MultiSpeak Version 3.0 Interoperability Assertion

Statement of Interoperable Functionality between the C3-ilex EOScada system and TWACS for MultiSpeak interface #5 OD<>OA.

Vendor(s)	Product	Product Version	Role	Web Client Interfaces	Web Server Interfaces
DCSI	TWACS™ OPTIMUM™	1.5	OD	OD→OA	
C3-ilex	EOScada	3-5-13-3	OA		OD→OA
DCSI	TWACS™ OPTIMUM™	1.5	OD		OA→OD
C3-ilex	EOScada	3-5-13-3	OA	OA→OD	

Summary

Web Service interfaces using MultiSpeak standards were developed in order to provide C3-ilex EOScada system users access to outage information from DCSI's TWACS**™** system in particular electrical power distribution areas.

Assuming consumers in the C3-ilex EOScada model are assigned the appropriate meter numbers, C3-ilex can use this interface to determine which of those meters have DCSI AMR endpoints and the type of endpoint each meter has. The C3-ilex EOScada system can request and verify meters that have power via responses from the meter, and also those that have no power, or those meters that have failed to respond for a "ping" command. Also if the DCSI PROASYS™ product is installed at the customer location, "active outage" detection can be initiated to send changes in outage status to the C3-ilex EOScada system in an unsolicited manner as outages and/or restorations occur.

Prerequisites

EOScada

- EOScada must be provided the meter IDs that are known to the TWACS™ system.
- A Pseudo-Indication point corresponding to each meter must exist in the EOScada system and be appropriately configured.
- An Outage Detection link subscriber file must exist and be properly configured on the EOScada system.

Enable the Integration in TWACS™ OPTIMUM™

OPTIMUM™ runs on its own server as a "gateway" from C3-ilex EOScada to **TNS (TWACS® Net Server) - System Software**. No setup is required.

Enable the Integration in C3-ilex EOScada

Minimal setup is required to define a MultiSpeak interface in the C3-ilex EOScada system. A MultiSpeak configuration template is provided where the administrator will enter the Vendor's Company, along with the URL for the OPTIMUM™ MultiSpeak webservices and any user/password information.. Once the interfaces are defined, the integration can be enabled.

Specific Vendor Assertions:

1) During startup, the C3-ilex EOScada system will submit requests for the statuses of all meters of all online Outage Detection links to the TWACS™ system.

Importance to user:
By automatically sending the meters of online Outage Detection links to the TWACS™ system at startup, the EOScada™ operator does not need to be concerned about manually submitting them.

How Achieved:
If EOScada finds any of its Outage Detection links in an Online state at system startup, all links' meters are automatically submitted, in configurable batch sizes, to the TWACS™ system via the *InitiateOutageDetectionEventRequest* MultiSpeak web service method.

2) The C3-ilex EOScada system will submit requests for statuses of the link's meters to the TWACS™ system whenever the Outage Detection link is placed online.

Importance to user:
Individual EOScada Outage Detection links may be placed Offline, effectively disabling the link, allowing for the systems' maintenance or other planned downtime. The reloading of the link's meter list and the submittal of requests for their statuses when the link is placed Online means that changes to the meter list can be made on the fly.

How Achieved:
The Outage Detection link's subscriber file is reparsed whenever the link is placed online and all meters are submitted, in configurable batch sizes, to the TWACS™ system using the *InitiateOutageDetectionEventRequest* MultiSpeak web service method*.*

3) The C3-ilex EOScada system can request statuses for all of an Outage Detection link's meter periodically from the TWACS™ system or, alternatively, upon online link transitions only.

Importance to user:
Periodic meter requests can be made to ensure that the Indication point statuses reflect the current state of their associated meters and to resubmit requests for meter if a previous status change was not received from the TWACS™ system for some reason. The system can be alternately configured to register the points once only and rely solely on the TWACS™ system for outage event notification.

How Achieved:
Subscriber files can be configured for individual Outage Detection links such that status requests for the link's meters are submitted to the TWACS™ system using the *InitiateOutageDetectionEventRequest* MultiSpeak web service method either at some periodic rate or at startup only and online link transitions only.

Requests for the statuses of meters for which responses from previous requests are still pending (i.e. have not been received and have not timed out) are not submitted to the TWACS™ system.

4) The C3-ilex EOScada system will allow an operator to manually request the status of specific subset of meters from the TWACS™ system.

Importance to user:
The ability to associate a specific set or subset of an Outage Detection link's meters with points in the EOScada system provides operators with more granular control over which meter statuses are requested.

How Achieved:
An operator can initiate a request for the device's associated meters. The meters are submitted to the TWACS™ system using the *InitiateOutageDetectionEventRequest* MultiSpeak web service method.

5) The C3-ilex EOScada system can receive meter statuses from the TWACS™ system and set the states of corresponding EOScada Indication points accordingly.

Importance to user:
By setting the states of Indication points to reflect meter statuses, the EOScada system provides an immediate visual depiction of outages in a particular electrical power distribution area.

How Achieved:
The statuses of meters are sent by the TWACS™ system to the EOScada system via the *ODEventNotification* MultiSpeak web service method either spontaneously when an outage event occurs or as a result of a meter status request made by the EOScada system using *InitiateOutageDetectionEventRequest*.

6) The C3-ilex EOScada system will detect a lost network connection to the TWACS™ system and will recover and resubmit meter requests automatically upon restoration of connectivity.

Importance to user:
A robust system requires the detection of lost network connectivity to the TWACS™ system and the automatic recovery and resubmittal of meter requests when connectivity is restored.

How Achieved:
The EOScada system invokes the *PingURL* MultiSpeak web service method on the TWACS™ system periodically. If this call fails, the Outage Detection link is failed on the EOScada system which thereafter continues to invoke *PingURL.* If, at some later time, *PingURL* returns successfully (indicating restored connectivity to the TWACS™ system), the link transitions back to its Online state and the status requests of the link's meters are submitted to the TWACS™ system using *InitiateOutageDetectionEventRequest.*

7) TWACS™ OPTIMUM™ in conjunction with PROASYS™ can send unsolicited outage detection events to the C3-ilex EOScada system.

Importance to user:
TWACS™ OPTIMUM™ sends unsolicited outage detection events in order for C3-ilex EOScada system to detect outages and confirm restoration.

How Achieved:
OPTIMUM™ in conjunction with TWACS™ PROASYS™ automatically monitors AMR endpoints and sends any outage status changes to the C3-ilex EOScada system via the *ODEventNotification* MultiSpeak web service method in a spontaneous fashion.

Products: DCSI TWACS and C3-ilex EOScada
Summary of Interoperability Test Results
Interface #5
OD-OA

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.			
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.			
InitiateOutageDetectionEventRequest	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

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.			
GetAllCircuitElements	Returns all circuit elements.			
GetChildCircuitElements	Returns circuit elements immediately fed by the given line section or node (eaLoc).			
GetDomainMembers	The client requests from the server a list of names of domains supported by the server.			
GetDomainNames	Requests the domains (lists of fixed information, such as the counties served, or the acceptable statusCodes for this installation).			
GetDownlineCircuitElements	Returns all circuit elements downline from the given circuit element.			
GetDownlineMeterConnectivity	Returns the meter connectivity for all meters down line from a given meter			
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.			
GetOutageEventStatusByOutageLocation	Returns the current status of an outage event, given the outage location.			
GetParentCircuitElements	Returns circuit elements immediately upstream of the given line section or node (eaLoc).			
GetSiblingMeterConnectivity	Returns all meters on the same transformer as the given meter.			
GetSubstationNames	Returns all substation names			
GetUplineCircuitElements	Returns circuit elements in the shortest route to source from the given line section or node (eaLoc).			
GetUplineMeterConnectivity	Returns all meters from the first up line distribution transformer.			
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.

Certified by:

For C3-ilex, LLC:

Jeff Ransdell (signature)

Jeff Ransdell   VP Engineering

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Name: Title:

Date : ___4/3/2008_____

For ACLARA:

(signature)

                                                       Sr. Product Marketing Manager

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Name: Edward Kobeszka   Title

Date : 4-4-2008

Assertions Verified by:

(signature)

_____   _____

MultiSpeak Testing Agent

Name: Title

UISOL,Inc.. .
Testing Agent

Date : __4/4/2008_____

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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