MultiSpeak Version 3.0 Interoperability Assertion

Statement of Interoperable Functionality Between:

Vendor(s)	Product	Product Version	Role	Web Client Interfaces	Web Server Interfaces
Tantalus Systems	TUNet	2.13	OD		OD→OA
Milsoft Utility Solutions	DisSPatch	7.3	OA	OD→OA	
Tantalus Systems	TUNet	2.13	OD		OA→OD
Milsoft Utility Solutions	DisSPatch	7.3	OA	OA→OD	
Milsoft Utility Solutions	DisSPatch	7.3	EA	MR→EA	
Tantalus Systems	TUNet	2.13	MR		MR→EA

Summary:

Web Service interfaces were implemented according to the MultiSpeak® 3.0 standards in order to provide Milsoft DisSPatch and Tantalus customers a way to utilize the TUNet AMI system for outage verification. Milsoft DisSPatch can use the interface to determine which meters have Tantalus AMR endpoints and the type of endpoint each meter has. Milsoft DisSPatch can request meter status to identify or confirm meters that do or do not have power, or those meters that have failed to respond for a "ping" command. Also, the TUNet AMI system can actively detect outages and/or restorations as they occur and send/push notifications to the Milsoft DisSPatch system in order to process outages more efficiently or display them in "real-time".

Prerequisites:

The Milsoft DisSPatch system must have knowledge of all the AMI meters in the TUNet system. The meter numbers for the meters in the TUNet system and the DisSpatch system must correspond in order for the interface to be useful. Additionally, the Tantalus TUNet AMI system and the Milsoft DisSPatch system must be accessible from each other.

Specific Vendor Assertions:

1) **Milsoft DisSPatch can request all AMR supported meters from TUNet. DisSPatch can also verify if a given meter is supported by TUNet.**

Importance to user: The user can determine which consumers in the DisSPatch OMS are TUNet AMR meters.

How Achieved: The user selects “Import AMR vendor tags” box in the AMR Data Importer in DisSPatch. When the Run button is clicked, DisSPatch calls the GetAMRSupportedMeters method on the MR interface supported by TUNet.

DisSPatch may also call TUNet to verify if a given meter is supported by TUNet, through the IsAMRMeter method of the MR server.

TUNet AMR meters will then be visible in DisSPatch on the Consumer Data page of the Circuit Element Editor, or displayed graphically with an AMR meter icon for the consumer having that meter number.

2) Milsoft DisSPatch can request TUNet to provide the outage status of one or more meters

Importance to user: The user can determine the current outage status of a TUNet AMR meter without sending a line crew to the site. The user can also confirm the restoration of power to meters. The user can select a particular meter or may select a group of meters downline from a selected circuit element and receive notification of the meter’s current outage status.

How Achieved: The user of the Milsoft DisSPatch system can send requests for current outage status of desired meters to TUNet from the Customer and Circuit Element Locate dialog and or by performing a "Ping Meters Downline" from a given selected element on the circuit model. Both methods use the InitiateOutageDetectionEventRequest web service method. The TUNet system determines the outage status of the meter or meters, and then sends the status information back to DisSPatch in an outage detection event notification using the ODEventNotification web service. DisSPatch can then update the outage status of the device, if necessary, to agree with the status provided by the TUNet system.

3) TUNet can send unsolicited outage detection events to the Milsoft DisSPatch System.

Importance to user:
The user can observe the outage status of meters, and the overall progression of the outage event in near real time. This facilitates quicker resolution of outages.

How Achieved:
TUNet automatically monitors AMR endpoints and asynchronously sends any outage status changes to the Milsoft DisSPatch system, using the ODEventNotification web service method. When the outage or restoration message is received, it appears in Milsoft’s DisSPatch graphical network view and or in a tabular view from within the Outage Manager's AMR Ping tab.

Summary of Interoperability Test Results Interface #5 OD→OA
Products: TUNet and Milsoft DisSPatch OMS

Table 1
Recommended MultiSpeak Methods

Method Name	Importance to User	Supported by Server[1] (OD)	Supported by Client[2] (OA)	Verified Inter-operable[3]
GetMethods	Requests a list of methods supported by the server.	X	X	X
PingURL	Verifies that the server is running and reachable.	X	X	X
GetAllOutageDetectionDevices	Returns all Outage Detection Devices.			
GetOutageDetectionDevicesByMeterNo	Returns an Outage Detection Device Associated with the Given Meter Number.			

Table 2
Optional MultiSpeak Methods

Method Name	Importance to User	Supported by Server[1] (OD)	Supported by Client[2] (OA)	Verified Inter-operable[3]
CancelODMonitoringRequestByObject	Cancel outage detection monitoring on the list of supplied circuit elements.			
DisplayODMonitoringRequests	Requests a list of circuit elements being monitored.			
GetDomainMembers	Requests the members of a given domain (type of fixed information, such as all of the counties in the database).			
GetDomainNames	Requests the domains (lists of fixed information, such as the counties served, or the acceptable status codes for this installation).			
GetOutageDetectionDevicesByStatus	Returns all outage detection devices with a given status.			
GetOutageDetectionDevicesByType	Returns all outage detection devices with a given type			
GetOutagedODDevices	Returns the outage detection devices that are currently experiencing an outage.		X	
InitiateODEventRequestByObject	Initiates an outage detection event request on service locations experiencing an outage downline from a circuit element.			
InitiateODMonitoringRequestByObject	Initiates an outage detection monitoring request on service locations downline from a circuit element at a given time interval.			
InitiageOutageDetectionEventRequest	Initiates an outage detection event request on the list of meter numbers.	X	X	X
ModifyODDataForOutageDetectionDevice	Allow OA to Modify OD data for a specific Outage Detection Device object.			

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 Interface #5 OA → OD
Products: TUNet and Milsoft DisSPatch OMS

Table 3
Recommended MultiSpeak Methods

Method Name	Importance to User	Supported by Server[1] (OA)	Supported by Client[2] (OD)	Verified Inter-operable[3]
GetMethods	Requests a list of methods supported by the server.	X	X	X
PingURL	Verifies that the server is running and reachable.	X	X	X
ODEventNotification	Notifies a change in outage detection events	X	X	X

Table 4
Optional MultiSpeak Methods

Method Name	Importance to User	Supported by Server[1] (OA)	Supported by Client[2] (OD)	Verified Inter-operable[3]
GetActiveOutages	Returns the outage Event IDs for all active outage events.	X		
GetAllCircuitElements	Returns all circuit elements.	X		
GetChildCircuitElements	Returns circuit elements immediately fed by the given line section or node (eaLoc).	X		
GetDomainMembers	The client requests from the server a list of names of domains supported by the server.	X		
GetDomainNames	Requests the domains (lists of fixed information, such as the counties served, or the acceptable statusCodes for this installation).	X		
GetDownlineCircuitElements	Returns all circuit elements downline from the given circuit element.	X		
GetDownlineMeterConnectivity	Returns the meter connectivity for all meters down line from a given meter	X		
GetModifiedCircuitElements	Returns all circuit elements that have been modified since the previous session identified			
GetOutageEventStatus	Returns the current status of an outage event, given the outage event ID.	X		
GetOutageEventStatusByOutageLocation	Returns the current status of an outage event, given the outage location.	X		
GetParentCircuitElements	Returns circuit elements immediately upstream of the given line section or node (eaLoc).	X		
GetSiblingMeterConnectivity	Returns all meters on the same transformer as the given meter.	X		
GetSubstationNames	Returns all substation names	X		
GetUplineCircuitElements	Returns circuit elements in the shortest route to source from the given line section or node (eaLoc).	X		
GetUplineMeterConnectivity	Returns all meters from the first up line distribution transformer.	X		
ODDeviceChangeNotification	Notifies of a change in outage detection events			

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 Interface #4 MR → EA
Products: TUNet and Milsoft DisSPatch OMS

Table 5
Recommended MultiSpeak Methods

Method Name	Importance to User	Supported by Server[1] (MR)	Supported by Client[2] (EA)	Verified Inter-operable[3]
GetMethods	Requests a list of methods supported by the server.	X	X	X
PingURL	Verifies that the server is running and reachable.	X	X	X
GetAMRSupportedMeters	Requests a list of all AMR supported meters.	X	X	X
GetLatestReadingByMeterNo	Requests the most recent meter reading for a given meter.		X	
GetLatestReadings	Returns the most recent readings for all AMR supported meters.		X	
GetReadingsByDate	Requests all meter readings taken between two dates.		X	
GetReadingsByMeterNo	Returns all readings for a given meter taken between two dates.		X	
IsAMRMeter	Return true if given meterNo has AMR	X	X	X

Table 6
Optional MultiSpeak Methods

Method Name	Importance to User	Supported by Server[1] (MR)	Supported by Client[2] (EA)	Verified Inter-operable[3]
GetDomainMembers	Requests the members of a given domain (type of fixed information, such as all of the counties in the database).			
GetDomainNames	Requests the domains (lists of fixed information, such as the counties served, or the acceptable statusCodes for this installation).			
GetHistoryLogByMeterNo	Requests data about meter events for a specific meter.			
GetHistoryLogsByDate	Requests all outage events occurring between two dates.		X	
GetHistoryLogsByDateAndEventCode	Requests data about meter events for a specific event type and date range.			
GetHistoryLogsByMeterNoAndEventCode	Requests data about meter events for a specific meter and date range.			
GetModifiedAMRMeters	Requests changes in AMR meters since a specific data exchange session.			
GetReadingsByUOMAndDate	Requests all meter readings taken between two dates for a specific type of reading (UOM = unit of measure, e.g. kW).			

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:

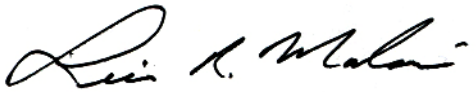
For Tantalus:

_____ Product Manager, Tantalus

Name: Richard Auerweck Title

Date : 11/06/2009

For Milsoft Utility Solutions.



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Assertions Verified by:

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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.

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