIES DEPARTMENT"). This SOW includes a high-level timeline and other Terms and Conditions specific to the services requested by Customer.

This document serves as the complete understanding, between Customer and SmartWorks, as to what the current Statement of Work entails. SmartWorks will use this document as a reference for the configuration and implementation of SmartWorks Compass (herein referred to as the "SmartWorks Software"). This document will also be used by Customer to determine if the SmartWorks Software provides the functionality requested and agreed to, per this document. If there are any issues during the project lifecycle, this document will be used to determine if the issue is a configuration/development issue or if the issue was not included as part of the current Statement of Work.

Changes to this document shall be made through a Change Management Process.

The implementation project will accomplish the following high-level objectives:

- 1) Install, configure and implement the SmartWorks Software as defined in this document.
 - a) The SmartWorks Compass solution will be installed at the Systems & Software Hosting Facility.
- 2) Initiate within SmartWorks Software the collection and management of register and interval read data from AMI Meters.
- 3) Integrate with
 - a) AMI Vendor 1 to import register and interval reads, import meter events/alarms, and initiate remote actions
 - b) S&S CIS to import meter and location data and provide billing determinants, Work order information
 - c) Capricorn Customer Web Portal to display customer billing data
- 4) Facilitate the pass through of real time requests for remote disconnect and reconnects to front end AMI solution to perform action
- 5) Deliver system training designed to develop Customer competency with the use and configuration of the SmartWorks Software.
- 6) Provide support during User Acceptance Testing.

It is the objective of this statement of work to detail tasks that will be required

To establish the implementation of AMI functionality in enQuesta that have AMI capability using. As a result, for the detail solution to be operational in the CIS and MDM will require additional configuration across its business process and deployment of the Harris Meter Data Management product to store the interval data Readings. The enQuesta CIS and Capricorn Portal will both need to access this interval data to perform business processes that will utilize this interval data to reduce Truck rolls, promote conservation efforts through early leak detection and reduce read to bill time.

Those tasks will be outlined in this statement of work. This document will include the interface with a third party Meter installer for the creation of work orders to exchange existing meters with new AMI meters to establish and complete a proof of concept for the Augusta Utilities Department. This includes the delivery of the standard AMI Data base View package which allows the MDMS to be synced with the CIS system. Once the discovery session for the MDMS is complete additional fields may be added or removed to the View package. This AMI solution in CIS' will also be integrated with the functionality for Auto Void reconnect as part of AMI . These services will be outlined in this SOW.

Real time web services will be used to achieve interval data display, on demand reads, workorder creation from MDMS are also defined in this statement of work.

Remote Connect and Disconnect is in Scope and only 2 positions are available they are Water On and Water Off. Meters currently have the capability for a third labeled "Trickle". The CIS does not contain the functionality to have a third position at this time. The Utility can set the Off position to mean Trickle but the labels in the CIS will refer to Water OFF. If this method is the choice of the Utility then down-stream usage leak analysis will need to take this into account.

AMI Overview

All Water meters containing a radio transmitter will provide interval data back to the MDMS system. The CIS system will contain the meter, register and radio identifications and will keep the MDMS synced with both new meter installations and removals through provisioning. The CIS system, through real-time web services, will be able to display interval data, capture an on demand read or request for Mass readings for Billing and indicated Cycle(s). These real-time services will also include functionality, manually or through nightly processes in job scheduler, to complete workorders that have AMI meters reducing the number of physical truck rolls. The customer portal Capricorn, will request from the CIS system the same services to access the interval data from the MDMS system. This will display to the Utility customers who have an AMI meter installed on their account and have interval data to review.

The project pricing will include project management data integration mapping, design and analysis and implementation of services where defined, enQuesta product configuration and adjustment to current business process as required for

the deployment of AMI, Integration and Business Process Testing, User acceptance assistance, training of the Customer's Core Team, and deployment of functionality to proper environments as needed to achieve deliverables for a successful Go-Live.

2. NEW TERMINOLOGY

AMI – Advanced Metering Infrastructure includes devices and systems that measure, collect and analyze usage, and communicate with metering devices. The AMI system includes a TUNet (Tantalus Utility Network) interface where data is validated and passed through to other connected systems. The AMI system allows for two way communications with metering endpoints.

MDMS – Meter Data Management System is a term used to refer to a metering data storage and analytic system primarily used to store History of Interval data from the AMI head end system, which collects usage and metering data from meter endpoints; the MDMS also includes the account number and communication devices identification hardware.

Provisioning - Provisioning is the process by which enQuesta notifies the MDMS and Front ends AMI system of impending changes or discrepancies in metering data so as to maintain synchrony and prevent the MDMS from initiating unintended actions. For example, a Meter Exchange work order initiated in enQuesta provisions MDMS to prevent MDMS from “overreacting” to the signal interruption that will occur during the service action.

3. PROJECT OBJECTIVES

3.1. AMI Integration

- 3.1.1.** To accurately achieve full system integration of the AMI system outlined above, the Customer is requiring that the full suite of integration points to enQuesta CIS billing system be established and deployed. This solution will provide real time functionality to utilize and present interval meter data for the deployed smart meters utilizing enQuesta and their customers using the Capricorn Portal. Integration between the MDMS and the CIS system is required to obtain this interval data for acquire readings for utility billing directly from the MDMS and to complete work orders using readings from the MDMS one by one or in mass through the work order control sheet template in enQuesta, and provide customers with usage information.
- 3.1.2.** The areas of integration are defined as Basic Provisioning and real time Multi-Speak methods between the MDMS and CIS. Through this process, AUGUSTA UTILITIES DEPARTMENT will be able to:
- 3.1.2.1.** Execute On Demand Reading from newly installed smart meters.
 - 3.1.2.2.** Request and display Interval data to service representatives and customers.
 - 3.1.2.3.** Perform cycle reading request from the MDMS to be billed.
 - 3.1.2.4.** Provide functionality to close service orders for Move out Move in scenarios where only a reading is required to complete. Resulting in

no field visit required.

- 3.1.2.5. Allow the MDMS the ability to generate a work order in the CIS for 3 defined actions. These actions will be determined at the MDMS discovery session with the Customer and the associated process in the CIS will be established. Additional actions will require a change order. An example of actions could be the MDMS identifies unauthorized tampering or outage . The MDMS will generate a work order type in the CIS to be executed.
- 3.1.2.6. The MultiSpeak® version will be 4.1 for this integration.
- 3.1.2.7. CIS to MDMS Oracle views will be used for provisioning .
- 3.1.2.8. MultiSpeak will be used for integration between MDMS and CIS.

3.2. Testing/Training

3.2.1. Testing

- 3.2.1.1. Test Plans and test cases are the responsibility of the Customer PM. S&S will provide sample test cases and recommended plans based on new functional AMI process, but the Customer PM ultimately understands the Customer business processes. The AMI testing will align itself with the testing objectives of the Upgrade project plan and will adhere to that contract for Go-Live readiness.
- 3.2.1.2. After S&S brings up the enQuesta system and completes initial smoke testing, the Customer will be responsible for final testing before providing the final approval to launch as determined by the CIS Upgrade Go-Live Plan.
- 3.2.1.3. Defect Tracking and Incidents can be categorized into bugs, enhancements, training items, configuration issues, conversion issues, and limitations (out of scope). Each type has its own specific workflow and business rules. This will allow Incidents to be documented and traced back to the test case and underlying functional requirement allowing for easy reporting on the “in-process” quality of enQuesta during each testing phase
- 3.2.1.4. A Project Close document will be created jointly by S&S and AUGUSTA UTILITIES DEPARTMENT that will detail the issues that need to be resolved for Project closure. This document, also referred to as a Punch List, will contain the agreed upon priority 0 and 1 defects that need to be resolved before a) go-live and b) project close (end of post go-live). Remaining in scope deliverables that need to be implemented or issues that need to be resolved will also be added to this document.
- 3.2.1.5. Issues and defects reported after go-live will be addressed and resolved according to their priority under maintenance and support guidelines and cannot be added to the Project Close document.

3.2.2. Training

3.2.2.1. S&S is responsible for providing the Core Team training to all participants identified as the Core Team of the AMI project. The purpose of enQuesta Core Team Training is to train the core project team on the new AMI features, functionality and any changes that will occur to their existing business processes as of result of this AMI solution deployment. The Core Team will be comprised of subject matter experts who manage the major functions of enQuesta, such as Billing, Credit & Collections, Security & Administration, Metering, and Customer Service. Core Team training does not include introductory or basic training to users unfamiliar with the processes of enQuesta.

3.2.2.2. The Customer is responsible for providing end user training to all participants they deem require to be trained for AMI functionality. This training should be completed prior to Go-Live.

3.3. Go-Live

3.3.1. Once the system is accepted through completion of the onsite system acceptance testing. S&S and AUGUSTA UTILITIES DEPARTMENT will Go-Live.

3.4. Post Go-Live Support

3.4.1. The purpose of this activity is for S&S to assist the Customer in the identification and resolution of all functional and technical issues, concerns, and errors, jointly referred to as “issues” or “defects”, related to the operations of the Solution.

3.4.2. S&S shall provide 30 days of AMI post-implementation remote support.. Issues will be reported through the current issue reporting process protocol currently in place between the Customer and S&S.

3.4.3. During this period, S&S will provide a weekly assessment report that indicates issues including, open/closed defects, open issues, training issues, and remaining/open risks as they pertain to the AMI implementation.

3.4.4. Issues will be reported by AUGUSTA UTILITIES DEPARTMENT using the current support process in place establishing Tickets in the system and will be coded as AMI Issues so the implementation team can resolve during the post go Live support period.

3.4.5. Complete Project closure and acceptance results in transition to standard support will be when all Showstopper and High Issues are resolved. Please refer to the 2021 Systems & Software Support Guidelines which defines issue levels.

3.5. Project Management

3.5.1. Project Management will fall under the enQuesta Upgrade Project

Manager.

3.5.1.1. The S&S PM will create and update a project schedule on a monthly basis and submit it to the Customer PM(s) for review. Regular Project Team meetings will be held weekly via conference call.

3.5.1.2. The S&S PM is responsible for ensuring the day-to-day activities for S&S are being carried out in a manner consistent with defined project objectives, industry standards and contractual obligations.

3.5.1.3. The Customer PM's are responsible for ensuring the Utility's day-to-day activities are being carried out in a manner consistent with defined project objectives, industry standards and contractual obligations.

3.5.2. Time Management

3.5.2.1. Time Management is the process of estimating, scheduling and tracking project activities. The overall project schedule will be managed by the S&S Project Manager to ensure that the project is delivered in a timely manner. All the critical path items will be managed closely by the S&S PM and Customer PMs in their respective areas of responsibility.

3.5.3. Resource Management

3.5.3.1. Resource Management is the responsibility of both the S&S PM and the Customer PM's. Each PM is responsible for the oversight and management of the project team members from their respective organizations which may include employees, contracted consultants and vendors.

3.5.3.2. The S&S PM will manage S&S resources including all of its subcontractors; the Customer PM's will manage Customer resources, independent contractor for Q&A, and third party vendors.

3.5.3.3. At no time shall S&S become involved with the oversight or scheduling of Customer resources or the Customer's third party vendors.

3.5.3.4. It is the responsibility of each PM to ensure proper resources are available as scheduled in the project plan. This includes, but is not limited to, attendance in training sessions, team meetings, and conference calls, as well as participation in analysis, testing, and all other project activities.

3.5.3.5. Changes to the project timeline or the project plan that are due solely to the Customer and/or the Customer's third party vendors may result in a change of scope and be subject to Change Control Plan procedures.

3.5.3.6. Changes to the project timeline or the project schedule that are due solely to S&S and/or the S&S subcontractors may result in a change of scope and be subject to Change Control Plan procedures.

3.5.3.7. S&S' project management for AMI effort was reduced taking into account that a PM is already assigned as part of the Upgrade and only any additional amount of effort is required related to AMI therefore reducing any overlap of effort. Project Management is required through the completion of the Scope of work of S&S.

3.5.4. Change Control Management

3.5.4.1. Change Management is the process whereby out of scope requests or requirements are documented, analyzed, assessed for impact on the project and submitted for approval on mutually agreed upon Change Management Control. Change Orders to CIS will directly affect the timeline of this AMI deployment.

3.5.4.2. The Customer Project Managers will initiate an S&S Change Request Form (see Attachment B – Change request Form) which commences the Change Management process. The initial Change Request will be delivered to the S&S PM for consideration of the following: any possible resolution plans, resource requirements, impact to schedule, proposed timeline, and cost.

3.5.4.3. For all approved changes, the S&S PM will update the project schedule with the additional scope of work including project tasks, durations, and assigned resources. These tasks will then be managed as part of the overall project.

3.5.4.4. S&S may suggest that some Change Requests be managed outside the scope of the original implementation. This project decision will require the mutual agreement of the parties.

3.5.4.5. For those Change Requests that have financial ramifications, Payment Milestones will be reviewed and suggested modifications proposed by the S&S PM. Such proposed Payment Milestone changes shall be subject to the approval of the Customer.

4. ASSUMPTIONS

4.1. AMI CIS

- 4.1.1. The AMI project team will use the enQuesta Train environment for the establishment and testing of AMI business processes and integrations.
- 4.1.2. The Customer will store in enQuesta inventory for Meter, Register and Radio and will work with S&S on configuration of data elements and File uploads from Meter vendor.
- 4.1.3. Other devices Registers and AMR and MXU's will need to be converted to be inventoried devices as part of this project if not already configured.
- 4.1.4. Work orders will be established to install exchange and remove AMI devices to work seamlessly with enQuestaLink work force management.
- 4.1.5. New Smart Meter installation or exchanges of current AMI devices will be performed by AUGUSTA UTILITIES DEPARTMENT.
- 4.1.6. New Smart Meter installations or retrofits will also be performed by a third party mass meter installation contractor. This will require a download file of accounts for work to be performed. A file back from the Vendor will be required daily to be uploaded into enQuesta to create and complete the AMI exchange or retrofit so no Human completion is required.
- 4.1.7. S&S standard Oracle View package will be used for provisioning between the MDMS and the CIS.
- 4.1.8. The AMI meters converted and installed will be required to be read for Billing through the Realtime API from the MDM.
- 4.1.9. The MultiSpeak® Web services will be used to achieve real time integration version will be 4.1 for this integration.
- 4.1.10. Non AMI meters will be read for Billing using current method and the readings coming back will be uploaded into the Smartworks MDM.
- 4.1.11. Remote Disconnect / Reconnect will be established where work order through configuration will determine functionality of the meter and send the request to be disconnected through the MDM to the front end AMI solution based on Radio Type. Non AMI meters will go external to be

worked through the Mobil work force management solution.

- 4.1.12.** Service Orders (design, build, test, deploy) The 3 actions from the MDMS solution will be aligned with the work order(s) defined in the MDMS SOW section below.

5. ENQUESTA CIS BUSINESS REQUIREMENTS

5.1. Synchronization / Provisioning Front end AMI Solution(s)

- 5.1.1.** ITRON – The solution of provisioning the front end AMI from CIS has been ~~taken out~~ added back into Scope for the CIS integration. It was been determined that Itron will going to be using the current provisioning method to update its AMI front end solution Temetra. Since this provisioning takes place at the HH download process it is being recommended by S&S that The City of Augusta run all cycles Daily to ensure all metering points for new and exchanged or retrofitted AMI meters are captured daily. **The scope has now been updated to have a specific program run in enQuesta to populate the Temetra File directly as originally designed by Itron instead of an FCS conversion file by Itron.**

5.2. Synchronization / Provisioning MDM

- 5.2.1.** The CIS system will need to provide data to the MDMS to ensure synchronization of Account Number, Meter Number, Billing Cycle, locations, billing schedules, connection status', etc.
- 5.2.2.** The full periodic synchronization know as provisioning will be done from CIS using database views. This will allow the MDMS to avoid issues that can arise when changes are put into the CIS systems. (i.e., The CIS does not need to track changes).

5.3. Smart Meter provisioning

- 5.3.1.** New smart Meters being brought into enQuesta Inventory will be required to contain the AMI flag on the Meter Inventory record within enQuesta. This AMI Flag is required to be set to a Y and the AMI type field identified as 0= Manual Meter which refers to non-AMI smart meter and is the default meaning someone physically required to turn off or on the meter onsite. 1 = AMI Manual which means the meter is a smart AMI meter and can obtain interval data but does not have remote connect or disconnect capability from the front end AMI solution. 2 AMI RDM Remote Disconnect Meter which means the service can be shut off or reduced remotely by front end AMI solution. The field is also required to be set. The image below presents these 2 fields. The codes for configuration may change based on

implementation setup. The importance is to identify a manual shut off meter verses a remote disconnect capable smart meter.

5.3.2. The current Hand Held process is modified to exclude AMI meters in the download where reads are provided from the MDM.

5.4. Billing Requests

5.4.1. The MDMS and enQuesta will implement the MultiSpeak®® **GetLatestReadingsByMeterIDList** method for billing integration.

5.4.2. The list of meter IDs and start date parameters will be derived from list of billed cycles. The billing closure is part of the new Billing Collection Events (BCE) table in enQuesta version 6. The default time stamp will be applied when the event is scheduled. The CSR will choose the associated parameter ID to select billable readings. Below are assumptions on return readings:

- The method will return the most recent register read for each meter for the billing cycle
- (could be a couple days old or it could be 10 days old) A number

- of days parameter can be globally set. Generally 3-5 days is set.
- Missing reading will not be returned (vs. old reading or an error)
- Would be up to enQuesta to decide how to handle the reading
- Part of the response is the date/time, and the value – it will be up to the utility to configure kick-out (to decide on-demand reading, estimate read or send someone else in the field)
- EnQuesta distinguishes AMI read meters from non-AMI meters

5.4.3. enQuesta will create a request pool to handle concurrent requests for each meter in billed cycle. The pool size will be defined in configuration for optimal performance. Once the pool completes all the requests it will create the “formatted block” message for further processing in enQuesta (existing process).

5.4.4. Billing Request will be updated with current status and metrics when it's completed.

5.5. Interval Data in enQuesta and Capricorn

5.5.1. Interval reading data will be presented to the CSR in the Inquiry Portal on the Usage Tab. A new inquiry configuration will be established to be associated through enQuesta operator security to the View.

5.5.2. The customers end users can be presented interval data, if desired by the utility, through Capricorn's AMI Web Portal module.

5.5.3. enQuesta will initiate the MultiSpeak® method labeled **GetReadingsByMeterIDAndFieldNameIntervalData** method to get Interval Data, the interval data will be in 60 minutes interval.

5.5.4. S&S will aggregate the Interval Data on the enQuesta side for following intervals for display in the enQuesta Billing portal:

- Hourly – 1 hour
- Daily – 24 hours
- Monthly – 1 month

5.5.5. If meter is configured for 1 hour interval and requested interval is 15 minutes exception will be thrown by enQuesta API.

5.5.6. See Appendix A for sample SOAP Messages for enQuesta Interval Data requests.

5.6. On Demand Reading Request

5.6.1. enQuesta to perform on-demand read through MDMS MultiSpeak® method **InitiateMeterReadingsByMeterID** supplying a

transaction ID and a response URL. MDMS will then attempt to perform an on demand read to that meter, using whatever protocol is configured for that action. This may be another MultiSpeak® request, but may also be a proprietary API call depending on the AMI system the meter belongs to. Once MDMS has received the readings from the AMI system, it will make a **ReadingChangedNotification** call back to the response URL supplied in the initial request, and quoting the supplied transaction ID. In the event of a timeout or other failure of the on-demand reading, MDMS will respond with a MultiSpeak® error message. enQuesta will make this process pseudo synchronous so the processes of the Customer stay the same. enQuesta will have configuration to define how the reading will be acquired, by default it will use above method but in case if there are communication problem with meter two other options will be available: Using **GetLatestReadingByMeterID** method which asks for the most recent reading from MDMS database for a single meter. The response contains the timestamp, channel ID, value, and unit of measure of the latest register reading in the database. One reading for each channel is supplied in the response. Both methods, when enQuesta will first try to get the readings using **InitiateMeterReadingsByMeterID** method and if it's failed/timeout will try to get it using **GetLatestReadingByMeterID** method.. Below is a screen print of the Usage screen on main inquiry which displays the ondemand read date and time stamp.

5.6.2. SOAP Messages to be established in technical integration document..

5.7. Service Order Integration

5.7.1. Service Order integration includes the following functionality:

Create Service Orders. Use Case: create an investigate meter service order after receiving a tamper alarm and determining it was not caused by planned field work. The following MultiSpeak® CB and NOT (Notification) Server methods for this functionality will be implemented by S&S:

- o ServiceOrderOpenedNotification - NOT
- o GetNextNumber – CB. Will be used to keep track of created Service Orders. This will be called before ServiceOrderOpenedNotification in order to obtain service order number.

The above MultiSpeak® method(s) will be implemented in enQuesta and are one-way synchronous methods where MDMS is a client and enQuesta is a server.

5.7.2. EnQuesta has a field order flag to distinguish work orders that

require field visit from those that can be completed with an AMI meter read. Following AMI kick off meeting, S&S and AUGUSTA UTILITIES DEPARTMENT will meet to review the work orders that can be completed using the AMI system. Through this scope, S&S will change the work order flag of the existing work order types. An example of a work order could be: **Move In Move Out Work Orders**

- 5.7.3.** S&S and AUGUSTA UTILITIES DEPARTMENT will meet regarding Non-automated Work Order Creation and review those in MDMS's Task listing and decide which ones require integration in enQuesta. The work order Types will be created as necessary.

6. OUTSTANDING ISSUES/QUESTIONS

6.1. Question

- 6.1.1.** It is S&S recommendation that non-AMI Monthly Meter readings used for Billing remain being brought through the CIS Hand Held Upload process. When The Augusta Utilities Department has determined which AMI Vendor will be the proposed solution it can be revisited if non-AMI monthly readings are desired to be brought back into the MDM versus the CIS directly. **ANSWER- The Vendor selected is Itron's Temetra solution. Non-AMI manually read meters will be downloaded by enQuesta to be manually read and will be uploaded to the MDM for all manual monthly read meters as well as AMI meters hourly intervals. The Billing data request is executed in CIS to ensure all reads for the Cycle AMI and Manually read monthly reads are requested. No interval data for manually read meters will be retained in the MDMS.**

7. BUSINESS PROCESS AND REQUIREMENTS FOR METER EXCHANGES

7.1. Work Orders Internal

- 7.1.1.** Analysis of the current meter exchange work orders will take place and new meter installs, removal , and exchanges will be configured as needed and tested for this project. Other internal work orders will be established as needed for the Customer to maintain the new AMI account integrity.

8. METER AND OTHER DEVICE INVENTORY IN ENQUESTA

8.1. Initial Setup

- 8.1.1.** Meters, Registers and Radio devices, for the AMI, will need to be established in enQuesta as inventoried items. enQuesta is capable of loading meters and other devices into enQuesta using a file. The file format is typically an MS Excel format. For instance, column A will contain the device ID. Most customers edit the electronic file from the manufacturer or copy the device ID and create a new file. The file is then saved to an enQuesta directory (to be determined). Next, utilizing the "Quick" functionality in enQuesta, the User selects the file and identifies a template which the device data can be recorded to in enQuesta. By uploading files to these templates, enQuesta records the device data to the enQuesta inventory. This is performed for meters and then for other devices such as radios.

- 8.1.2.** The Radio and Register are considered "Other" devices in enQuesta. The device parameter initial setup will utilize Other Device Type codes XX = Register and XX = Radio as a description. These Codes will be determined during AMI stage 1of the project. AUGUSTA UTILITIES DEPARTMENT can choose to carry both or neither in inventory. This will be a decision during the project TBD. S&S recommends at least the Radio device to

be carried in inventory. When installed at the customer premise through a work order the Other Device Type XX and Other Device ID inventory numbers are added.

8.1.3. The account will contain 1 CMTR record in enQuesta for each register reading required. AUGUSTA UTILITIES DEPARTMENT will need to determine all attributes to be populated on the Register and Radio inventory record to establish the initial template for each.

8.1.4. The file AUGUSTA UTILITIES DEPARTMENT should FTP to a location on the enQuesta server (TBD) will only consist of the current file format in place containing the device number. Each device Type Meter, Register, Radio is a separate file and the creation program you will select the template for the particular device being created.

8.1.5. The screen below will be used to upload Meters and Radio devices and Registers into inventory.

9. METER DATA MANAGEMENT (MDM) SMARTWORKS

9.1. Introduction

This Statement of Work (SOW) defines the work to be performed by the SmartWorks division of N. Harris Computer Corporation (herein referred to as “SmartWorks”) for Augusta Utilities Department, (herein referred to as “Customer” or “AUGUSTA UTILITIES DEPARTMENT”). This SOW includes a high-level timeline and other Terms and Conditions specific to the services requested by Customer.

This document serves as the complete understanding, between Customer and SmartWorks, as to what the current Statement of Work entails. SmartWorks will use this document as a reference for the configuration and implementation of SmartWorks Compass (herein referred to as the “SmartWorks Software”). This document will also be used by Customer to determine if the SmartWorks Software provides the functionality requested and agreed to, per this document. If there are any issues during the project lifecycle, this document will be used to determine if the issue is a configuration/development issue or if the issue was not included as part of the current Statement of Work.

Changes to this document shall be made through a Change Management Process.

The implementation project will accomplish the following high-level objectives:

- 1) Install, configure and implement the SmartWorks Software as defined in this document.
 - a) The **SmartWorks Compass** solution will be installed at the **Systems & Software Hosting Facility**.
- 2) Initiate within SmartWorks Software the collection and management of register and interval read data from AMI Meters.
- 3) Integrate with
 - a) **AMI Vendor Itron** and to import register and interval reads, import meter events/alarms, and initiate remote actions
 - b) **S&S CIS** to import meter and location data and provide billing determinants, Work order information
 - c) **ESRI GIS** to integration with base maps URL
 - d) **SilverBlaze Customer Web Portal** to display customer billing data
- 4) Deliver system training designed to develop Customer competency with the use and configuration of the SmartWorks Software.
- 5) Provide support during User Acceptance Testing.

9.2. Glossary of Terms

Term	Definition
Acceptance Testing Period	A defined period of time to perform User Acceptance Testing on the Solution including testing in a live pre-production environment.
Actual Solution Acceptance Date	Date that written acceptance by Customer is received by SmartWorks that Solution substantially meets the Functional and Integration Requirements Document, and substantially satisfies the testing criteria set forth in the Solution Acceptance Criteria.
Billing Determinant	The measure of consumption used to calculate a customer's bill. A billing determinant is either: <ul style="list-style-type: none"> • A register read; or • A value calculated by the MDM for billing purposes based on interval and/or register read data. If rates are blocked, seasonally differentiated, time-differentiated, or separated by demand and energy measures, then the billing determinants are organized in the same fashion.
Change Management Process	The process outlined in section 9.8.6 of the SOW, which SmartWorks and Customer will follow for any proposed changes to the SOW.
Deliverable	An item created during the project that requires formal review and approval by Customer.
Deliverable Acceptance Criteria	Criteria by which Customer determines that the Deliverable provided by SmartWorks is in accordance with this Statement of Work.
Deliverable Acceptance Criteria Document	A central listing of all Deliverables and Work Products developed by and maintained throughout the project.
Expected Solution Acceptance Date	The date, identified in the Detailed Project Plan, by which Customer and SmartWorks expect Solution Acceptance to be achieved.
Functional Testing	Testing of the core Solution components (configuration, interfaces, reports, and modifications) against agreed upon requirements, prior to User Acceptance Testing.
Go-Live Plan Document	A Deliverable identifying and describing the activities to be performed during the Deployment phase of the project.
Integration Testing	Testing of the end-to-end process based on business processes and scenarios against the agreed upon integration requirements.

Term	Definition
Interval Read Data	<p>A meter read (actual or virtual) showing the consumption over a defined period of time, demand, or interval, normally 60 minutes, 30 minutes, 15 minutes or 5 minutes.</p> <p>Typical units of measure include kilowatt-hours (kWh) for electric meters, Gallons/cubic foot or cubic meter for water meters.</p>
Meter Channel (physical)	<p>Unique stream of meter read data, with corresponding UOM (Unit of Measure), measured by meters and stored under a unique Channel ID within SmartWorks Compass.</p> <p>Each channel can consist of consumption data (referred to as consumption channel) or a demand data (referred to as demand channel).</p>
Meter Channel (virtual)	<p>Unique stream of meter data, with corresponding UOM (Unit of Measure), generally calculated by and stored under a unique Channel ID within SmartWorks Compass. Each channel can consist of consumption data (referred to as consumption channel) or a demand data (referred to as demand channel).</p>
Meter Event	<p>An anomalous network situation or notification reported by an AMI meter; for example, issues related to quality of supply, security failures, fraud, or issues with network communications. Meter events are collected and reported by Customer's AMI system as part of the routine meter interrogation cycle.</p>
Post Implementation Grace Period	<p>Time period after Actual Solution Acceptance Date during which SmartWorks Software is operating as Customer's primary operating system with respect to functionality contained herein.</p>
Register Read Data	<p>A value provided by the meter that is shown on the meter's faceplate, and hence can be validated by the customer by visual inspection of the meter. This can include:</p> <ul style="list-style-type: none"> • Cumulative Consumption Register Read – total measured consumption since the meter was manufactured or refurbished (typical units of measure include kilowatt-hours (kWh) for electric meters and Gallons/ cubic foot or cubic meter for water meters.) • Time of Use Consumption Register (total consumption during a specific time of use window)

Term	Definition
Solution	The set of related software programs and services to be implemented according to this Statement of Work.
Solution Acceptance	Customer determination by written acknowledgement that the Solution provided by SmartWorks performs in accordance with the Functional and Integration Requirements documents developed for this Statement of Work.
Standard Project Plan	A baseline plan created by SmartWorks in collaboration with Customer_during the Initiation and Build phase of the project. The plan establishes the implementation timeline (including certain milestones) for the project.
Third-Party Vendor	Any vendor or organization that is not part of SmartWorks or Customer
Unit Testing	Ad hoc testing of individual Solution components to validate that each component meets the specifications set forth during the project.
User Acceptance Testing	Testing to validate that Solution behaves per agreed upon requirements as defined in the Functional and Integration Requirements Document based on the test cases and selected scenarios.
Work Product	An item created during the engagement that is reviewed by Customer but does not require formal approval.

9.3. Roles and Responsibilities

The activities to be carried out are detailed in each section of this document. The table below defines the associated roles and responsibilities at a high level. References to the corresponding sections of the SOW are included when a more detailed description is required.

Task	Responsible Party
Establish detailed Project Plan	Project Managers (SmartWorks/Customer)
Ensure resources are available to carry out tasks defined in section 9.11 Customer Resource Involvement	Project Manager (Customer)
Engage in tasks defined in section 9.11 Customer Resource Involvement	Project Core Team (Customer)
Ensure resources are available to perform work as defined in SOW	Project Manager (SmartWorks)
Ensure assistance and cooperation by Third-Party Vendors (including AMI, AMR and GIS)	Project Manager (Customer)

Task	Responsible Party
Participate in weekly project calls	Entire Project Team (SmartWorks/Customer)
<p>Confirm User Authentication method and assist with configuration.</p> <p>Note: User/password authentication can be performed by an external Identity Provider (IdP) such as the cloud based Microsoft Azure Active Directory via SAML (Security Assertion Markup Language) single-sign-on protocol or via an on-premise LDAP (Lightweight Directory Access Protocol) server such as Microsoft Active Directory.</p> <p>The three options are:</p> <p>Approach 1: Framework manages authentication, role membership and access.</p> <p>Approach 2: IdP manages authentication only.</p> <p>Approach 3: IdP manages authentication and role membership.</p>	IT (Customer)
<p>Configure Virtual Private Network (VPN) as required to enable access to 3rd Party Software.</p> <p>Note: When the SmartWorks software is hosted using our cloud / SaaS environment, and an SAML integration is not possible, the LDAP / Active Directory integration is achieved via a secure IPSec VPN tunnel between the hosted SmartWorks application server and the customer's LDAP / Active Directory server.</p>	IT (Customer)
Perform initial install in System & Software Hosting Facility	Infrastructure specialist (SmartWorks)
Install Software Modules as per section 9.5 SmartWorks Compass Modules	Consultants (SmartWorks)
Provide deliverables as defined in section 9.6 Project Deliverables and Work Products	Consultants (SmartWorks)
Provide AMI infrastructure and meter data	Metering (Customer via AMI vendor)
Provide input data for integration points as defined in section 9.7 Software Integrations	Project Team (Customer)
Install and configure integration points as defined in section 9.7 Software Integrations	Consultants (SmartWorks)
Perform data validation for each DataSync iterations and confirm validity of AMI data	Project Team (Customer)

Task	Responsible Party
Identify User Roles and User Groups	Project Team (Customer)
Perform Unit Testing	Consultants (SmartWorks)
Perform Functional and Integration Testing	Consultants (SmartWorks)
Provide user training	Consultants (SmartWorks)
Create User Acceptance Scripts	Project Team (Customer)
Perform User Acceptance Testing	Project Team (Customer)
Provide support during User Acceptance Testing	Consultants (SmartWorks)
Perform configuration updates once training has been delivered and User Acceptance Testing is completed Note: Guidance will be provided by SmartWorks until the project is deemed completed.	Project Team (Customer)

Related Documents

Related documents to the SOW are:

- 1) Subscription Agreement
- 2) Software Implementation Services Agreement
- 3) Support and Maintenance Agreement

9.4. SmartWorks Compass Implementation Scope

The scope of this Statement of Work is to implement the SmartWorks Software Solution for the Customer and to train key Customer personnel on the operation of the SmartWorks Software. The Customer will procure and install their respective advanced meters and supporting network infrastructure.

9.4.1 Environments

SmartWorks will deploy two (2) instances of the SmartWorks Software in the Systems & Software Hosting Facility in the United States: one (1) Test instance and one (1) Production instance.

The intent of a test environment is to test new or existing functionality with a minimal set of data representative of the meter population prior to a production update.

The Test and Production environment specifications are shown in the Server Specification Assumptions table below. The use of the Test instance as a copy of production with a full set of data and corresponding full dataset processing is not included in the scope of work. Server specifications and associated hosting costs, if applicable, included in scope are based on these assumptions. Changes to the environments may be brought into scope using the Change Management process.

9.4.2 Server Specification Assumptions

	Live Storage	Meter Population	Integrations	VEE
Test instance	12 months	Meter Deployment following table in Section 9.4.4	Integrations defined in Section 9.7, not real time. Real-time integrations only enabled/active as required e.g. DataSync, real-time events, remote actions	The test environment is designed to be used for functional testing with meter data refreshed by database imported on an annual basis, as needed. Regular VEE processing will not be performed.
Production instance	36 Months	Meter Deployment following table in Section 9.4.4	All integrations defined in Section 9.7.	Enabled

9.4.3 Storage

Except as otherwise expressly set forth herein, all hosting services delivered hereunder, and Systems & Software's hosting facility will be used to host the MDM, in accordance of the terms and conditions of the current Hosting Services Agreement dated Between The City of Augusta and Systems Inc dated 9/2/2023.

The SmartWorks Software will be capable of importing, processing and storing thirty-six (36) months of data for the meters reflected in the table below. Each instance will be sized appropriately to manage this volume of data. Changes to the table below that may affect the size of the Hosting environment

An archive and purge process will be used for data older than thirty-six (36) months. Archived data will be recoverable for a period of five (5) years after the date of archive, after which it will be purged.

To restore a location's data that has been previously purged and archived, users must enter the Location Number or meter ID. Once the restore execution is complete, all data for the selected meter ID, or for all meters associated with the selected location, will now be available in the system again, and can be viewed in graphs, tables, or other reports. This data will remain in the system indefinitely and will be excluded from further data purge processes. Users will also be able to configure a "Data Purge Exclusion Meter List".

Changes to storage and data processing requirements including storage duration, meter

counts, configuration of intervals length or number of channels impact the storage requirements submitted with our proposal. These may be brought into scope using the Change Management process.

A set of test meters in the Production environment will be defined by the Customer as being eligible for testing functionality (for example, disconnect features).

9.4.4 Meter Configuration

The SmartWorks Software will be capable of importing, processing and storing meter usage data based on the interval length and channels submitted with our proposal and defined below. Changes to meter counts, configuration of intervals or number of channels may be brought into scope using the Change Management process.

Service	Number of Meters	Interval Length	Number of Channels	UOM
Water – Residential	65,362	60 minutes	1	GAL
Water – Commercial	7,262	60 minutes	1	GAL

9.4.5 SmartWorks Compass Meter Data Types

For each water meter provided in the Data sync process, there are four (4) different record types supported in Compass MDM:

- INT (Interval reads): reads processed through VEE,
- REG (Register reads): reads processed through VEE,
- EVN (Meter events),
- OMD (Other Meter Data values).

The SmartWorks Compass record layout for each of these six record types is detailed in the tables below.

9.4.6 Raw Interval Reads

Field Name	Field Type	Description
Record Indicator	String (3 chars)	Must have value 'INT' for interval reads.

Field Name	Field Type	Description
Meter_id	String (Not exceeding 30 characters)	Unique meter identifier. Must exactly match the unique meter identifier stored in AMI and CIS systems.
Channel_id	Integer	Channel identifier. A meter must have only one channel identifier with a given unit of measure. Data with different units of measure must each have their own channel identifier.
Read_dtm	Date/Time	Date and time of the end of the interval, in the meter's local standard time (not including daylight savings) or UTC. Preferred format is: "yyyy/mm/dd hh24:mi:ss".
Read_value	Decimal (any precision)	Numeric value representing the meter reading (either consumption or max demand, depending on the channel's Unit of Measure) for the interval.
UOM	String (not exceeding 30 characters)	Unit of measure for the reading. For example, KWH, KW, KVAR, KVA, GAL, M3, FT3
Source_collector_id	String (not exceeding 30 characters)	Unique identifier of the data collection device that obtained this meter reading (optional).

9.4.7 Raw Register Reads

Field Name	Field Type	Description
Record Indicator	String (3 chars)	Must have value 'REG' for register reads.
Meter_id	String (Not exceeding 30 characters)	Unique meter identifier. Must exactly match the unique meter identifier stored in AMI and CIS systems.
Channel_id	Integer	Channel identifier. A meter must have only one channel identifier with a given unit of measure. Data with different units of measure must each have their own channel identifier.
Read_dtm	Date/Time	Date and time the meter's register was read, in the meter's local standard time (not including daylight savings). Preferred format is: "yyyy/mm/dd hh24:mi:ss".

Field Name	Field Type	Description
Read_value	Decimal (any precision)	Numeric value representing the meter register reading, which should match the meter's faceplate value at that time.
UOM	String (not exceeding 30 characters)	Unit of measure for the reading. For example, KWH, KW, KVAR, KVA, GAL, M3, FT3
Source_collector_id	String (not exceeding 30 characters)	Unique identifier of the data collection device that obtained this meter reading (optional).

9.4.8 Meter Events

Field Name	Field Type	Description
Record Indicator	String (3 chars)	Must have value 'EVN' for meter events.
Meter_id	String (not exceeding 30 chars)	Unique meter identifier. Must exactly match the unique meter identifier stored in AMI and CIS systems.
Channel_id	Int	Where applicable, indicate the channel ID associated with this event. In most cases, the event is associated at the meter-level, and not with a particular channel. In such cases, just put "1".
event_dtm	Date/Time	Date and time associated with the event, in the meter's local standard time (not including daylight savings). Preferred format is: "yyyy/mm/dd hh24:mi:ss".
Event_tp	String (not exceeding 30 chars)	Text indicating the type of event (example, 'Tamper', 'Outage', 'Leak', etc.)
Event_Comments	String (not exceeding 256 chars)	Text description of the event. If none is available, just duplicate the value in the Event Type field.

9.4.9 Other Meter Data

Field Name	Field Type	Description
Record Indicator	String (3 chars)	Must have value 'OMD' for other meter data.
Meter_id	String (not exceeding 30 chars)	Unique meter identifier. Must exactly match the unique meter identifier stored in AMI and CIS systems.
Value_Type	String (not exceeding 30 chars)	Identifier of the type of other meter data - i.e. "blink count, current".
value_dtm	Date/Time	Date and time associated with the data value, in the meter's local standard time (not including daylight savings). Preferred format is: "yyyy/mm/dd hh24:mi:ss".
Value_qty	Decimal	Numeric value indicating the quantity of the data value.
UOM	String (not exceeding 8 chars)	Unit of measure for the data value.
Source_collector_id	String (not exceeding 30 chars)	Unique identifier of the collector device that obtained this meter data value (optional).

9.5. SmartWorks Compass Modules

The following SmartWorks Compass Software modules will be installed and configured as part of the scope of this engagement:

- **SmartWorks Compass**, including the following modules:
 - **MeterSense MDMS**
 - **KPI Dashboard**

This section includes a description of each module as well as their corresponding Pre-requisites and Assumptions.

9.5.1 MeterSense MDM

SmartWorks will install and configure **MeterSense MDM** module.

Module Functionality includes:

- Support meter deployment
- Reports to help ensure that meters are provisioned correctly and communicating in the field
- Monitor AMI Performance
- Report on number of reads delivered compared to AMI Service Level Agreement

- Enable Meter-to-Cash
- Validation of reads, billing determinants and customer service support
- Alert via Meter Events
- Store and report on Tamperers, Leaks, error and other meter flags

Pre-Requisites & Assumptions

- Meter reads are imported from the AMI as defined in section 9.7.1 AMI Head End Systems.
- Meter events are imported from the AMI as defined in section 9.7.1 AMI Head End System.
- Meters installation/removal are synchronized with the system of record as defined in sections 9.7.5 CIS Synchronization Integration.
- After installation of **MeterSense** MDM by SmartWorks, meter reads validation routines (VEE – Validate, edit, estimate) as defined in SmartWorks User-Guide VEE will be available for configuration.
- Data will be presented in the **MeterSense** MDM reports based on the modules identified in this Statement of Work and the availability of the data described in section 9.7 Software Integrations.

9.5.2 KPI Dashboard

SmartWorks will install and configure the **KPI Dashboard** module. The KPI Dashboard enables the user to configure one or more dashboards to display information on Key Performance Indicators (KPIs). A KPI is a metric that is represented by a One-Dimension or Two-Dimension Visualization component:

- One-Dimension KPI Visualization includes: Numeric, Thermometer, or Speedometer
- Two-Dimension KPI Visualization includes: Area, Bar, Column, Scatter, Pie, or Table

For each KPI, a panel of information is available. This includes:

- Value of the KPI displayed as a numeric value, speedometer graphic or thermometer graphic.
- If a drilldown link was defined when the KPI was registered, clicking anywhere on the value will launch a window with the drilldown page.
- Color coded value (red/yellow/green), depending on settings.
- Max/min statistics and trend area.
- Secondary KPI value, where configured. If the secondary KPI value has been defined with a drilldown link, clicking on the value will launch a window with the drilldown page.

Information on a KPI can be shared via email on a scheduled basis or threshold-driven exception basis.

A set of standard KPIs are made available with the application. These are arranged into a set of standard dashboards. It may be that not all dashboards or KPIs are applicable

to a utility depending on available information, modules deployed, and integrations performed. Users may configure their own dashboards from the available KPIs.

Pre-Requisites & Assumptions

- Deployment of the **Compass Framework**, if not already in place.
- Population of any data required for calculation of KPIs as per section 9.5.1 of this SOW.

9.5.5 Reporting

All standard reports available within the SmartWorks Software will be made available for all licensed modules.

No custom reports have been identified for delivery. However, if during the project, Customer identifies a requirement for a custom report, the services can be brought into scope using the Change Management process described in section 0.

9.6. Project Deliverables and Work Products

The following deliverables, milestones and work products are included in this project.

Deliverables are items created during the project that require formal review and approval by the customer. **Work products** are items created during the project that are reviewed by the customer but do not require formal approval by the customer.

9.6.1 Deliverables

The following list identifies the key deliverables associated with this project:

- Functional and Integration Requirements Document
- SmartWorks Software installation
- SmartWorks Software configuration
- SmartWorks Software integration as defined in section 9.7
- SmartWorks Software End-User Training

9.6.2 Work Products

The following list identifies the key work product documentation associated with this project:

- Project Schedule
- Acceptance Criteria Document
- Test Case Scenario Checklist
- Testing Plan
- Training Plan
- Training Material
- SmartWorks Software User Guides
- Go-Live Approach Document

9.6.3 SmartWorks Compass Training and Discovery Sessions

To enable users to effectively use the software both during acceptance testing and in a production capacity, SmartWorks will provide end-user training as part of this project. Onsite and remote training sessions will be provided the Customer as outlined in the table below.

Activity	Location	Attendees	Length
Kick Off Meeting	Remote	Core project team, Executive Sponsors	1-2hrs
SmartWorks Compass demo	Onsite* (with Discovery)	Core project team, Billing, Meter Op, CSR, IT	1hr
Discovery Sessions	Onsite*	Core project team, Billing, Meter Op, CSR, IT 3 rd Parties (CIS, AMI)	1.5 day
Workshop 1: Compass Overview and Introduction to VEE	Remote	Core project team	0.5 day
Navigation Training Sessions	Onsite*	Core project team, Billing, Meter Op, CSR, IT	2 days
Workshop 2: Data Validation	Remote	Core project team	0.5 day
Workshop 3: Roles and Groups configuration	Remote	Core project team	1hr
Processes and System review Session	Onsite*	Core project team, Billing, Meter Op, CSR, IT 3 rd Parties (CIS, AMI, etc.)	3 days
Workshop 4: Addressing VEE Exceptions and fine-tuning	Remote	Core, Billing, Meter Op, CSR	2 x 0.5 days
SmartWorks Compass Functional and Process Training	Remote	Core, Billing, Meter Op, CSR	3 x 0.5days
Test scripts review	Remote	Core, Billing, Meter Op, CSR	1hr
UAT Acceptance Testing Support	Remote	Core, Billing, Meter Op, CSR, IT	10 days

Note: Onsite* sessions will take place when safe and appropriate. The onsite sessions can be replaced with remote online sessions upon agreement between SmartWorks and Customer.

9.6.3.1 Kick Off Meeting

The purpose of this onsite meeting is to introduce project team members and review the MDM project at a high level. Topics include scheduling, methodology, milestones, communication plan and short-term focus.

9.6.3.2 SmartWorks Compass Demo

High level review of SmartWorks Compass features and functionalities. The purpose of this demo is to prepare Customer to engage in discussions during the Discovery Sessions.

9.6.3.3 Discovery Sessions

Preliminary requirements for the CIS Data mapping (DataSync) and billing (Meter to Cash), as well as for the AMI integration (Implementation Questionnaire) are reviewed during these sessions. The Solution Architecture Diagram and infrastructure components such as VPN connection are also scheduled as part of the initial discovery sessions. The VPN discussions should have started remotely, prior to Discovery.

These sessions are technical and participation from Customer's subject matter experts as well as third party vendors are expected to ensure optimal efficiency during the initial phases of the project. Meeting the dependencies identified during the initial discovery sessions is critical for the scheduling of subsequent project activities.

9.6.3.4 Workshop 1: Compass Overview and Introduction to VEE

The purpose of this session is to introduce the core team to SmartWorks Compass functionality and to the existing Validation Routines available within SmartWorks Compass.

The Overview Training Session is held with the core user group when initial configuration is complete. This session occurs during the Pilot phase and is held remotely, in preparation for the Onsite Discovery Session, enabling users to navigate the SmartWorks Software prior to the decision-making process that will take place during the Discovery Session.

The Overview Training Session provides users an overview of current system functionality. Upon conclusion of this session, users are able to navigate SmartWorks Compass platform and understand existing configuration.

9.6.3.5 Workshop 2: Data Validation

This workshop is held once initial configuration of DataSync and AMI read import is completed. The purpose of this Workshop is to review data within SmartWorks compass, including the review of validation reports. Following this workshop, it is expected that users will proceed with validation of the data from the CIS DataSync and AMI integrations, by comparing to their existing CIS and AMI systems.

9.6.3.6 Navigation Training Sessions

The Functional and Navigation Training Session is held once initial configuration of DataSync and AMI read import is complete. The purpose of this training session is to introduce the Core project team to the SmartWorks Compass application, enabling users to navigate the SmartWorks Software prior to the decision-making process that will take place during the following remote workshops and onsite sessions.

The Navigation Training Session provides users an overview of current system functionality. Upon conclusion of this session, users are able to navigate SmartWorks Compass platform and understand existing configuration.

Topics typically covered in this training include:

- SmartWorks Compass Navigation training
- Data Setup
- Meter Reads & Validating, Estimating, Editing – VEE
- Using Maps and Reports
- Advanced Reporting and KPI Dashboards
- System Administration

9.6.3.7 Workshop 3: Roles and Groups configuration

The purpose of this Workshop is to determine who will be the user groups of the SmartWorks Compass solution, their access level and which permissions will be assigned to each group.

9.6.3.8 Processes and System review Session

The purpose of the Process and System review Session is to demonstrate existing functionality of the SmartWorks Software using Customer data and elicit feedback for updates to that functionality. Emphasis is placed on understanding Customer's existing business process. The impact to the process due to SmartWorks Software is documented in the Functional and Integration Requirement Document.

Customization (custom reports) as well as purchased Modules (see section 2.5) are discussed during this session.

9.6.3.9 Workshop 4: Addressing VEE Exceptions and fine-tuning

The purpose of this workshop is to provide users with the steps required to review validation reports and assist them in the investigation of VEE Exception reports. A fine-tuning of the VEE Parameter configuration may also be required during this session.

9.6.3.10 Functional and Process Training

During the Functional and Process Training, up to 12 users will be provided training on the SmartWorks Software. This training includes a refresher of System Navigation as well as a review of the main business functions and use cases applicable to Customer. This training will also cover customization and features related to Modules purchased by the customer.

Topics typically covered in this training include:

- SmartWorks Compass Refresher training
- Billing & Customer Service Functions
- Sessions specific to each SmartWorks Compass module defined in section 2.5
- Process Automation Overview

9.6.3.11 Test scripts review

This session will be used to review SmartWorks test scripts with Customer and how to monitor testing progress using test scripts dashboard. It is Customer responsibility to create, update and adapt the test scripts for the purpose of their User Acceptance Testing phase.

9.6.3.12 UAT Acceptance Testing support

Customer is expected to focus and engage in User Acceptance Testing for a period of 2 weeks, with the remote support from the SmartWorks project team. The Validation/Testing Approach is described in section 5.4 of this SOW.

9.7. Software Integrations

During software integration:

- Customer will act as or provide an integration coordinator who will be responsible for overseeing integration communications for this project.

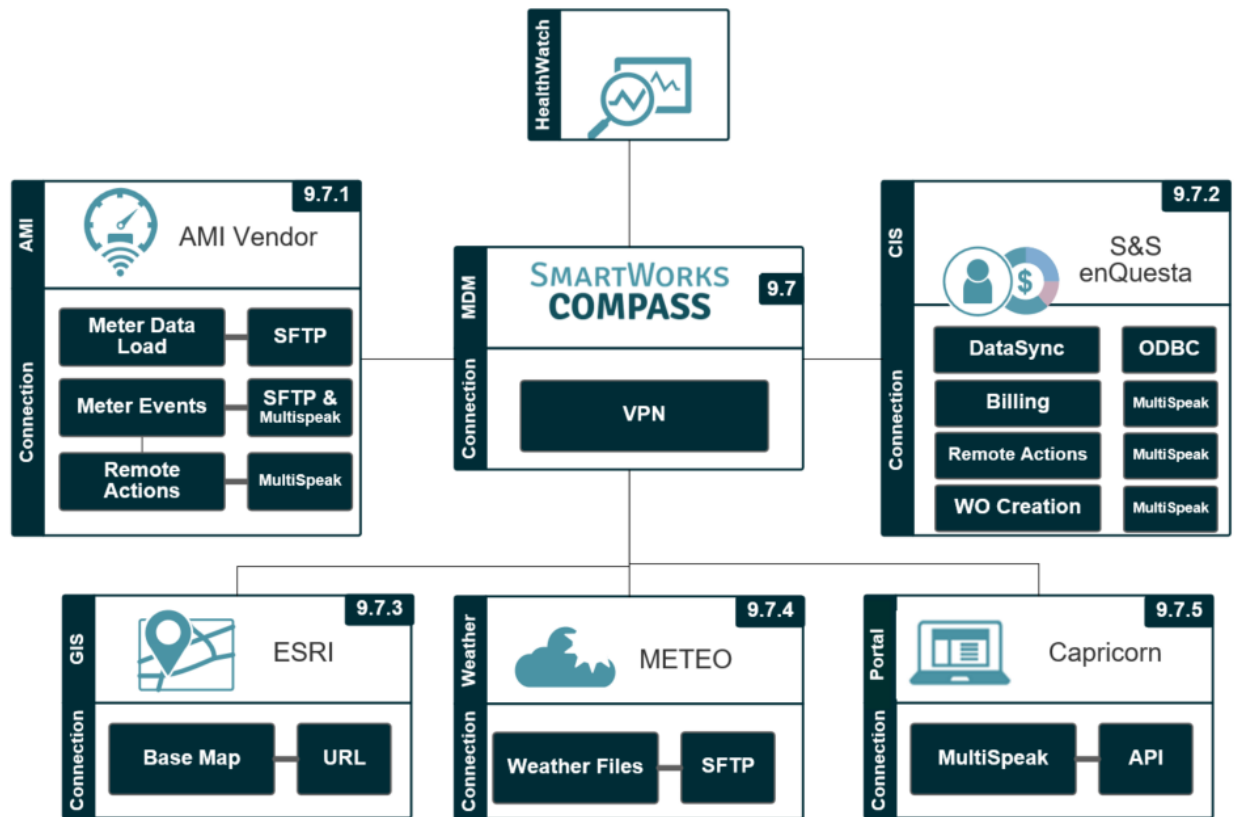
The integration coordinator role consists in securing, as required and in a timely fashion, the assistance and cooperation of third-party vendors. A change order will be required if a third-party vendor is unavailable or non-cooperative and causes an impact to the project schedule or effort.

- SmartWorks will provide advice and recommendations regarding its experience and leading practice.

SmartWorks will make a reasonable attempt to provide sufficient lead time when making requests for assistance from third-party vendors. When deemed appropriate by Customer, SmartWorks will also work directly with third-party vendors if direct communication will result in efficient execution of the project.

Any version changes to integrating systems that occur during the project will be reviewed by SmartWorks and will require a change order if integration updates or re-testing activities are required.

The following diagram illustrate the Interconnectivity model between SmartWorks Compass and each integration point. The final integration diagram is subject to the final discovery session that will be held between the technical teams implementing the solution.



The following Integrations are included in the project scope for the project:

9.7.1 AMI Head End System (AMI Vendor), version X.X

SmartWorks Software will integrate with the AMI Head End System to:

- **Meter reads:** Import the current day's readings as well as older reads that were previously missed. Interval and register read data will be received from AMI Head End system.
- **Meter events:** Import meter event data from AMI Head End. Examples include alerts such as tamper, leak, etc. Specific alarms will be defined between Sensus and Customer.
- **Remote action:** Where the functionality is supported by the meters or compatible others, SmartWorks Software will integrate with the AMI Head End to perform On Demand reads and Remote Connects & Disconnects.
- **Other Meter Data:** Other meter data can include any interval data that is not consumption data.
 - It is assumed that Other Meter Data types be kept to a minimum as to not cause performance concerns for the Compass system. Core Reports in Compass do not look at the data in the OMD table. Custom reports would need to be created using specific data in the

OMD table. These custom reports are not in scope but can be brought into scope using the Change Management Process.

Integration	Initiator	Type(s)	Protocol	Frequency
Meter Reads	AMI	CMEP Read File	sFTP	1-3 times/day
Meter Events	AMI	CMEP Event File	sFTP	1-3 times/day
Meter Events	AMI	Real Time events (to be defined)	MultiSpeak® methods	Real Time
Remote Actions	AMI	OnDemand read	MultiSpeak® methods	Near Real Time
Remote Actions	AMI	Remote Connect (TBC)	MultiSpeak® methods	Near Real Time
Remote Actions	AMI	Remote Disconnect (TBC)	MultiSpeak® methods	Near Real Time

Assumptions:

- If flat files are used for providing meter data, the files are expected to be delivered by 5:00am (local time) or an agreed upon time suitable to Consultant and Customer in order for the SmartWorks Software to perform the VEE process. The AMI Head End may deliver files at multiple times during the day in order to collect the maximum amount of meter data.
- It is assumed that the applicable AMI Head End version will be installed on the Customer system in time for Consultant to perform its development and testing activities.
- It is assumed that interval reads provided by the AMI will scale to the register reads provided by the AMI (i.e. sum of interval reads will add up with the difference between register reads, after multiplier will pass at 95%). Failing to meet these may result in poor data quality in the MDM.
- It is assumed that there will not be more than 5% missing intervals reads per day. Failing to meet these will result in performance issues when MDM tries to fill in gaps
- It is assumed that compound meters are two separate encoder heads and AMI Modules on one physical meter. Compass is Meter ID centric, therefore the system of record for meter information should see the High and Low sides of these meters as separate meter numbers. Compass can handle a single Meter ID assuming that the CIS can associate the High and Low sides of the meter using the Alt_Meter_ID and 'H' and 'L' suffixes in the datasync.

9.7.2 Customer Information System (CIS) (S&S)

In collaboration with Customer or Customer's agent(s), Consultant will provide the following integrations with Customer's CIS. The integrations will require ongoing support from the CIS vendor through the SmartWorks integration project.

9.7.2.1 Summary of integrations

Integration	Initiator	Type	Protocol	Frequency
DataSync	CIS	Creates DB views		
DataSync	MDM	Queries DB views	ODBC	1-3 times/day
Billing (AMI & AMR)	CIS	Billing Request	MultiSpeak® 4.1	TBD during discovery
Billing (AMI & AMR)	MDM	Billing Response	MultiSpeak® 4.1	TBD during discovery
Remote Action	CIS	OnDemand read request	MultiSpeak® 4.1	Near Real Time
Remote Action	MDM	OnDemand read response	MultiSpeak® 4.1	Near Real Time
Work Order Creation	MDM	3 rules to be defined	MultiSpeak® 4.1	TBD during discovery

9.7.2.2 CIS Synchronization Integration

Import of customer and meter data into the SmartWorks Software for validation of AMI data. A daily full periodic synchronization activity will occur.

The minimum information to be provided from the CIS will include the following:

	SmartWorks Compass
METERS: List of meters with identifiers, meter types, etc.	X
METER COORDINATES: Meter latitude and longitude information	X
LOCATION: List of location(account) numbers, service addresses	X
METER LOCATION: A date-driven cross reference between meter and location number (i.e. when a meter is installed and removed from a location)	X
METER CONNECTION STATUS: State of the meter (ON/OFF)	X
METER ALIAS: Descriptive information related to the meter, combining meter/location attributes	X
BILLING SCHEDULE: Cycle/Route schedule indicating billing period and reading period	X

Assumptions:

- It is expected that when a radio is installed or removed from a meter, a cross reference between meter ID and associated radio ID will be maintained in the CIS and provided during DataSync.
- This integration will be established using a database view that will be queried by SmartWorks Software. The database view will be developed by the CIS vendor or another agent of Customer. The DB Views must be available prior to

commencement of integration work. Any delays with the availability of the views will impact the project timeline. In the case of significant delays, Customer has the option to pause the project until the views are available or follow Change Management process to keep the SmartWorks Project team engaged until the files are available.

- It is assumed there will be multiple iterations of the DataSync (typically 3-4) where the list of fields to be provided by the CIS in the views will be finalized after discovery and prior to UAT. Customer is responsible for validating the data as a result of each DataSync iteration.
- Depending on Customer requirements, the synchronization will occur between 1 to 3 times per day and will be scheduled to occur after the CIS Customer database has been updated.
- Customer will be responsible for assisting in identifying and validating the data required for data synchronization
- It is assumed that a direct integration will be made between the AMI head end system and the CIS for the purpose of meter provisioning (see section 5.3). It is expected that Customer and AMI provider will work collaboratively to develop this integration.

9.7.2.3 Billing Interface (MultiSpeak®)

Customer will initially bill using register reads, not time-based determinants for most meters.

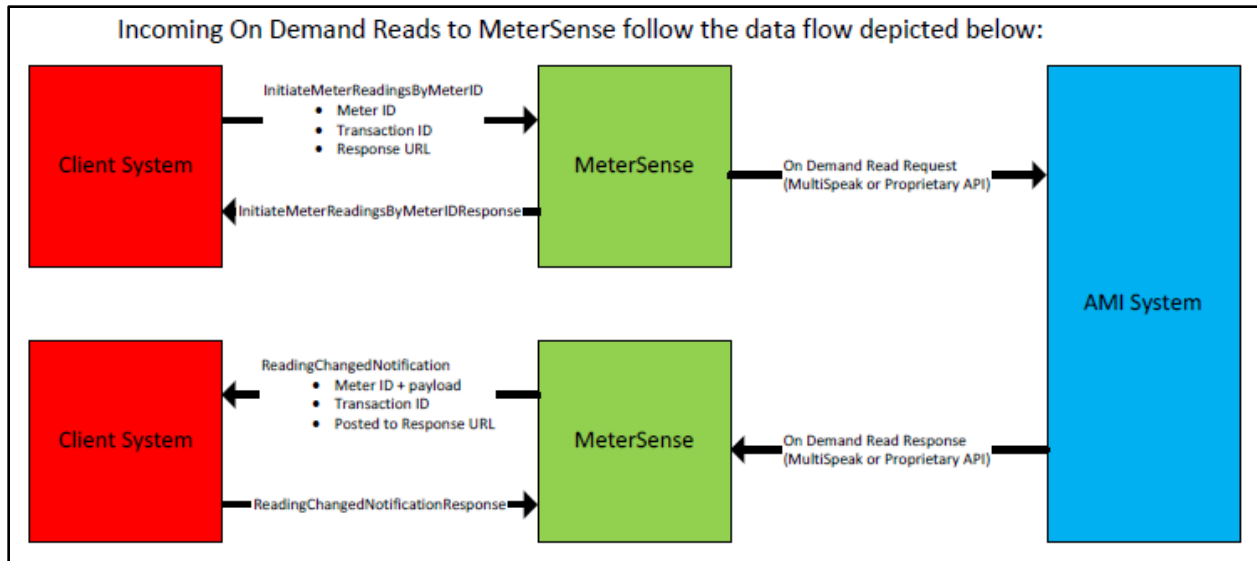
S&S enQuesta and SmartWorks Software will use a MultiSpeak® web service (synchronous SOAP call) call to request and receive the latest available read. S&S enQuesta v.6.0 will apply the correct rate to each register.

It is assumed that all reads required for the purpose of billing will be provided by the AMI system. Should **SmartWorks Compass** be required to perform calculation (e.g. TOU, Compound billing), the services can be brought into scope using the Change Management process.

9.7.2.4 Meter Action Initiation from CIS

The SmartWorks Software will provide the ability for a user to use the CIS to initiate a remote meter action (On Demand read).

MultiSpeak® methods will be used to accomplish this integration. The SmartWorks Software will act as the server end of MultiSpeak® an asynchronous command for a remote meter action from the CIS. The SmartWorks Software will broker the transaction by integrating with the AMI head end system.



9.7.2.5 Work Order Creation from MDM

The SmartWorks Software will have a MultiSpeak® interface with the CIS that allows the Process Automation rules to create service orders.

As part of the scope of this integration, SmartWorks will deliver up to three (3) business rules that will each enable the automation of one (1) Work order type and one (1) resulting action.

- For each account identified in existing Compass report, query CIS to determine if a corresponding Work order already exists for the Work order type provided by Customer.
- If the expected Work order does not already exist, create a new Work order in enQuesta CIS

Example of Use Cases:

- Non-Communicating meter
- Leak Detected
- Meter tamper

9.7.3 Geographic Information System (GIS) Integration - ESRI Base Map

The SmartWorks Software will be configured so that meter data will be overlaid on top of one or more ESRI “Base Maps” via URL live link. With this capability, the Customer will be able to view meter data together with their other data layers within SmartWorks Software.

Customer will create URL and provide a custom base map to SmartWorks for configuration of **MeterSense**. This scope of integration assumes Customer is hosting ESRI on a web server and can provide a URL.

9.7.4 The Weather Network

The SmartWorks Software will integrate weather data services with daily feed of observed weather data received from the Weather Network weather station determined to be closest to Customer's location.

The following weather data, if provided by the weather station, will be imported into SmartWorks Software:

- Temperature (Hourly)
- Humidity (Hourly)
- Wind Speed (Hourly)
- Wind Direction (Hourly)
- Weather Conditions (Hourly)
- Precipitation (Daily)

This data is automatically downloaded from SmartWorks' data provider for a weather station or stations in the Customer's service area and is automatically inserted into the SmartWorks Software database.

9.7.5 Customer Portal –(Capricorn)

The SmartWorks Software will implement an interface between SmartWorks Compass and SilverBlaze. SmartWorks will facilitate the integration of the MeterSense MDMS with SilverBlaze to provide usage data for residential meters and support the implementation of the portal.

SilverBlaze will build integration points for Customer smart meter usage details using SmartWorks MDMS MultiSpeak web services or SmartWorks MDMS SOAP API.

9.8. Project Management Approach

9.8.1 Communication/Relationship Management Approach

Communication Management is the cornerstone of any project and a well-structured communication plan is a must from the beginning. Regular, or ongoing, communications include those opportunities to communicate with project team members, sponsors, steering committee members, and other key stakeholders on a regular basis. These types of communication include regular status reports, scheduled project team meetings, and monthly updates with the steering committee or with executive project sponsors on a project.

9.8.2 Guiding Principles

Our intent is to work together to establish a long-term partnership between our companies. The project will last months, but the business relationship will last for years.

The following guiding principles will assist in meeting this goal:

- Openness, honesty, credibility, and trust in all communications.
- All parties will conduct themselves with respect in all situations.
- Two-way communication, with feedback valued and requested.
- Understanding that different team members may have different objectives for the solution. We will seek to understand each other's point of view and work collaboratively to find solutions to problems.
- Recognition that this is a project and not normal daily operations. All team members may not be accustomed to the demands of a project and will have to readily adjust to the needs of meeting deadlines and multi-tasking for this project to be successful.
- Project Team and Management ownership of the communication program with ongoing commitment to the communications process.
- Recognition that the project schedule is our agreed to timeframe for the completion of the work and that we will work together to ensure that the schedule remains viable by collaborative coordination of our teams' efforts and transparent communications.
- Adhering to decisions made. This is vital to minimize impact on the Project Schedule. If later, adjustments are absolutely required, they can be made following the Change Management process.
- Incorporate SmartWorks best practices when possible, to maximize the capability of the Solution.
- Focus on our project goals and on activities that will continue to move the project forward to a successful outcome.

These principles define how we wish to work together during the implementation of the Solution. Due to the pressures of a project such as this and the inevitable risks (unknowns) that will be introduced over the life of the project, there may be times when both parties may not feel we are working well together or towards the same objectives. At those times both parties will refocus on the critical importance of the project, review the guiding principles, and find a mutually agreeable path through the difficulties.

9.8.3 Goals of Communication Strategy

During the Project Kick Off meeting, a Communication Plan will be presented and reviewed with Customer staff based on the following Communication Strategy:

- Keep people informed on project status
- Focus on communication to effectively prepare Customer for their software rollout
- Focus on communication to build support for project
- Monitor effectiveness of communication

9.8.4 Effective Communication Guidelines

- There are multiple audiences for project communications

- Communication needs to be:
- Tailored to specific groups
- Regular and informative
- Real-time and relevant
- Communication content needs to be of interest to the target audience

Following is the proposed communication plan for the project:

What	Who / Target	Purpose	When / Frequency	Type/Method(s)
Project Kick Off	All stakeholders	Communicate plans and stakeholder roles/responsibilities.	At or near Project Start Date	Remote Meeting
Status Reports	All stakeholders and Project Office	Update stakeholders on progress of the project.	Weekly	Distribute electronically using agreed Status Report template
Team Meetings	Entire Project Team	To review detailed plans (tasks, assignments, and action items) and risks.	Weekly	Meeting Review Project Plan, Status Reports, and Risk Log
Project Management Status Meetings	Sponsor(s) and Project Manager (SmartWorks, Customer, AMI Vendor, CIS Vendor)	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Weekly	Meeting
Executive Sponsor Meetings	Executive Sponsor(s) and Project Manager(s)	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Monthly	Meeting

9.8.5 Work Management Approach

Work will be managed through the use of the Project Schedule. The SmartWorks Project Manager will have the responsibility to create and maintain the Project Schedule for the modules and integrations listed in this Statement of Work. It is expected that Customer Project Manager will work in conjunction with the SmartWorks Project Manager to ensure that key Customer activities that impact the project are also contained in the Project Plan.

During and after the User Acceptance Testing phase, the SmartWorks TeamSupport solution will be used to track project issues such as bugs or other lower level action items. The entire project team (SmartWorks / Customer) will have access to TeamSupport.

9.8.6 Change Management Approach

This document serves as the complete understanding, between Customer and SmartWorks, as to what the current Statement of Work entails. Customer and/or SmartWorks may propose changes to the scope of work defined in this document ("Change"). The Change Order Form (Appendix A) must be used for all change requests. SmartWorks shall have no obligation to commence work in connection with any change until the fee and schedule impact of the change is agreed upon in a written Change Order Form signed by the designated representatives from both parties.

Upon a request for a change, SmartWorks shall submit the standard Change Order Form describing the change, including the impact on the schedule, budget, scope and expenses. The Change Management Process that will be employed is defined below:

- Identify and document proposed change
- Assess impact of proposed change
- Estimate required effort / cost of proposed change
- Submit Change Order for Approval / Disapproval
- Communicate Change Order Decision
- If Change Order is Approved:
 - Assign responsibility
 - SmartWorks to update Project Plan as needed
 - If there are project delays due to Change Request, SmartWorks may create subsequent Change Requests to address those delays
 - Monitor and report progress

Within ten (10) consecutive business days of receipt of the Change Order Form, Customer shall either:

- Accept the proposed change by signing the Change Order Form, or
- Reject the proposed change and inform SmartWorks Project Manager via email.

If SmartWorks is advised not to perform the change, or in the absence of Customer acceptance or rejection within ten (10) days, then SmartWorks:

- Will not perform the proposed change and will proceed only with the original services
- May create a new Change Request to accommodate the expenses incurred during the discussion of the proposed change. This may happen only in cases where:
 - Customer takes longer than ten (10) days to reach the decision, or does

- not reach a decision, and/or
- Overall project timeline, budget or scope are affected.

9.8.7 Risk Management Approach

Risk Management planning is an important part of project management and a core component of the SmartWorks Project Implementation Methodology. Risk Management planning is about defining the process of how to engage and oversee risk management activities for a project. Having a viable plan on how to manage risk allows one to mitigate risk versus attempting to decide in the midst how to handle a risk. The earlier Risk Management planning is engaged within the project increases the probability of success of risk mitigation activities. Risk Management planning will be initiated at the start of the project by having the initial discussion with Customer prior to, or during the Project Kick Off Meeting.

Risks can be raised by any project stakeholder, including project team members, Customer, third-party integrators, or vendors during the project.

Risks will be entered on the Risk Log and categorized by type and priority. The Project Manager will investigate the risk and, if necessary, will update the Risk Log with background information to place the risk in perspective.

At a minimum, the following information will be captured and tracked for all risks:

- RISK ID – each risk should have a unique ID
- TITLE – short description of the risk (usually a few words or a sentence, helpful when reporting risks)
- DESCRIPTION – complete description of the risk, the more details the better
- IMPACT – impact to the project and/or business in terms of money, time, and/or quality
- PROBABILITY – indicate the probability of the risk
- SEVERITY – risk severity (typically values could be “critical”, “high”, “medium”, “low”)
- TYPE – type of risk (e.g. technical, process, organizational, etc.)
- RISK MITIGATION PLAN – detailed description of actions (including dates and owners) required mitigating the risk
- STATUS – current status of the risk (typical values are “open” or “closed”)

The following Risk Matrix will be used to establish the severity of risk:

PROBABILITY	High (3)	3	6	9
	Medium (2)	2	4	6
	Low (1)	1	2	3

	Low (1)	Medium (2)	High (3)
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Throughout the duration of the project, as risks are identified they will be added to the Risk Log and will be reviewed at weekly Status Meetings with the team to determine the possibility of occurrence and the best plan for mitigation.

If identified risk(s) and/or mitigation strategies are deemed to have an effect on project timeline, or budget, or scope, a Change Request may be created, as per section 0, to address those concerns.

Based on SmartWorks' experience, the following have been identified as dependencies that could have negative effect on project timeline, cost and/or scope and could become potential risks:

- VPN ports not opened for SmartWorks personnel and for communication between integration points
- AMI not ready on time, or not sending the data
- Data source not ready for DataSync
- Resources not available to provide required information

Early engagement and commitments on timelines by all parties can significantly reduce risks linked to the above dependencies. SmartWorks will do its best to not change assigned personnel during the course of this project. Should any change be considered, SmartWorks will communicate such consideration to Customer.

9.8.8 Acceptance Management Approach

In collaboration with Customer, SmartWorks will develop and maintain a central listing of all Deliverables and Work Products to be completed throughout the project "**Deliverable Acceptance Criteria Document**". The Deliverable Acceptance Criteria Document will also set forth the acceptance criteria for each deliverable ("**Deliverable Acceptance Criteria**").

A baseline version of the Deliverable Acceptance Criteria document will be created through a combined effort between SmartWorks and Customer during the Initiation and Build phase. The Deliverable Acceptance Criteria Document will be reviewed with Customer regularly and updated to record the approval of the Deliverables as they are accepted. The approvals of the Deliverables in the Acceptance Criteria document will

constitute final system acceptance.

A core component of the Deliverable Acceptance Criteria Document will be the execution of the test plan and test cases. The Testing Plan, also created in the Initiation and Build phase, and the Test Case Scenarios, created during the Initiation and Build phase, are customized specific to the implementation for Customer. The Test Plan and Test Case Scenarios are used for testing and will be provided to Customer for their own review and testing of the system. SmartWorks Implementation Team and Customer staff will work as a team to ensure that exhaustive testing is carried out. During the Testing phase, when the system testing is being executed, the Project Team will be meeting to review the testing status and ensure that scheduled testing is being carried out.

Once system testing has been completed, and Customer staff has been trained on the system, Customer staff will have the necessary tools to review the system for acceptance. Customer will have access to its own instance of the SmartWorks Software, loaded with their data, to train and test on. SmartWorks Consultants assigned to Customer will provide training of the system to the staff, along with training documents, consisting of User Guides and PowerPoint. Training will be conducted onsite and using WebEx sessions, phone calls and documentation when needed.

9.8.9 Implementation Approach – Phases, Deliverables, Key Milestones

Successful implementation is based on SmartWorks' understanding of Customer requirements and experience gained through the implementations of SmartWorks Software at various Customers across North America. 's project will leverage SmartWorks' Implementation Methodology which has been honed and perfected over the company's long history to successfully guide project implementation from Initiation to Deployment.

9.8.10 Implementation Methodology

The SmartWorks Methodology is based on the following guiding principles:

- *Promote and foster customer ownership of solution;*
- *Establish and maintain consistent and regular touchpoints with Customer;*
- *Ensure that project performance is visible, measurable, tracked and risks identified and mitigated – No Surprises!; and*
- *Seek to minimize customer cost and time while still achieving project objectives.*

The Implementation Methodology consists of two main areas: **Project Management** and **SmartWorks Software Implementation Management** where each has associated (where applicable):

- Processes / Checklists / Matrices that define how to operate;
- Deliverables that are formal outputs that require Customer sign-off;

- Work Products that are outputs produced as part of the work required to achieve the desired project goals; and
- Tools / Assets that are leveraged to produce defined outputs.

The **Project Management** area defines how projects are managed. It includes:

- **Communication/Status Management** aimed at establishing internal and external communications as well as monitoring and communicating project status and effort spent;
- **Relationship Management** aimed at measuring the pulse of Customers and partners;
- **Work Management** aimed at capturing and monitoring effort, cost and work to be performed;
- **Change Management** aimed at defining and controlling project scope;
- **Risk Management** aimed at planning, mitigating, tracking and monitoring risks;
- **Acceptance Management** aimed at ensuring that expected deliverables are delivered and accepted; and
- **Financial/Contract Management** aimed at monitoring project financial health.

The **Implementation Management** area defines the Implementation Phases and associated Work Products and Deliverables that are part of this project. The Implementation Phases are defined in the following table:

Implementation Phases	Objectives	Key Work Products and Activities	Deliverables
Phase I Initiation and Build Key Milestones <ul style="list-style-type: none"> • <i>Kick Off Meeting Held</i> • <i>Project Plan Reviewed/Updated</i> 	<ul style="list-style-type: none"> • <i>To Kick Off project and establish successful working relationship</i> • <i>To obtain detailed agreement on Project Plan</i> • <i>To install and perform base configuration work</i> 	<ul style="list-style-type: none"> • <i>Kick Off Meeting</i> • <i>Implementation Questionnaire</i> • <i>Acceptance Criteria Document</i> • <i>Initial Configuration complete</i> • <i>Physical Architecture Recommendation</i> 	<ul style="list-style-type: none"> • <i>SmartWorks Software installation</i> • <i>Software Overview Training Session</i>

Implementation Phases	Objectives	Key Work Products and Activities	Deliverables
Phase II Analysis <i>Key Milestones</i> <ul style="list-style-type: none"> • <i>Integration Documents signed</i> • <i>Functional and Integration Requirement Document signed</i> 	<ul style="list-style-type: none"> • <i>To demonstrate base configuration functionality</i> • <i>Conduct Discovery Sessions</i> • <i>To obtain an agreement on what is remaining to be delivered</i> 	<ul style="list-style-type: none"> • <i>Discovery Session(s) Summary</i> 	<ul style="list-style-type: none"> • <i>Functional and Integration Requirements Document</i>
Phase III Development <i>Key Milestones</i> <ul style="list-style-type: none"> • <i>Solution Feature / Code / Configuration Complete</i> 	<ul style="list-style-type: none"> • <i>To configure according to requirements and build the Solution components</i> • <i>To write associated test cases that Customer would execute for acceptance of the Solution</i> 	<ul style="list-style-type: none"> • <i>Test Scenarios / Cases</i> • <i>User Acceptance Test Scripts</i> • <i>Base Solution Installed and Configured</i> 	<ul style="list-style-type: none"> • <i>SmartWorks Software configuration</i> • <i>SmartWorks Software integration</i>
Phase IV Testing <i>Key Milestones</i> <ul style="list-style-type: none"> • <i>User Acceptance Testing Complete</i> 	<ul style="list-style-type: none"> • <i>To move the Solution to a known state of quality and ready for deployment</i> • <i>To train customer on their Solution</i> 	<ul style="list-style-type: none"> • <i>Functional Testing Results</i> • <i>Integration Testing Results</i> • <i>User Acceptance Test (UAT) Results</i> • <i>Accepted Solution per UAT</i> 	<ul style="list-style-type: none"> • <i>Functional and Process Training</i> • <i>User Acceptance Testing Support</i> • <i>Go-Live Plan Document</i>

Implementation Phases	Objectives	Key Work Products and Activities	Deliverables
Phase V Deployment <i>Key Milestones</i> <ul style="list-style-type: none"> <i>Solution Live</i> 	<ul style="list-style-type: none"> <i>To move the Solution into a production environment state and transition support to the operations team</i> 	<ul style="list-style-type: none"> <i>Solution Live</i> 	<ul style="list-style-type: none"> <i>Installation Acceptance</i>

To minimize project costs, the majority of project work will be performed at one of the SmartWorks' locations except for key project activities such as Discovery Sessions where face-to-face is deemed more effective for a successful project. Throughout the project, SmartWorks' Project Team will be engaged with Customer using WebEx sessions to review configuration work and provide remote support.

9.8.11 Implementation Timeline

The estimated duration to implement the SmartWorks Software within scope is approximately 8-10 months.

The actual duration and scheduling of project activities will be evaluated during the Initiation and Build phase and a detailed baseline Project Plan will be jointly created at that time.

A baseline plan will be delivered within fourteen (14) calendar days of the project Kick Off Meeting allowing Customer an opportunity to review the Project Plan over the next ten (10) business days. If Customer does not agree to the proposed Project Plan, Customer and SmartWorks will work collaboratively to develop a mutually agreeable plan within a reasonable timeline.

The Project Plan will include a project completion date (the date where project is completed based on the criteria in section 9.12 Project Completion Criteria). The Project Plan will be reviewed periodically during the project and may be revised. Changes to the project completion date will require a Change Order if it is mutually determined that the delay in completion is the fault of the Customer or Customer's third-party vendors.

9.9. Validation/Testing Approach

Systems Testing is an activity that is addressed through all Phases of the SmartWorks Software Implementation Methodology but is the focus of the Testing Phase.

To ensure that a quality Solution is delivered to Customer, the Testing Phase focuses on validating that the configured and developed Customer Solution performs per agreed upon requirements for each module. This includes three (3) main testing activities:

- **Unit Testing to test** individual Solution components to validate that each component meets the specifications set forth during the project.
- **Functional Testing** to test the core Solution components (Configuration, Interfaces, Reports, and Modifications) against agreed upon requirements as defined in the Functional and Integration Requirements Document based on the test cases and scenarios developed during the Development phase.
- **Integration Testing** to test the end-to-end process based on business processes and scenarios developed during the Development phase.
- **User Acceptance Testing** to provide Customer the opportunity to validate that Solution behaves per agreed upon requirements as defined in the Functional and Integration Requirements Document based on the test cases and selected scenarios collaboratively developed with Customer during the Development phase. User Acceptance Testing sign-off per agreed upon criteria is necessary to move to Deployment phase.

The progress for performing the three (3) testing activities will be logged into TeamSupport. At a minimum, the TeamSupport will include the following information:

- The test name
- The objective for performing the test
- A Description of the steps required to perform the test **“Test Script”**
- The expected result that will demonstrate the test is successful **“Test Acceptance Criteria”**
- The actual result observed after performing the test **“Test Result”**

Prior to commencing Functional Testing and Integration Testing activities, the Test Scripts and Test Acceptance Criteria will be documented in TeamSupport by SmartWorks using Test Scripts that have been defined by SmartWorks.

While performing testing activities, the tester will update the TeamSupport with the Test Result and will make a determination as to whether the result meets the Test Acceptance Criteria.

Functional Testing and Integration Testing will be performed by SmartWorks. User Acceptance Testing will be performed by Customer with support from SmartWorks.

9.9.1 User Acceptance Testing Procedure

Once Functional Testing and Integration Testing have been completed, and Customer staff has received Functional Process Training, Customer staff will have the necessary tools to perform User Acceptance Testing.

Prior to commencing User Acceptance Testing activity, the Test Scripts and Test Acceptance Criteria will be documented in TeamSupport by SmartWorks collaboratively with Customer.

Customer will have its own instance of The SmartWorks Software, loaded with its data, to train and test on. The Application SmartWorks assigned to Customer will provide the documents and training of the system to the staff. Training will be conducted onsite and using WebEx sessions, phone calls and documentation as needed.

Customer will have a defined period of time to perform User Acceptance Testing on the Solution (including testing in a live production environment) (the “**Acceptance Testing Period**”). The length of the Acceptance Testing Period will be defined in the Detailed Project Plan. This User Acceptance Testing Period will begin upon formal written notification from SmartWorks to Customer that the SmartWorks Software has been configured and is ready for testing. During such Acceptance Testing Period, both Parties shall work diligently and dedicate the appropriate resources to conclude the evaluation in a timely and efficient fashion.

If the Solution substantially meets the Functional and Integration Requirements Document, and substantially satisfies the testing criteria set forth in TeamSupport (together the “**Solution Acceptance Criteria**”), Customer will provide SmartWorks with written acceptance notice thereof, and the date of such notice to be the “**Actual Solution Acceptance Date**”.

In the event Customer determines that the results of a test do not meet the Solution Acceptance Criteria, following the initial User Acceptance Testing cycle, Customer will provide SmartWorks with written notice thereof, specifying in reasonable detail how the Solution failed to meet the Solution Acceptance Criteria. If Customer delivers to SmartWorks such notice of retesting, SmartWorks shall make all necessary corrections, repairs, fixes, modifications, or additions to or replacements of all or any part of the rejected SmartWorks Software as well as integrations for which SmartWorks is responsible so that it conforms to and performs in accordance with the Solution Acceptance Criteria. SmartWorks will have a defined period of time “**Correction Period**” to correct any deficiency, after which the User Acceptance Testing will be resumed. The Correction Period will be defined in the Detailed Project Plan. Should the Customer require additional testing outside of SmartWorks’ standard testing routines, such as for Disaster Recovery, these can be brought into scope via Change Order.

In the event retesting is required by Customer, the User Acceptance Testing process will then be repeated.

Customer shall not unreasonably reject or fail to accept the Solution based on any Severity 3 issues, as defined in the table below.

Severity Level	Description
1	<ul style="list-style-type: none"> • System Down (Software Application, Hardware, Operating System, Database) • Program errors without workarounds • Incorrect calculation errors impacting one-third of records • Error messages preventing data integration and update • Performance issues of severe nature impacting critical processes • Security Issues
2	<ul style="list-style-type: none"> • System errors that have workarounds • Calculation errors impacting less than one-third of records • Reports calculation issues • Performance issues not impacting critical processes • Usability issues • Workstation connectivity issues (Workstation specific)
3	<ul style="list-style-type: none"> • Training questions, how to, or implementation of new processes • Aesthetic issues • Issues where a workaround is available for a large majority of cases • Recommendations for enhancements on system changes • Questions on documentation • Test environment issues or questions

During the Acceptance Testing Period, Customer may in collaboration with SmartWorks, acting reasonably, extend the Acceptance Testing Period, the Correction Period, and the Expected Solution Acceptance Date (such that the extended Acceptance Testing Period shall expire on the revised Expected Solution Acceptance Date). During the Acceptance Testing Period, Customer should provide written notification to SmartWorks of any deficiency of a test result. Any issues identified after the end of the Testing Period will be address by SmartWorks according to the Support and Maintenance agreement.

9.10. Software Progression and Configuration Management

During the course of the project, updates are performed as described in the table below.

Phase(s)	Environment	Updates	Details
Initiation and Build Analysis Development	Pre-production	Configuration	Performed on an ongoing basis by SmartWorks Implementation Team. No Customer approval required.
		Software updates	Performed on an ongoing basis by SmartWorks Implementation Team. No Customer approval

Phase(s)	Environment	Updates	Details
			required.
		Software upgrades	Not performed without prior agreement between SmartWorks and Customer.
Testing	Pre-production	Configuration	Performed to address issues raised as a result of UAT.
		Software updates	Performed to address issues raised as a result of UAT. Release notes will be available upon request.
		Software upgrades	Not performed.
Deployment	Pre-production	Configuration	Performed for items related to Go-Live deployment activities.
		Software updates	Not performed, unless issues found during Go-Live deployment activities. Requires agreement between SmartWorks and Customer.
		Software upgrades	Not performed.
Deployment	Test*	Configuration	Can be performed by Customer to test additional configurations for Post Go-Live.
		Software updates	Not performed, unless exception scenario is encountered. Requires agreement between SmartWorks and Customer.
		Software upgrades	Not performed.
Post Go-Live	Pre-production & Test	Configuration	See Software Support Agreement
		Software updates	See Software Support Agreement
		Software upgrades	See Software Support Agreement

*Once the Test instance is setup during the Deployment phase, the migration of items (configuration, updates or upgrades) from Test to Production will be evaluated for each scenario and a plan will be agreed upon between Customer and SmartWorks.

9.11. Customer Resource Involvement

SmartWorks strongly believes that a successful implementation project requires that both Customer and SmartWorks resources work openly and collaboratively towards a common objective. As such, Customer's involvement will be required through all phases

of the implementation project. SmartWorks also believes that the involvement of key Customer resources will help with the organizational change management activities that are essential to obtain acceptance of the new solution.

The factors that will determine the size of Customer's team includes the following:

- The level and expertise of each of the Customer Project Core Team members;
- The ability of Customer Project Manager to make decisions regarding the project;
- Whether current job responsibilities will interfere with Core Team responsibilities;
- The amount of business reengineering that Customer determines is necessary; and
- The number of personnel that Customer will use to run their Solution, which in turn affects the amount of training needed.

Based on SmartWorks' experience with other clients, the following list outlines the anticipated involvement of Customer throughout the implementation project, by phase.

9.11.1 Phase I: Initiation and Build

1. Work with the SmartWorks to develop the Project Schedule.
2. Identify users of the Solution.
3. Complete the Implementation Questionnaire provided by SmartWorks. This questionnaire provides SmartWorks with the technical and environmental details required to configure the SmartWorks Software.
4. Ensure that any third-parties required for the success of this project such as the AMI and CIS vendors have been informed and that they are ready to participate and contribute on an as-required basis.
5. Install VPN connection(s).
6. Assist with ensuring that SmartWorks Software is accessible from within Customer environment.

9.11.2 Phase II: Analysis

1. Ensure the staff members that have been identified to participate in Discovery Session(s) are available on dates agreed to and scheduled.

9.11.3 Phase III: Development

1. Provide and ensure all required technical staff are available on dates agreed to and scheduled.
2. Create User Acceptance Testing Plan, including Test scenarios.

9.11.4 Phase IV: Testing

1. Determine the appropriate staff to be trained.
2. Ensure the staff members that have been identified to participate in the training sessions are available on dates agreed to and scheduled.
3. Assist with Functional / Integrated Testing.
4. Conduct User Acceptance Testing.

5. Log issues in the SmartWorks TeamSupport system (a web-based issue tracking system). The issues logged in TeamSupport will be addressed by SmartWorks Consultants per triage and priority.
6. Assist SmartWorks in developing a Go-Live Plan Document.

9.11.5 Phase V: Deployment

1. Assist in activities as defined within the Go-Live Plan Document.

9.12. Project Completion Criteria

Milestone	Deliverable/Completion Criteria	Assumptions/Dependencies
Contract execution		<ul style="list-style-type: none"> • Agreements signed by all parties
Software installation	<ul style="list-style-type: none"> • Pre-production system provisioned 	<ul style="list-style-type: none"> • Introduction call between SmartWorks and Customer Project Managers held prior to installation
Discovery Session held	<ul style="list-style-type: none"> • Team Introduction • Confirm project planning and review of Statement of Work • Initial review of Data Mapping requirements and implementation Questionnaire 	<ul style="list-style-type: none"> • Data Mapping requirements and implementation Questionnaire have been presented but will be updated throughout the project
Initial DataSync integration completed	<ul style="list-style-type: none"> • Initial Data Mapping requirements completed • Initial Implementation Questionnaire completed • Initial DataSync completed for pre-defined test meters • Compass Overview training session has been delivered 	<ul style="list-style-type: none"> • Customer provided timely input for the documentation presented during Kick Off • Acceptance only includes pre-defined test meters • 3rd parties provided requested data as per agreed upon schedule • Initial DataSync setup refers to the initial setup and may need further configuration before Completion of Integration Milestone.
Initial AMI integration completed	<ul style="list-style-type: none"> • Initial Implementation Questionnaire completed • AMI data populated in MDM for pre-defined test meters • Compass Overview training session has been delivered 	<ul style="list-style-type: none"> • Customer provided timely input for the documentation presented during Kick Off • Acceptance only includes pre-defined test meters • 3rd parties provided requested data as per agreed upon schedule • Initial AMI integration refers to the initial file delivery and setup. Further configuration will be needed before Completion of Integration Milestone.

Milestone	Deliverable/ Completion Criteria	Assumptions/Dependencies
Completion of Process and System Review	<ul style="list-style-type: none"> Initial integrations as defined in section 3 of the SOW have been delivered Process and System Review as defined in section 2.8 has been delivered 	
Delivery of requirements documents	<ul style="list-style-type: none"> Discovery Sessions have been held (as outlined in Section 2.8) Initial requirements documents have been delivered to Customer for review 	<ul style="list-style-type: none"> Acceptance linked to initial delivery of documents Customer will complete review and comment on each draft of the Requirements Document within 10 Business Days to maintain adherence to the project schedule.
Completion of Functional and Process Training	<ul style="list-style-type: none"> Software modules as defined in section 2.5 available Training as defined in section 2.8 has been delivered 	<ul style="list-style-type: none"> SmartWorks provides agenda prior to training SmartWorks provides training plan prior to training Customer is engaged and completes training exercises Configuration has been completed, as mutually agreed upon between SmartWorks and Customer PMs
Completion of UAT	<ul style="list-style-type: none"> Test results documented by Customer Severity level 1 tickets have been addressed 	<ul style="list-style-type: none"> Test scripts have been defined by Customer Customer resources are available to perform testing for a period of 10 business days Tickets logged after completion of UAT will not delay acceptance
Transition to Support	<ul style="list-style-type: none"> Transition to Support meeting has been held 	

The Implementation Project is deemed complete once the following criteria have been met:

- An agreed upon sample of AMI meters representing different meter types and location classes have been installed and tested during User Acceptance Testing, within the project timeline indicated in section 9.8.11.
- Solution Acceptance has been given by Customer.
- SmartWorks Software Functionality within scope of this SOW has been deployed for a minimum of thirty (30) calendar days "Post Implementation Grace Period".
- Severity Level 1 issues identified during the Post Implementation Grace Period have been addressed. The Severity Matrix Table presented in section 9.8.7, defines the Severity Level 1 issues.

Customer will be transitioned to support upon completion of the project. Severity Level

2 and 3 issues logged in Team Support within the first three (3) weeks of the Post Implementation Grace Period will be reviewed by the Implementation Team prior to the transition to support and if possible, will be addressed prior to the end of the Grace Period. After the transition to support all outstanding Severity Level 2 and 3 issues will be addressed following the Master Support and Maintenance Agreement.

9.12.1 Completion Criteria Summary

Milestone	Deliverable/ Completion Criteria	Assumptions/Dependencies
Contract execution		<ul style="list-style-type: none"> • Agreements signed by all parties
Software installation	<ul style="list-style-type: none"> • Pre-production system provisioned 	<ul style="list-style-type: none"> • Introduction call between SmartWorks and Customer Project Managers held prior to installation
Discovery Session held	<ul style="list-style-type: none"> • Team Introduction • Confirm project planning and review of Statement of Work • Initial review of Data Mapping requirements and implementation Questionnaire 	<ul style="list-style-type: none"> • Data Mapping requirements and implementation Questionnaire have been presented but will be updated throughout the project
Initial DataSync integration completed	<ul style="list-style-type: none"> • Initial Data Mapping requirements completed • Initial Implementation Questionnaire completed • Initial DataSync completed for pre-defined test meters • Compass Overview training session has been delivered 	<ul style="list-style-type: none"> • Customer provided timely input for the documentation presented during Kick Off • Acceptance only includes pre-defined test meters • 3rd parties provided requested data as per agreed upon schedule • Initial DataSync setup refers to the initial setup and may need further configuration before Completion of Integration Milestone.
Initial AMI integration completed	<ul style="list-style-type: none"> • Initial Implementation Questionnaire completed • AMI data populated in MDM for pre-defined test meters • Compass Overview training session has been delivered 	<ul style="list-style-type: none"> • Customer provided timely input for the documentation presented during Kick Off • Acceptance only includes pre-defined test meters • 3rd parties provided requested data as per agreed upon schedule • Initial AMI integration refers to the initial file delivery and setup. Further configuration will be needed before Completion of Integration Milestone.
Completion of Process and System Review	<ul style="list-style-type: none"> • Initial integrations as defined in section 3 of the SOW have been delivered • Process and System Review as defined in section 2.8 has been delivered 	
Delivery of requirements documents	<ul style="list-style-type: none"> • Discovery Sessions have been held (as outlined in Section 2.8) 	<ul style="list-style-type: none"> • Acceptance linked to initial delivery of documents

	<ul style="list-style-type: none"> Initial requirements documents have been delivered to Customer for review 	Customer will complete review and comment on each draft of the Requirements Document within 10 Business Days to maintain adherence to the project schedule.
Completion of Functional and Process Training	<ul style="list-style-type: none"> Software modules as defined in section 2.5 available Training as defined in section 2.8 has been delivered 	<ul style="list-style-type: none"> SmartWorks provides agenda prior to training SmartWorks provides training plan prior to training Customer is engaged and completes training exercises Configuration has been completed, as mutually agreed upon between SmartWorks and Customer PMs
Completion of UAT	<ul style="list-style-type: none"> Test results documented by Customer Severity level 1 tickets have been addressed 	<ul style="list-style-type: none"> Test scripts have been defined by Customer Customer resources are available to perform testing for a period of 10 business days Tickets logged after completion of UAT will not delay acceptance
Transition to Support	<ul style="list-style-type: none"> Transition to Support meeting has been held 	

9.13. Assumptions

The Services, fees and delivery schedule for this project are based upon the following assumptions:

- This SOW defines the scope of work for SmartWorks and does not include any work or expenses required from other vendors including GIS, AMI, etc.**
- This project currently has, and will continue to have, the support of senior Customer management and will be assigned sufficient priority with respect to other projects to ensure its success.
- Customer will assign a Project Manager to act as an internal resource and guide throughout this project.
- Customer will secure the appropriate staff in a timely fashion in order to discuss or review the various materials produced when required, provided SmartWorks gives reasonable notice of such request.
- SmartWorks will provide a written agenda and notice of any prerequisites to prior to any onsite or remote sessions.
- SmartWorks will provide adequate resources to support the efforts to complete the project as schedules and within the constraints of the project budget.
- SmartWorks will provide the resumes for resources assigned to the project upon 's

request.

8. The SmartWorks Solution implementation is dependent upon accurate and timely information cooperation and delivery of third-party vendors solutions in order to achieve functional integration. SmartWorks will identify those dependencies to Customer and create a mutually agreed schedule to provide the assistance and information. Customer will ensure the cooperation and involvement of third-party vendors on or before the agreed schedule date. Failure to achieve delivery of the identified dependency on the agreed schedule will result in a change order being issued.
9. Customer will secure, as required and in a timely fashion, the assistance and cooperation of third-party vendors (e.g. AMI, AMR,) to ensure a successful implementation. A Change Order will be created if the third-party vendor is unavailable or non-cooperative and as such results in an impact to the schedule or effort.
10. Third-Party vendor solutions are able to provide data required by the SmartWorks Software as well as accept information provided by the SmartWorks Software.
11. All third-party software and hardware products are assumed to perform correctly in Customer environment, in accordance with the appropriate third-party vendor's specifications.
12. Any upgrade to third-party software resulting in changes to the initial integrations requirements, will be subject to a Change Order during implementation. A separate quote will be issued after transition to Support has occurred.
13. All documentation provided by Customer shall be up-to-date and accurate or if that is not the case, advise SmartWorks as such.
14. All network components supplied by Customer are working properly and are free of defects and will meet minimum industry standards provided during the project.
15. To minimize project costs, the majority of project work will be performed at one of the SmartWorks' locations except for project activities where onsite is deemed more effective.
16. Customer will provide the appropriate monitored remote access to its network, facilities, and systems as may be required to perform activities from one of SmartWorks' locations. SmartWorks shall abide by all rules and directions of Customer when accessing Customer's network, facilities or. A Change Order will be created if appropriate remote access to its network is not available during agreed upon business hours, resulting in project delay or additional fees.
17. Any items not explicitly identified within this document are considered out of scope. Any changes to those responsibilities and/or deliverables will be considered a change in scope for the project. Any proposed change to the project scope must be put into written format and be submitted to SmartWorks during this project for review and consideration.

10. Document Acceptance and Sign off

Accepted on this day by:

AUGUSTA UTILITIES DEPARTMENT

City of Augusta

Systems & Software

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____