MultiSpeak Version 4.1 Interoperability Assertion

Statement of Interoperable Functionality between:

Vendor(s)	Product	Product Version	Role	Batch Interface	Web Client Interfaces	Web Server Interfaces
Harris Utilities	MeterSense	4.0	CB		CB	
Silver Spring Networks (SSN)	UtilityIQ	4.9	MR			MR
Harris Utilities	MeterSense	4.0	CB			CB
Silver Spring Networks	UtilityIQ	4.9	MR		MR	
Harris Utilities	MeterSense	4.0	CB		CB	
Silver Spring Networks	UtilityIQ	4.9	CD			CD
Harris Utilities	MeterSense	4.0	CB			CB
Silver Spring Networks	UtilityIQ	4.9	CD		CD	

Summary:

Web Service interfaces using MultiSpeak® 4.1 standards were developed in order to provide the following capabilities to utilities that have a Silver Springs Networks (SSN) AMI implementation using UtilityIQ (UIQ) and MeterSense Meter Data Management (MDM):

- Enable on-demand reads to be initiated from MeterSense MDM system so that readings collected by SSN UIQ can be returned to MeterSense for use by utility personnel in customer service processes.
- Enable MeterSense MDM to command the SSN UIQ system to send a real time request to immediately disconnect or reconnect power at a meter or to 'Arm' the meter for manual reconnect.

Prerequisites:

The Silver Springs Networks 's AMI system must be deployed, including network enabled meters, communications infrastructure and the SSN head end server (UIQ). The MultiSpeak interface must be enabled and configured in the SSN solution.

MeterSense MDM system must be deployed. The MultiSpeak interface must be enabled and configured in MeterSense.

Specific Vendor Assertions:

1. MeterSense MDM will request an instantaneous meter reading from SSN UIQ.

Importance to User: Utility users can respond to customer questions and better provide answers by verifying a meter read instantaneously during a conversation with the customer. This capability will also verify communications and power status at the meter to verify a reported outage.

How Achieved: Utility user can initiate the request through the MeterSense web user interface, at which time MeterSense requests a read from the meter by sending an `InitiateMeterReadingsByMeterID` request to UIQ. UIQ initiates a read to the meter and returns the data to MeterSense through a `ReadingChangedNotification`, for display to the user. Optionally, the action can be initiated by another application or automated workflow, with the results returned to the requesting application.

2. MeterSense initiates a remote disconnect or reconnection of service, which is executed via the SSN UIQ

Importance to User: The utility can perform a service disconnect on a single meter or list of meters remotely in situations such as move-out, termination of service or to suspend service for reasons of non-payment. The utility can reconnect service remotely in situations such as move-in, or to restore service following receipt of payment from a customer previously disconnected for non-payment.

How Achieved: Utility user initiates the command in the MeterSense web user interface, at which time MeterSense sends a request to SSN UIQ, via an `InitiateConnectDisconnect`. UIQ initiates a request to the meter to immediately disconnect power, reconnect power, or 'arm' the meter for manual reconnect. After the meter responds, SSN UIQ returns the new connect/disconnect state of the meter asynchronously with a `CDStatesChangedNotification`. If the meter doesn't communicate, the MeterSense process will time out.

Products: MeterSense MDM and SSN AMI
Summary of Interoperability Test Results (CB)

Table 1
MultiSpeak Methods (CB)

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (MR)	Verified Inter-operable3
FormattedBlockNotification	REC	Publisher sends new meter readings to the subscriber. Subscriber returns information about failed transactions.			
GetAccountByMeterIDAndServiceType	REC	Returns the requested customer account data given a meter identifier and service type.			
GetAccountByServiceLocationIDAndServiceType	REC	Returns the requested customer account data given a service location identifier and service type.			
GetAccountsByCustomerID	REC	Returns the requested accounts given the customer identifier.			
GetAllAccounts	REC	Returns account data for all customer accounts.			
GetAllCustomers	REC	Returns all required customer data for all customers.			
GetAllCustomersByServiceType	OPT	Returns all customers of a given serviceType (electric, gas, water, or propane).			
GetAllElectricMeters	OPT	Returns all electric meters.			
GetAllGasMeters	OPT	Returns all gas meters.			
GetAllMeters	REC	Returns all required Meter data for all Meters.			
GetAllMetersByAccountNumber	OPT	Returns the requested Meter(s) data given Account Number.			
GetAllMetersByServiceType	OPT	Returns all meters of a given serviceType (electric, gas, water, or propane).			
GetAllOtherMeters	OPT	Returns all other meters.			
GetAllPropaneMeters	OPT	Returns all propane meters.			
GetAllServiceLocations	REC	Returns all required Service Location data for all Service Locations.			
GetAllServiceLocationsByServiceType	OPT	Requests from the CB all serviceLocations that have services of a given serviceType (electric, gas, water, or propane).			
GetAllWaterMeters	OPT	Returns all water meters.			
GetBilledUsage		Returns details of the billed usage for a specific account, for instance can be used by the Requester to reconcile its records with those in the CB.			
GetCustomerByCustomerID	REC	Returns the requested Customer details for a specific customer identified by Customer identifier.			
GetCustomerByDBAName	OPT	Returns the requested Customer if it exists.			

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (MR)	Verified Inter-operable3
GetCustomerByMeterID	OPT	Returns the requested Customer data given a meter identifier.			
GetCustomerByMeterIDAndServiceType	OPT	Returns the requested Customer data given a meter identifier and service type.			
GetCustomerByName	OPT	Returns the requested Customer(s) data given First and Last name.			
GetElectricMetersByAccountNumber	OPT	Returns electric meters, given the account number.			
GetGasMetersByAccountNumber	OPT	Returns gas meters, given the account number.			
GetMeterByCustomerID	REC	Returns the requested Meter(s) data given Customer ID.			
GetMeterByMeterID	REC	Returns the requested Meter data given meterID.			
GetMeterByServiceLocationID	REC	Returns the requested Meter(s) data given Service Location.			
GetMeterGroupMembers	OPT	Returns the members of a specific meter reading group.			
GetMeterGroupNames	OPT	Returns a list of names of meter reading groups.			
GetMeterGroupNamesByMeterID	OPT	Returns a list of names of meter reading groups for a specific meter.			
GetMeterHistoryByMeterID	OPT	Returns the meter history events for a specific meter, identified by meterID.			
GetMetersByAMRType	OPT	Returns the requested Meter(s) data given AMR vendor and device type.			
GetMetersByAccountNumberAndServiceType	REC	Returns all the meters for a given account number and service type.			
GetMetersByCustomerName	OPT	Returns all meters corresponding to a given customer name.			
GetMetersByEALocation	OPT	Returns the meters corresponding to a given location in the engineering connectivity model			
GetMetersByFacilityID	OPT	Returns the requested meters corresponding to a given customer's serviceLocation,			
GetMetersByHomePhone	OPT	Returns all meters corresponding to a given customer's home phone number.			
GetMetersBySearchString	OPT	Returns all meters corresponding to a given search string.			
GetMetersBySiteID	OPT	Returns the requested meters corresponding to a given customer's serviceLocation.			
GetModifiedCustomers	OPT	Returns all required customer data for all customers that have been modified since the specified sessionID.			
GetModifiedMeters	OPT	Returns all required customer data for all customers that have been modified since the specified sessionID.			
GetModifiedServiceLocations	OPT	Returns all required Service Location data for all Service Locations that have been modified since the specified sessionID.			

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (MR)	Verified Inter-operable3
GetModifiedTransformerBanksFromCB		Returns all transformer bank data from the CB that has been modified since the specified sessionID.			
GetPropaneMeterByAccountNumber	OPT	Returns propane meters, given the account number.			
GetServiceLocationByAccountNumber	REC	Returns the service location for a given account number.			
GetServiceLocationByCustomerID	REC	Returns the service location for a given customer ID.			
GetServiceLocationByGridLocation	OPT	Returns the service location for a given grid location.			
GetServiceLocationByLoadGroup	OPT	Returns the service location for a given load group.			
GetServiceLocationByMeterID	OPT	Returns the service location for a given meter identifier.			
GetServiceLocationByPhaseCode	OPT	Returns the service location for a given phase code.			
GetServiceLocationByServiceLocationID	REC	Returns the service location data for a given service location identifier.			
GetServiceLocationByServiceStatus	OPT	Returns the service location(s) for a given service status.			
GetServiceLocationByServiceType	OPT	Returns the service location(s) for a given service type.			
GetServiceLocationByShutOffDate	OPT	Returns the service location(s) for a given shut off date.			
GetServiceOrderByServiceOrderID	OPT	Returns a service order, specified by its serviceOrderID.			
GetServiceOrdersByServiceLocation	OPT	Returns the service orders that are associated with a specific service location.			
GetServiceOrdersByStatus	OPT	Returns the service orders that have a specified serviceOrder Status code.			
GetWaterMetersByAccountNumber	OPT	Returns water meters, given the account number.			
HistoryLogChangedNotification	OPT	Provides notification of a change in the History Log.			
InHomeDisplayExchangeNotification	OPT	Provides notification that in-home displays(s) have been deployed or exchanged.			
InHomeDisplayInstalledNotification	OPT	Provides notification that in-home display(s) have been installed.			
IntervalDataNotification	REC	sends new interval meter readings to the subscriber			
LoadProfileChangedNotification	REC	Provides notification of a change in the LoadProfile			
MeterBaseExchangeNotification	OPT	Provides notification that meter base(s) have been exchanged.			
MeterBaseInstalledNotification	OPT	Provides notification that meter base(s) have been installed.			
MeterEventNotification	REC	Provides notification of meter event(s)			
MeterExchangeNotification	OPT	Provides notification that meter(s) have been deployed or exchanged.			
MeterInstalledNotification	REC	Provides notification that meter(s) have been installed.			
MeterTestNotification		Provides notification of a completion of tests on meters.			
ModifyCBDataForCustomer	OPT	Allows client to modify CB data for customer objects.			
ModifyCBDataForMeters	OPT	Allows client to modify CB data for the Meter object.			

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (MR)	Verified Inter-operable3
ModifyCBDataForServiceLocations	OPT	Allows client to modify CB data for the Service Location object.			
ReadingChangedNotification	OPT	Provides notification of a change in meter reads.	X	X	X
ReadingScheduleResultNotification	OPT	Provides notification of the success or failure of meter reading schedule.			
Discovery					
DomainMembersChangedNotification	OPT	Enables a client to have changed information on domain members published to it.			
DomainNamesChangedNotification	OPT	Enables a client to have changed information on domain names published to it.			
GetDomainMembers	OPT	Requests a list of items in a domain.			
GetDomainNames	OPT	Requests the names of all lists of items (domains). These can be used to make sure that two programs use the same codes or descriptions.			
GetMethods	REQ	Requests a list of web service methods supported by the application.	X	X	X
GetPublishMethods	REC	Requester requests list of methods to which this server can publish information.			
Subscription and Network Management					
GetRegistrationInfoByID	REC	Requests the return of existing registration information for a specific registrationID.			
RegisterForService	REC	Establishes a subscription using a previously requested registrationID.			
RequestRegistrationID	REC	Requests of the publisher a unique registration ID that would subsequently be used to refer unambiguously to that specific subscription.			
UnregisterForService	REC	This method deletes a previously established subscription.			
PingURL	REQ	Queries status of the application.	X	X	X

Products: MeterSense MDM and SSN AMI
Summary of Interoperability Test Results (MR)
Table 2
MultiSpeak Methods (MR)

Method	MR	Importance to User	Supported by Server1 (MR)	Supported by Client2 (CB)	Verified Inter-operable3
AccountChangedNotification	OPT	Provides notification of a change in customer account(s)			
CancelDisconnectedStatus	OPT	Provides notification of meters that should be removed from disconnected status, i.e. made active.			
CancelPlannedOutage	OPT	Provides notification of cancellation of planned outage given a list of meterIDs.			
CancelUsageMonitoring	OPT	Provides notification of cancellation of zero usage monitoring, e.g. move-ins.			
CustomerChangedNotification	REC	Provides notification of a change in the customer object.			
DeleteMeterGroup	OPT	Publisher requests MR to eliminate a previously defined group of meters to address as a meter group.			
DeleteReadingSchedule	OPT	Requester deletes a previously established readingSchedule on the server, specified by sending the readingSscheduleID.			
DeleteSchedule	OPT	Requester deletes a previously established schedule, specified by scheduleID.			
DisableReadingSchedule	OPT	Requester disables a previously established readingSchedule.			
EnableReadingSchedules	OPT	Requester enables a previously established readingSchedule.			
EstablishMeterGroup	OPT	Publisher requests MR to establish a new group of meters to address as a meter group.			
EstablishReadingSchedules	OPT	Requester establishes a new readingSchedule			
EstablishSchedules	OPT	Requester establishes a new schedule			
GetAMRSupportedMeters	REC	Returns all meters that have AMR.			
GetConfigurationGroupMembers	OPT	Returns the members of a specific meter configuration group, identified by the meterGroupName parameter.			
GetConfigurationGroupNames	OPT	Returns a list of names of meter configuration groups.			
GetConfigurationGroupNamesByMeterID	OPT	Returns a list of names of meter configuration groups for a specific meter.			
GetFormattedBlockTemplates	OPT	Returns the templates for formattedBlocks that the server supports.			

Method	MR	Importance to User	Supported by Server1 (MR)	Supported by Client2 (CB)	Verified Inter-operable3
GetHistoryLogByMeterID	REC	Returns history log data for a given meterID and date range.			
GetHistoryLogsByDate	REC	Returns history log data for a all meters given a date range.			
GetHistoryLogsByDateAndEventCode	REC	Returns history log data for a all meters given the eventCode and a date range.			
GetHistoryLogsByMeterIDAndEventCode	REC	Returns history log data for a given meterID, eventCode and date range.			
GetLatestMeterReadingsByMeterGroup	REC	Returns most recent meter reading data for all meters in a given meter group.			
GetLatestMeterReadingsByMeterGroupIntervalData	REC	Returns most recent meter reading data for all meters in a given meter group, requested by meter group name. Meter readings are returned in the form of an intervalData block.			
GetLatestReadingByMeterID	REC	Returns the most recent meter reading data for a given MeterID.			
GetLatestReadingsByMeterIDList	REC	Returns the latest readings for a list of meters for a specific date range and reading type desired.			
GetLatestReadingsByMeterIDListIntervalData	REC	Returns the latest readings for a list of meters for a specific date range and reading types desired. Meter readings are returned in the form of an intervalData block.			
GetLatestReadingsByMeterListFormattedBlock	OPT	Returns the latest readings for a list of meters for a specific date range and specific types of meter data, specified by fieldName.			
GetLatestReadingsByMeterListIntervalData	OPT	Returns the latest readings for a list of meters of a specific serviceType for a specific date range and specific types of meter data, specified by fieldName.			
GetLPDataByMeterID	OPT	Returns load profile data, chosen by meterID.			
GetLPReadingsByBillingCycle	OPT	Returns all required Load Profile reading data for a given BillingCycle and Date.			
GetLPReadingsByBillingCycleIntervalData	OPT	Returns load Profile reading data for a given BillingCycle and Date in the form of an array of intervalData blocks.			
GetLPReadingsByDateFormattedBlock	OPT	Returns Load Profile reading data for all billing cycles given a billing date. Reading(s) are returned in the form of an array of formattedBlocks.			
GetLPReadingsByDateIntervalData	OPT	Returns load Profile reading data for all billing cycles given a billing date. Reading(s) are returned in the form of an array of intervalData blocks.			
GetLPReadingsByMeterIDFormattedBlock	OPT	Returns Load Profile reading data for a given meter and date range. Reading(s)are returned in the form of an array of formattedBlocks.			

Method	MR	Importance to User	Supported by Server1 (MR)	Supported by Client2 (CB)	Verified Inter-operable3
GetLPReadingsByMeterIDIntervalData	OPT	Returns load Profile reading data for a given meter and date range. Reading(s)are returned in the form of an array of intervalData blocks.			
GetModifiedAMRMeters	OPT	Returns all meters that support AMR and that have been modified since the specified sessionID.			
GetReadingByMeterIDFormattedBlock	REC	Returns reading data for a given meter and billing date. Reading(s)are returned in the form of an array of formattedBlocks.			
GetReadingByMeterIDIntervalData	OPT	Returns reading data for a given meter and billing date. Reading(s)are returned in the form of an array of intervalData blocks.			
GetReadingScheduleByID	OPT	Returns a readingSchedule selected by scheduleID.			
GetReadingSchedules	OPT	Returns all readingSchedules that have been established on the server.			
GetReadingsByBillingCycle	OPT	Returns all required reading data for a given billingCycle and date range in the form of an array of formattedBlocks.			
GetReadingsByBillingCycleIntervalData	OPT	Returns all required reading data for a given billingCycle and date range in the form of an array of intervalData blocks.			
GetReadingsByDate	REC	Returns reading data for all meters given a date range.			
GetReadingsByDateFormattedBlock	REC	Returns reading data for all billing cycles given a billing date. Reading(s) are returned in the form of an array of formattedBlocks.			
GetReadingsByDateIntervalData	OPT	Returns reading data for all billing cycles given a billing date. Reading(s) are returned in the form of an array of intervalData blocks.			
GetReadingsByMeterID	REC	Returns meter reading data for a given MeterID and date range.			
GetScheduleByID	OPT	Returns a schedule that previously has been established on the server, selected by the scheduleID.			
GetSchedules	OPT	Returns all schedules that have been established on the server.			
GetSupportedReadingStatusCodes	OPT	Returns the list of readingDataStatusCodes that are supported by the server.			
InHomeDisplayAddNotification	OPT	Publisher notifies MR to add the associated in-home display(s).			
InHomeDisplayChangedNotification	OPT	Publisher notifies MR of a change in the in-home display(s).			
InHomeDisplayExchangeNotification	OPT	Publisher notifies MR that in-home displays(s) have been deployed or exchanged.			
InHomeDisplayRemoveNotification	OPT	Publisher notifies MR to remove the associated in-home displays(s).			

Method	MR	Importance to User	Supported by Server1 (MR)	Supported by Client2 (CB)	Verified Inter-operable3
InHomeDisplayRetireNotification	OPT	Publisher notifies MR that the associated in-home display(s)have been retired from the system.			
InitiateDemandReset	OPT	Requester initiates a demand reset on one or more meters specified by meter identifier.			
InitiateDisconnectedStatus	OPT	Notifies MR of meters that have been disconnected and no AMR reading is expected.			
InitiateGroupMeterReading	OPT	schedule a meter reading on a group of meters.			
InitiateLPMeterReadingsByMeterID	OPT	Schedule a meter reading on a group of meters, referred to by meter reading group name.			
InitiateMeterReadingsByMeterID	OPT	Requests a new meter reading from MR, on meters selected by meter ID	X	X	X
InitiatePlannedOutage	OPT	Notify MR of planned outage meters given a List of meterIDs and start and end dates of the outage.			
InitiateUsageMonitoring	OPT	The Requester notifies the MR of meters where zero usage is expected (i.e. move outs).			
InsertMeterInConfigurationGroup	OPT	Requests MR to add meter(s) to an existing configuration group.			
InsertMeterInMeterGroup	OPT	Requests MR to add meter(s) to an existing group of meters to address as a meter group.			
IsAMRMeter	REC	Identifies AMR meters given the meter identifier.			
MeterAddNotification	REC	Notifies MR to Add the associated meter(s).			
MeterBaseAddNotification	OPT	Notifies subscriber to add the associated meter base(s).			
MeterBaseChangedNotification	OPT	Notifies subscriber of a change in the meter base.			
MeterBaseExchangeNotification	OPT	Notifies subscriber that meter base(s) have been deployed or exchanged.			
MeterBaseRemoveNotification	OPT	Notifies subscriber to remove the associated meter base(s).			
MeterBaseRetireNotification	OPT	Notifies subscriber that the associated meter base(s)have been retired.			
MeterChangedNotification	REC	Notifies MR of a change in the meter object.			
MeterExchangeNotification	OPT	Provides notification that meter(s) have been deployed or exchanged.			
MeterRemoveNotification	REC	Notifies MR to remove the associated meter(s).			
MeterRetireNotification	REC	Provides notification that the associated meter(s) have been retired from the system.			
RemoveMetersFromConfigurationGroup	OPT	Requests MR to remove meter(s) from an existing configuration group.			
RemoveMetersFromMeterGroup	OPT	Requests MR to remove meter(s) from an existing group of			

Method	MR	Importance to User	Supported by Server1 (MR)	Supported by Client2 (CB)	Verified Inter-operable3
		meters.			
ScheduleGroupMeterReading	OPT	Requests MR to schedule meter readings for a group of meters.			
ServiceLocationChangedNotification	REC	Provides notification of a change in the serviceLocation			
ServiceOrderChangedNotification	REC	Publishes changed service orders.			
ServiceOrderClosedNotification	REC	Publishes closed service orders to the subscriber			
ServiceOrderOpenedNotification	REC	Publishes new service orders to the subscriber			
UpdateServiceLocationDisplays	OPT	Requests MR to to update the in-home display associated with a specific service location.			
Discovery					
DomainMembersChangedNotification	OPT	Enables a client to have changed information on domain members published to it.			
DomainNamesChangedNotification	OPT	Enables a client to have changed information on domain names published to it.			
GetDomainMembers	OPT	Requests a list of items in a domain.			
GetDomainNames	OPT	Requests the names of all lists of items (domains). These can be used to make sure that two programs use the same codes or descriptions.			
GetMethods	REQ	Requests a list of web service methods supported by the application.	X	X	X
GetPublishMethods	REC	Requester requests list of methods to which this server can publish information.			
Subscription and Network Management					
GetRegistrationInfoByID	REC	Requests the return of existing registration information for a specific registrationID.			
RegisterForService	REC	Establishes a subscription using a previously requested registrationID.			
RequestRegistrationID	REC	Requests of the publisher a unique registration ID that would subsequently be used to refer unambiguously to that specific subscription.			
UnregisterForService	REC	This method deletes a previously established subscription.			
PingURL	REQ	Queries status of the application.	X	X	X

Summary of Interoperability Test Results (CD)

Table 3
MultiSpeak Methods (CD)

Method	CD	Importance to User	Supported by Server1 (CD)	Supported by Client2 (CB)	Verified Inter-operable3
AccountChangedNotification	OPT	Provides notification of a change in customer account(s).			
CDDeviceAddNotification	OPT	Notifies CD to add the associated connect/disconnect device(s).			
CDDeviceChangedNotification	OPT	Notifies CD of a change in connect/disconnect device(s).			
CDDeviceExchangeNotification	OPT	Notifies CD that connect/disconnect device(s) have been deployed or exchanged.			
CDDeviceRemoveNotification	OPT	Notifies CD to remove the associated connect/disconnect device(s).			
CDDeviceRetireNotification	OPT	Notifies CD that the associated connect/disconnect devices(s)have been retired from the system.			
CustomerChangedNotification	REC	Notifies CD of a change in the Customer.			
GetCDMeterState	REC	Returns current state of a connect/disconnect device for a given meterID.			
GetCDSupportedMeters	REC	Returns all meters that have Connect/Disconnect Capability.			
GetModifiedCDMeters	OPT	Returns all meters that have Connect/Disconnect Capability and that have been modified since the last identified session.			
InitiateArmCDDevice	REC	Initiates arming of one or more Connect/Disconnect devices.			
InitiateCDStateRequest	REC	Initiates a switch status check directly from one or more Connect/Disconnect devices.			
InitiateConnectDisconnect	REC	Initiates a connect or disconnect action.	X	X	X
InitiateDisableCDDevice	OPT	Initiates disabling of one or more Connect/Disconnect devices.			
InitiateEnableCDDevice	OPT	Initiates enabling of one or more Connect/Disconnect devices.			
MeterChangedNotification	REC	Notifies CD of a change in the Meter object			
ServiceLocationChangedNotification	REC	Notifies CD of a change in the Service Location			
Discovery					
DomainMembersChangedNotification	OPT	Enables a client to have changed information on domain			

Method	CD	Importance to User	Supported by Server1 (CD)	Supported by Client2 (CB)	Verified Inter-operable3
		members published to it.			
DomainNamesChangedNotification	OPT	Enables a client to have changed information on domain names published to it.			
GetDomainMembers	OPT	Requests a list of items in a domain.			
GetDomainNames	OPT	Requests the names of all lists of items (domains). These can be used to make sure that two programs use the same codes or descriptions.			
GetMethods	REQ	Requests a list of web service methods supported by the application.	X	X	X
GetPublishMethods	REC	Requester requests list of methods to which this server can publish information.			
Subscription and Network Management					
GetRegistrationInfoByID	REC	Requests the return of existing registration information for a specific registrationID.			
RegisterForService	REC	Establishes a subscription using a previously requested registrationID.			
RequestRegistrationID	REC	Requests of the publisher a unique registration ID that would subsequently be used to refer unambiguously to that specific subscription.			
UnregisterForService	REC	This method deletes a previously established subscription.			
PingURL	REQ	Queries status of the application.	X	X	X

Products: MeterSense MDM and SSN AMI
Summary of Interoperability Test Results (CB)

Table 4
MultiSpeak Methods (CB)

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (CD)	Verified Inter-operable3
CDDeviceExchangeNotification	OPT	Notifies CB that connect/disconnect device(s) have been deployed or exchanged.			
CDDeviceInstalledNotification	OPT	Notifies CB that connect/disconnect device(s) have been installed.			
CDStateChangedNotification	REC	Notifies CB of state change for a connect/disconnect device By meterID and loadActionCode.			
CDStateNotification	REC	Notifies CB of state of a connect/disconnect device.			
CDStatesChangedNotification	REC	Notifies CB of state change(s) for connect/disconnect device(s).	X	X	X
CDStatesNotification	REC	Notifies CB of state of connect/disconnect device(s).			
GetAccountByMeterIDAndServiceType	REC	Returns the requested customer account data given a meter identifier and service type.			
GetAccountByServiceLocationIDAndServiceType	REC	Returns the requested customer account data given a service location identifier and service type.			
GetAccountsByCustomerID	REC	Returns the requested accounts given the customer identifier.			
GetAllAccounts	REC	Returns account data for all customer accounts.			
GetAllCustomers	REC	Returns all required customer data for all customers.			
GetAllMeters	REC	Returns all required Meter data for all Meters.			
GetCustomerByCustomerID	REC	Returns customer details for a given customer identified by customer ID.			
GetCustomerByDBAName	OPT	Returns the requested Customer if it exists.			
GetCustomerByMeterID	OPT	Returns the requested Customer data given a meter identifier.			
GetCustomerByName	OPT	Returns the requested Customer(s) data given First and Last name.			

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (CD)	Verified Inter-operable3
GetIHDGroupMembers	OPT	Returns from the server the members of a specific in home display group, identified by the IHDGroupName parameter.			
GetIHDGroupNames	OPT	Returns a list of names of in home display groups.			
GetIHDGroupNamesByInHomeDisplayID	OPT	Returns a list of names of in home display groups for a specific inHomeDisplay.			
GetMeterByCustomerID	REC	Returns the requested Meter(s) data given Customer ID.			
GetMeterByMeterID	REC	Returns the requested Meter data given meterID.			
GetMeterByServiceLocationID	REC	Returns the requested Meter(s) data given Service Location.			
GetMetersByAccountNumberAndServiceType	REC	Returns meters for a given account number and service type.			
GetModifiedCustomers	OPT	Returns all required customer data for all customers that have been modified since the specified sessionID.			
GetModifiedMeters	OPT	Returns all required customer data for all customers that have been modified since the specified sessionID.			
GetModifiedServiceLocations	OPT	Returns all required Service Location data for all Service Locations that have been modified since the specified sessionID.			
GetServiceLocationByAccountNumber	REC	Returns the service location for a given account number.			
GetServiceLocationByCustomerID	REC	Returns the service location for a given customer ID.			
GetServiceLocationByGridLocation	OPT	Returns the service location for a given grid location.			
GetServiceLocationByMeterID	OPT	Returns the service location for a given meter identifier.			
GetServiceLocationByServiceLocationID	REC	Returns the service location data for a given service location identifier.			
GetServiceLocationByServiceStatus	OPT	Returns the service location(s) for a given service status.			
ModifyCBDataForCustomer	OPT	Allows client to modify CB data for customer objects.			
ModifyCBDataForServiceLocations	OPT	Allows client to modify CB data for the Service Location object.			
Discovery					
DomainMembersChangedNotification	OPT	Enables a client to have changed information on domain			

Method	CB	Importance to User	Supported by Server1 (CB)	Supported by Client2 (CD)	Verified Inter-operable3
		members published to it.			
DomainNamesChangedNotification	OPT	Enables a client to have changed information on domain names published to it.			
GetDomainMembers	OPT	Requests a list of items in a domain.			
GetDomainNames	OPT	Requests the names of all lists of items (domains). These can be used to make sure that two programs use the same codes or descriptions.			
GetMethods	REQ	Requests a list of web service methods supported by the application.	X	X	X
GetPublishMethods	REC	Requester requests list of methods to which this server can publish information.			
Subscription and Network Management					
GetRegistrationInfoByID	REC	Requests the return of existing registration information for a specific registrationID.			
RegisterForService	REC	Establishes a subscription using a previously requested registrationID.			
RequestRegistrationID	REC	Requests of the publisher a unique registration ID that would subsequently be used to refer unambiguously to that specific subscription.			
UnregisterForService	REC	This method deletes a previously established subscription.			
PingURL	REQ	Queries status of the application.	X	X	X

REQ - Inclusion is required for this interface.
REC - Inclusion is recommended for this interface.
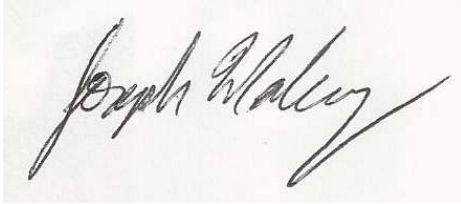OPT - Inclusion is optional for this interface.

1)   Supported by Server means that the server has demonstrated in some interoperability test (not necessarily with this client) that it can support the method.

2)   Supported by Client means that the client has demonstrated in some interoperability test (not necessarily with this server) that it can call the method.

3)   Verified Interoperable means that both the client and server have demonstrated in this interoperability test that they can usefully transfer data using this method.
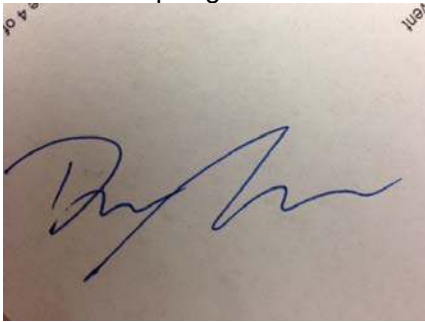
Certified by:

For MeterSense

_____   Director, Research, Product Development, and
                                                                                     Maintenance
Name: Joseph Mahony   Title
          10/7/2013
Date : _____

For Silver Springs Networks:

_____   Director, Software Engineering
Name: Dave Kong   Title
          10/7/2013
Date : _____

Assertions Verified by:

_____   MultiSpeak Testing Agent
Name: Hannu Huhdanpaa   Title

UISOL,Inc.. .
Testing Agent
          10/7/2013
Date : _____

Disclaimer:

The assertions made in this document are statements of the vendors offering the two products listed above. The Testing Agent has observed the software performing the tasks described in these vendor assertions.

Neither NRECA, Cornice Engineering, Inc. (MultiSpeak Project Coordinator), nor UISOL, Inc, acting on behalf of NRECA, makes any warranty or guarantee that the software will perform as described in this assertion when installed at any specific utility. Furthermore, neither NRECA, Cornice Engineering, Inc., nor UISOL, Inc. makes any warranty or guarantee that the software described will be suitable for any specific purpose or need.

As used herein, the word *verify* shall mean an expression of the Testing Agent's professional opinion to the best of its information, knowledge and belief, and does not constitute a warranty or guarantee by NRECA or the Testing Agent.