

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
Landis+Gyr	Command Center	5.10	MR			MR→CB
GreenSuite	GreenSuite	1.0	CB		MR→CB	
Landis+Gyr	Command Center	5.10	MR		CB→MR	
GreenSuite	GreenSuite	1.0	CB			CB→MR

Summary:

Web Service interfaces using MultiSpeak 3.0 standards were developed in order to provide the following capabilities to customers that utilize Landis and Gyr's Advanced Metering Infrastructure (AMI) and GreenSuite's Meter Data Management (MDM):

- Enable GreenSuite to receive the latest readings for any/all supported meters within the L+G AMI network for further analysis and reporting, for any given day
- Enable on-demand reads to be initiated from GreenSuite so that readings collected by Command Center can be returned to GreenSuite for use by customers for usage analysis and reporting.

Prerequisites:

AMRType in GreenSuite must be populated for Landis+Gyr specific meter types. If AMRType is not populated, GreenSuite may use GetAMRSupportedMeters to retrieve all of the AMR supported meters from Command Center, this will update GreenSuite AMRType field if not already populated.

Enable the Integration in Command Center

The following steps need to be taken to setup the Command Center interface:

1. Add a new user. No special user rights are required for this account. The account user and password need to be put into GreenSuite and are used in the web service authentication.
2. Update the External Integration Page to include the Customer Billing(CB) Interface sections URL, user and password for the GreenSuite web service interfaces.

Enable the Integration in GreenSuite

Minimal setup is required to define a MultiSpeak interface in GreenSuite and there is currently a setup procedure that needs to be run before web services is enabled. Contact GreenSuite's MultiSpeak coordinator, Tim Butler at 317-252-0354 to run the setup procedure.

Specific Vendor Assertions:

1) During the initial implementation, GreenSuite will request historical usage from Command Center for a specific meter.

Importance to user: In order to accurately predict usage behaviors for a given user, historical data is required for initial analysis.

How Achieved: GreenSuite requests usage for the specified meter for a period of the last 90 days or whatever is available, by issuing a call to *GetReadingsByMeterNo*. Command Center will return all archived usage readings for the meter and date range requested. If no data is returned, GreenSuite will assume that there is no historical data available for the specified meter.

2) GreenSuite can request all AMR supported meters from Command Center.

Importance to user: The user can accurately view his/her daily usage when an AMR supported meter is put into place. When logging into GreenSuite, a user without an AMR supported meter is only able to view his/her billing data.

How Achieved: GreenSuite calls the *GetAMRSupportedMeters* method on the MR-CB interface supported by Command Center to internally denote a given meter as AMR enabled. Upon addition of a new meter within the system, *IsAMRMeter* is called to verify if a given meter is AMR enabled.

3) GreenSuite can request the latest reading for an individual meter: When analyzing usage data, GreenSuite will occasionally pull down the latest data for a given user/meter to more accurately analyze the usage data.

How Achieved: GreenSuite calls *GetLatestReadingByMeterNo* to refresh the latest reads for the given member via a service that runs in the background periodically.

4) GreenSuite can initiate an On Demand reading for an individual meter: In some cases, when viewing a user's usage, an administrative user can initiate an On Demand read for a given meter to better understand that given user/meter's usage pattern.

How Achieved: An administrative GreenSuite user initiates an On Demand read via the portal by clicking the "Initiate Read" link within the usage viewer to call the *InitiateMeterReadByMeterNumber* method, returning a real time meter reading to GreenSuite via a *ReadingChangedNotification* for viewing and analysis.

Products: Command Center and GreenSuite

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

Table 1 Recommended MultiSpeak Methods

Method Name	Importance to User	Supported by Server ¹ (MR)	Supported by Client ² (CB)	Verified Inter-operable ³
CustomerChangedNotification	CB Notifies MR of a change in the Customer object by sending the changed Customer object	X	-	-
GetAMRSupportedMeters	Returns all meters that have AMR	X	X	X
GetHistoryLogByMeterNo	Returns the History Log Data for a given meter and date range.	X	-	-
GetHistoryLogsByDate	Returns the History Log Data for all meters for a given date range.	X	-	-
GetHistoryLogsByDateAndEventCode	Returns the History Log Data for all meters given the eventCode for a given date range.	X	-	-
GetHistoryLogsByMeterNoAndEventCode	Returns the History Log Data for a given meter, eventCode, and date range.	X	-	-
GetLatestReadingByMeterNo	Returns most recent meter reading data for a given meter	X	X	X
GetReadingsByDate	Returns reading data for all meters for a given date range.	X	X	X
GetReadingsByMeterNo	Returns meter reading data for a given meter	X	X	X
IsAMRMeter	Return true if given meter has AMR	X	X	X
GetMethods	Requests a list of web services methods supported by the AMI program	X	X	X
PingURL	Queries status of the AMI application	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 2 Optional MultiSpeak Methods

Method Name	Importance to User	Supported by Server¹ (MR)	Supported by Client² (CB)	Verified Inter-operable³
InitiateMeterReadByMeterNumber	MDM requests a new meter reading from MR, on meters selected by meter number	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.

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

Table 1 Recommended MultiSpeak Methods

Method Name	Importance to User	Supported by Server ¹ (CB)	Supported by Client ² (MR)	Verified Inter-operable ³
GetMethods	Requests a list of web services methods supported by the MDM program	X	X	X
PingURL	Queries status of the MDM application	X	X	X
ReadingChangedNotifciation	Updates the MDM upon the callback from InitiateMeterReadByMeterNumber	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.

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