

## MultiSpeak Version 3.0 Interoperability Assertion

Statement of Interoperable Functionality Between:

Vendor(s)	Product	Product Version	Role	Batch Interface	Web Client Interfaces	Web Server Interfaces
Hunt Technologies, INC	Command Center	2.2.2	MR			MR→CB
National Information Solutions Cooperative	iVUE	1.8	CB		MR→CB	
Hunt Technologies, INC	Command Center	2.2.2	MR			CB→MR
National Information Solutions Cooperative	iVUE	1.8	CB		CB→MR	

### Summary:

Web Service interfaces using MultiSpeak standards were developed in order to provide NISC iVUE and Hunt Command Center customers a seamless way to utilize the functionality of both systems, and to keep the system databases synchronized without having to update and maintain data in both systems through manual processes.

### Prerequisites:

#### *Enable the Integration in Command Center*

1. Within the Command Center, access the Integration>External Settings Screen. Scroll down the page to the section entitled “Customer Information System Integration.
2. Select the Enable Customer Information System Integration check box.
3. Enter the URL of the iVUE server and the username and password required to access iVUE.
4. The URL shown next to “Host Integration” is custom to your utility’s installation of the Command Center and must be entered in iVUE.

#### *Enable the Integration in iVUE*

There is currently a setup procedure that needs to be run before web services are enabled. Contact the MultiSpeak coordinator, Deena Patch at (x 2846) to run the setup procedure.

### ***Initial Data Load***

In order to initially load the Command Center with service specific information such as service location, map location, pole number, billing cycle, revenue class, customer number, account number, the iVUE MultiSpeak Export Customer Billing to Meter Reading MultiSpeak 2.3 batch process is used to send a 'dump' of all existing customers.

This is a one time process. After the initial load is complete, meters newly deployed with Hunt AMR devices, meter change outs and customer information changes will automatically be sent to the Command Center.

Note: Only meters that exist in the Command Center will be updated. This is to ensure that unnecessary meter records are not created within the Command Center database.

### ***Import Batch files to Command Center***

To import the batch files created within iVUE, navigate to the Inventory>Import>Customer Information screen within the Command Center. Using the Browse button, browse to the iVUE created files. Select the Meter file and then the Upload button. The meter file will be imported to the Command Center. Any errors encountered will be reported on the Import screen.

Next, select the Customer file initially created in iVUE and select the Upload button.

## Specific Vendor Assertions:

### 1) iVUE will notify Command Center of newly deployed (added) AMR meters

**Importance to user:** This function will save the utility time and money during the initial deployment and ongoing maintenance of their Hunt AMR system by removing the need to manually enter or import a list of newly deployed AMR meters to Command Center.

**How Achieved:** When an in-stock meter is installed at a meter service location on iVUE CIS.

A transaction history record is created for the meter installation (Transaction = 'MTRINSREM', Activity = 'ADD', Meter Status = 1 or 2), which is picked up and the meter number and status is passed to the Command Center.

Note: See Meter Remove Notification use case for Meter Exchanges, which creates both a Meter Add Notification and a Meter Remove Notification.

Notification of deployment is sent to the Command Center. If the new meter already exists in the Command Center and is in an inventory state, the system automatically initiates communication between the meter and the substation processing equipment.

Confirmation of initiation of the communication process command can be viewed within the Endpoint Status section of the Command Center Dashboard.

### 2) iVUE will notify Command Center of exchanged AMR meters

**Importance to user:** This function will save the utility time and money during the ongoing maintenance of their Hunt AMR system by removing the need to manually enter meter change information in the Command Center.

**How Achieved:** A meter exchange is performed in the iVUE CIS.

A transaction history record is created for the meter exchange (Transaction = 'MTREXC', Activity = 'ADD'), and the out and in meters and statuses are picked up and passed to the Command Center. This will generate a Meter Remove Notification for the 'out' meter and a Meter Add Notification for the 'in' meter.

In the Command Center, removed meters can be viewed via the Meter Change Out Report as well as on the Command Center Dashboard, the number of meters in the Inventory will increment by the number of meters removed from service.

### **3) iVUE will notify Command Center of removed AMR meters**

**Importance to user:** This function will save the utility time and money during the ongoing maintenance of their systems by removing the need to manually enter a list of removed AMR meters in the Command Center.

#### **How Achieved:**

A remove from service transaction is completed in iVUE using standard procedures.

A transaction history record is created for the meter removal (Transaction = 'MTRINSREM', Meter Service Function = 'Remove Meter'), which is picked up and the meter number and status is passed to the Command Center.

In both scenarios iVUE will send notification to the Command Center. In the Command Center, this removal can be noted on the Meter Change Out Report as well as on the Dashboard, the number of meters in Inventory will increment by the number of meters removed from service.

### **4) iVUE will notify Command Center of changed customer/service location information**

**Importance to user:** This function will save the utility time and money by removing the need to manually enter initial and changed customer information to the Command Center. The ability to view customer information within the Command Center is highly useful during ongoing administration of the Hunt AMR system, specifically during outages, during theft detection and during troubleshooting processes.

#### **How Achieved:**

#### **Service Location Changed Notification**

iVUE notifies Command Center of a change in any of several service location specific elements by sending the changed service location information.

If a property of a service location such as the customer id, account number, map location, revenue class or billing cycle changes within iVUE, notification is sent to the Command Center via this function.

Scenario 1: A change is made to the Revenue Class on the iVUE Service Agreement screen.

A transaction history record is created for the service agreement modification (Transaction = 'SRVAGR', Activity = 'MODIFY'), which is picked up and the meter number and data change is passed to the Command Center.

Scenario 2: A change is made to the Cycle code on the iVUE Account screen.

A transaction history record is created for the Account screen modification (Transaction = 'ACCT', Activity = 'MODIFY'), which is picked up and the meter number and data change is passed to the Command Center.

Scenario 3: A change is made to the Account number on the iVUE Account Number Change screen.

A transaction history record is created for the Account screen modification (Transaction = 'ACNCHG'), which is picked up and the meter number and data change is passed to the Command Center.

Scenario 4: A change is made to the Service Address on the Service Location screen.

A transaction history record is created for the Service Location screen modification (Transaction = 'SRVLOC', Activity = 'MODIFY'), which is picked up and the meter number and data change is passed to the Command Center.

In each scenario the properties are updated within the Command Center upon receipt of the notification. Changed properties can be viewed on the Endpoint Diagnostics screen, Endpoint Maintenance screen and in the case of billing cycle removal on the Command Center Dashboard.

## **5) iVUE will notify Command Center of locations where Usage should be monitored.**

**Importance to user:** Provides automatic maintenance of status groups within the Command Center that are used to track locations where electric usage is not expected, such as vacant dwellings. In the event usage is reported, the Command Center notifies the utility of unexpected usage via the system Dashboard. This function is intended to save the utility money by allowing for a "soft disconnect" of a meter versus sending an employee to "hard disconnect" the meter. The utility can take comfort in knowing they will be notified within a day of usage occurring at a virtually disconnected location.

**How Achieved:** A disconnect order is processed within the iVUE CIS.

The meter status on meter inventory is made "inactive installed" (status 2) and neither the "Disconnect at Transformer" nor the "Dead Plug" options are checked.

A transaction history record is created for the disconnect order (Transaction = 'SRVORD', SO function = 'DS', SO Status = 'C'), which is picked up and the meter number and status is passed to the Command Center.

Within the Command Center, the meter number is placed in a “Usage Monitoring Group.” Membership is verified on the Command Center Status Groups screen as well as on the Status Groups Membership section of the Endpoint Diagnostics screen.

While a member of a Usage Monitoring group, during nightly readings processing if usage is detected it is flagged on the System Alerts Nugget on the Command Center Dashboard.

Detailed information regarding Unexpected Usage can be viewed on the Virtual Disconnect Report:

**6) iVUE will notify Command Center of locations where Usage Monitoring is no longer required.**

***Importance to user:*** This feature is intended to benefit the utility by removing the necessity to manually remove meters from the Usage Monitoring status group.

***How Achieved:*** A reconnect order is processed within the iVUE CIS.

The meter status on meter inventory is made “active” (status 1).

A transaction history record is created for the reconnect order (Transaction = ‘SRVORD’, SO function = ‘RS’, ‘RN’, ‘RO’ or ‘NS’, SO Status = ‘C’), which is picked up and the meter number and status is passed to the Command Center.

Within the Command Center, the meter number is removed from a “Disconnected Group.” Removal from membership in the Disconnected Status Group can be verified on the Command Center Dashboard, the Status Groups screen and the Endpoint Diagnostics screen.

**7) iVUE will notify Command Center of locations where no AMR reading is expected.**

***Importance to user:***

This feature is intended to benefit the utility by removing the necessity to manually add meters to the disconnected status group. Further, by automatically adding disconnected meters to the status group, automatic monitoring for usage is initiated.

***How Achieved:***

Customer Billing notifies the Command Center that meter(s) have been disconnected and no AMR reading is expected.

Use Case:

When a meter is totally disconnected and no electricity is available to power the AMR device, a disconnect order is processed within the iVUE CIS.

Scenario 1: The meter status on meter inventory is made “inactive installed” (status 2) and the “Disconnect at Transformer” or “Dead Plug” are checked indicating power to the meter is disconnected:

Scenario 2: The meter status on meter inventory indicates meter is removed (status 3 - 9).

In both scenarios a transaction history record is created for the disconnect order (Transaction = ‘SRVORD’, SO function = ‘DS’, SO Status = ‘C’), which is picked up and the meter number and status is passed to the Command Center.

This method will place the meter in a Disconnected status group. Membership in the Disconnected Status Group can be verified within the Endpoint Status section of the Command Center Dashboard.

**8) iVUE will notify Command Center of locations where AMR readings are once again expected.**

***Importance to user:***

This feature will benefit the utility by removing the necessity to manually remove meters from the disconnected status group.

***How Achieved:***

iVUE notifies Command Center that meter(s) should no longer be considered disconnected and that an AMR reading is expected. Removal from membership in the Disconnected Status Group can be verified on the Command Center Dashboard.

Use Case:

A reconnect order is processed within the iVUE CIS.

The meter status on meter inventory is made “active” (status 1).

A transaction history record is created for the reconnect order (Transaction = ‘SRVORD’, SO function = ‘RS’, ‘RN’, ‘RO’ or ‘NS’, SO Status = ‘C’), which is picked up and the meter number and status is passed to the Command Center.

The meter will be automatically removed from the Disconnected Status Group. When usage starts to occur again, it will not be flagged as unexpected.

## **9) iVUE can request the most recent AMR provided reading**

### ***Importance to user:***

The utility benefits because the Customer Service Representative doesn't have to log in to a separate system (Command Center) to get the most recent meter reading information.

### ***How Achieved:***

This feature is intended to be used by Customer Service to assist in answering customer questions. The CSR selects the "Read Now" button on the iVUE Reading Interval History screen which requests the latest reading for the specified meter number and when the reading is returned it is posted to both the Interval/Daily Reading table and Present Reading (used for billing).

## **10) Command Center can display Customer Name, Address and telephone number on select screens.**

### **Get Customer By Meter Number**

This allows for customer specific data to be retrieved on demand by Command Center from the Customer Billing system.

***Importance to user:*** The ability to view customer information within the Command Center is highly useful during ongoing administration of the AMR system, specifically during outages, during theft detection and during troubleshooting processes. The utility benefits from this integration by removing the necessity to log in to a separate system to look up customer data. In some cases, customers are entering customer data in the Notes field within the Command Center. This time consuming task is also removed.

### ***How Achieved:***

Customer specific data supplied by this method is automatically displayed on the CIS Data section of the Endpoint Diagnostics screen and on the Service History Report within the Command Center.



Products: Command Center and iVUE

## Summary of Interoperability Test Results (#2A CB>MR)

**Table 1  
Recommended MultiSpeak Methods**

Method Name	Importance to User	Supported by Server <sup>1</sup> (CB)	Supported by Client <sup>2</sup> (MR)	Verified Inter-operable <sup>3</sup>
GetMeterByAccountNumber	Returns the requested Meter(s) data given Account Number.	X		
GetMeterByMeterId	Returns the requested Meter data given meterID	X		
GetMeterByServLoc	Returns the requested Meter(s) data given Service Location.	X		
GetMeterByMeterNo	Returns the requested Meter data given Meter Number.	X		
GetAllCustomers	Returns all required customer data for all customers	X		
GetServiceLocationByCustId	Returns the requested Service Location data given Customer ID.	X		
GetServiceLocationByServLoc	Returns the requested Service Location data given Service Location ID	X	X	X
GetCustomerByCustId	Returns the requested Customer if it exists.	X		
GetAllServiceLocations	Returns all required Service Location data for all Service Locations	X		
GetMeterByCustID	Returns the requested Meter(s) data given Customer ID	X		
GetServiceLocationByAccountNumber	Returns the requested Service Location data given Account Number	X		
GetAllMeters	Returns all required Meter data for all Meters	X		
GetMethods	Requests a list of web service methods supported by the AMR application	X		
PingURL	Queries status of the AMR application.	X		

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.

**Table 2  
Optional MultiSpeak Methods**

<b>Method Name</b>	<b>Importance to User</b>	<b>Supported by Server<sup>1</sup> (CB)</b>	<b>Supported by Client<sup>2</sup> (MR)</b>	<b>Verified Inter-operable<sup>3</sup></b>
GetCustomerByName	Returns the requested Customer(s) data given First and Last name			
GetServiceLocationByServiceType	Returns the requested Service Location(s) data given the Service Type			
GetModifiedMeters	Returns all required Meter data for all Meters that have been modified since the specified sessionID			
GetDomainNames	Enables systems to exchange information about application-specific or installation-specific lists of information, such as the lists of counties for this installation or the list of serviceStatusCodes used by the server	X		
GetCustomerByMeterNo	Returns the requested Customer data given a Meter Number	X	X	X
GetCustomerByDBAName	Returns the requested Customer given the Doing Business As (DBA) name			
ModifyCBDDataForMeter	Allows MR to Modify CB data for a single Meter.			
GetServiceLocationByLoadGroup	Returns the requested Service Location(s) data for a given Load Group			
GetServiceLocationByGridLocation	Returns the requested Service Location(s) data given a single Grid Location	X		
GetServiceLocationByMeterNo	Returns the requested Service Location data given the meter number of a meter served at that location		X	
GetServiceLocationByShutOffDate	Returns the requested Service Location(s) data given the Service ShutOff Date			
HistoryLogChangedNotification	MR Notifies CB of a change in the History Log by sending the changed historyLog object			
ReadingChangedNotification	MR Notifies CB of a change in Meter Reads by sending the changed meterRead objects			
GetDomainMembers	Enable systems to exchange information about application-specific or installation-specific lists of information, such as the lists of counties for this installation or the list of serviceStatusCodes used by the server	X		
GetModifiedServiceLocations	Returns all required Service Location data for all Service Locations that have been modified since the specified sessionID			
GetServiceLocationByPhaseCode	Returns the requested Service Location(s) data given the Phase			
GetServiceLocationByServiceStatus	Returns the requested Service Location(s) data given the Service Status			
ModifyCBDDataForCustomer	Allow MR to Modify CB data for a specific customer			
GetModifiedCustomers	Returns all required customer data for all customers that have been modified since the specified sessionID			
GetMeterByAMRType	Returns the requested Meter(s) data given AMR Type.			
ModifyCBDDataForServiceLocation	Allow MR to Modify CB data for the Service Location			

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.

## Summary of Interoperability Test Results (#2A MR>CB)

**Table 3  
Recommended MultiSpeak Methods**

Method Name	Importance to User	Supported by Server <sup>1</sup> (MR)	Supported by Client <sup>2</sup> (CB)	Verified Inter-operable <sup>3</sup>
CustomerChangedNotification	CB Notifies MR of a change in the Customer object by sending the changed customer object	X	X	X
GetAMRSupportedMeters	Returns all meters that have AMR	X		
GetHistoryLogByMeterNo	Returns History Log Data for a given MeterNo and Date Range	X		
GetHistoryLogsByDate	Returns History Log Data for a all Meters Given a Date Range	X		
GetHistoryLogsByDateAndEventCode	Returns History Log Data for a all Meters Given the eventCode and a Date Range	X		
GetHistoryLogsByMeterNoAndEventCode	Returns History Log Data for a given MeterNo, eventCode and Date Range	X		
GetLatestReadingByMeterNo	Returns Most Recent Meter Reading Data for a given MeterNo	X	X	X
GetReadingsByDate	Returns Reading Data for All Meters Given a Date Range	X		
GetReadingsByMeterNo	Returns Meter Reading Data for a given MeterNo and Date Range	X		
IsAMRMeter	Return true if given meterNo has AMR	X		
MeterAddNotification	CB Notifies MR to Add the associated Meter(s).	X	X	X
MeterChangedNotification	CB Notifies MR of a change in the Meter object by sending the changed meter object.	X	X	X
MeterRemoveNotification	CB Notifies MR to remove the associated Meter(s).	X	X	X
ServiceLocationChangedNotification	CB Notifies MR of a change in the Service Location	X	X	X
GetMethods	Requests a list of web service methods supported by the Customer Billing program.	X	X	X
PingURL	Queries status of the Customer Billing program.	X	X	X

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.

**Table 4  
Optional MultiSpeak Methods**

<b>Method Name</b>	<b>Importance to User</b>	<b>Supported by Server<sup>1</sup> (MR)</b>	<b>Supported by Client<sup>2</sup> (CB)</b>	<b>Verified Inter-operable<sup>3</sup></b>
CancelDisconnectedStatus	CB Notifies MR of Meters that should be removed from disconnected status.(i.e. made active).	X	X	X
CancelPlannedOutage	Notify MR of Cancellation of Planned Outage Given a List of MeterNumbers	X		
CancelUsageMonitoring	Notify MR of Cancellation Of Zero Usage Monitoring.(ie Move Ins).	X	X	X
GetDomainMembers	enable systems to exchange information about application-specific or installation-specific lists of information, such as the lists of counties for this installation or the list of serviceStatusCodes used by the server			
GetDomainNames	enable systems to exchange information about application-specific or installation-specific lists of information, such as the lists of counties for this installation or the list of serviceStatusCodes used by the server.			
GetModifiedAMRMeters	Returns all meters that support AMR and that have been modified since the specified sessionID			
GetReadingsByBillingCycle	Returns all required Reading Data for a given BillingCycle and Date Range			
InitiateDisconnectedStatus	CB Notifies MR of Meters that have been disconnected and no AMR reading is expected.	X	X	X
InitiateMeterReadByMeterNumber	CB requests a new meter reading from MR, on meters selected by meter number			
InitiatePlannedOutage	Notify MR of Planned Outage Meters Given a List of MeterNumbers and Start and End Dates of the Outage	X		
InitiateUsageMonitoring	Notify MR of Meters Where Zero Usage is Expected.(ie Move outs).	X	X	X

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 Hunt Technologies, Inc.:



\_\_\_\_\_  
Name: Lisa Williams

Software Program Manager  
Title

Date : 1/27/2006

For National Information Solutions Cooperative.



\_\_\_\_\_  
Name: Randy Schroder

E-Solutions Manager  
Title

Date : 1/27/2006

Assertions Verified by:



\_\_\_\_\_  
Name:

Senior Architect  
Title

UISOL, Inc.  
Testing Agent

Date : 1/27/2006

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.