Fleet Outlook®

Open Partner Interface User Guide

CalAmp Corporation
13645 Dulles Technology Drive, Herndon, VA 20171
Phone: 703. 262.0500
Fax: 703.262.0380
www.calamp.com

Document: MBUD-0190v14
June 2016

CalAmp | FleetOutlook Partner Interface Guide

Products offered may contain software proprietary to CalAmp or other parties. The offer of supply of these products and services does not include or infer any transfer of ownership. No part of the documentation or information supplied may be divulged to any third party without the express written consent of CalAmp.

CalAmp reserves the right to modify the equipment, its specification or this manual without prior notice, in the interest of improving performance, reliability, or servicing. At the time of publication all data is correct for the operation of the equipment at the voltage and/or temperature referenced. Performance data indicates typical values related to the particular product.

Product updates may result in differences between the information provided in this manual and the product shipped. We have made every effort to ensure the accuracy of all information contained in this document; however, CalAmp makes no expressed or implied warranty or representation based upon the enclosed information.

Revision History:

Version #	Revision Date	Author	Details
1.0	03/11/2010	Fenley	Incorporated operational information and overview sections.
2.0	04/06/2010	Fenley	Additional operations added.
3.0	04/15/2010	Fenley	Text clarification.
4.0	05/24/2010	Fenley	Added nearest vehicle search.
5.0	07/21/2010	Fenley	Added WO job window.
6.0	11/10/2010	Fenley	Added WSDL URL
7.0	01/21/2011	Fenley	Add upload template note; enhanced warning for duplicate IDs for multiple servers.
8.0	07/12/2011	Fenley	Added notes explaining usage.
9.0	08/15/2012	LaVigne	Added vehicle DTC codes.
10.0	03/2014	Platt	Revised operational information.
11	07/2015	Product	Updated for Jbus 3.0 release.

12	11/2015	Product	Updated with new fields for workOrder operation and added new workOrderGetStatus operation.
13	2/2016	LaVigne	Added new Vehicle Metrics section.
14	6/2016	LaVigne	Added AEMP compliant Equipment section

TABLE OF CONTENTS

1 PARTNER INTERFACE OVERVIEW

CalAmp provides data processing and Application Programming Interface (API) services to enterprises requiring an automated process to obtain event message data from assets reporting periodically. This process enables enterprises to utilize the data within their own applications and reporting systems, in addition to employing CalAmp applications.

CalAmp offers two API services for integrating FleetOutlook data with third-party systems: Data Pump and Partner Interface. Data Pump is a one way data feed to third-party systems. Partner Interface provides a two-way information exchange between FleetOutlook and third-party systems.

Both services use a standard SOAP messaging protocol in a web service executed over HTTP/S to pull operational data from FleetOutlook. The format of the response is an XML schema structure containing the most recent event messages. Using these services ensures that an entire enterprise receives intelligence about critical operations in a format that allows maximum use with the systems that manage your business.

Example Benefits of Partner Interface:

- Enables a two-way call to pull operational data for use with third-party systems.
- Create and edit new drivers in FleetOutlook as created/modified in third-party system.
- Create driver-to-vehicle assignments in FleetOutlook as created in third-party system.
- Query for vehicle location, driving directions and vehicle assignments by your third-party system against FleetOutlook.

1.1 AUTHENTICATION

The FleetOutlook SOAP web service requires WS-Security Username Token format where password type is PasswordText. The web service requires authentication in each call from the customer's system. Login credentials are sent in the SOAP header.

Note: CalAmp provides the login credentials to each Customer System. The login credentials are for the SOAP web service only.

1.2 WEB SERVICES

Each request for information is called an Operation. Operations are defined by a Web Service Definition Language (WSDL) document. The basic format is that of a Request and Response. The format of the response is an XML schema structure containing the most recent event messages.

Refer to Section 4: Appendix - WSDL Specification for a definition of each Request and Response released at the time of this document's printing.

2 INTEGRATION REQUIREMENTS

The data fields in the third-party system or application must match the data fields in FleetOutlook. CalAmp can assist a customer's development team in custom integration efforts. The systems will not synchronize correctly if mismatch data exists.

Typical data-matching tasks include:

- Driver to driver identification match between FleetOutlook and 3rd party system.
- Vehicle to vehicle identification match between FleetOutlook and 3rd party system.
- Driver to vehicle pairing is up to date and accurate.
- Device ID (GUID) that identifies the vehicle associated to a worker in the third party system.

To assist in FleetOutlook data population, use the Upload function in FleetOutlook Admin to upload Drivers, Vehicles and Driver-to-Vehicle assignments. After uploading approximately 40 records, test the service with approximately 40 vehicles. After successful testing, upload and validate.

3 APPENDIX – WSDL SPECIFICATION

The Appendix describes the Request and Response for each WSDL Operation in the Partner Service (OPI) web service.

3.1 COMMON DEFINITIONS AND STANDARDS

All data types are Strings. Any specific format requirements for these strings are shown for each field.

Strings that are date/times use the format: yyyy-MM-dd HH:mm:ss and are in GMT time. These fields are identified with a Date format below.

The FleetOutlook Partner Interface web service supports SOAP 1.1 and 1.2

All fields are mandatory (must be in request) except for the ones identified as optional. Some can be set to blank (or use the XML nil tag).

When an error occurs all response fields will be present, but some may be empty.

All responses will have an ErrorMessage field that will be set to "Success" if the request succeeds, or an appropriate error text if the request fails.

3.2 WSDL OPERATION DESCRIPTIONS

3.2.1 LOGIN AND AUTHENTICATION

WSDL operation: login

Log in to the system and obtain an authorization token to make calls for the same enterprise. CalAmp provides login credentials to each customer. The enterprise code is the CalAmp customer identifier and with the login id provides access to the appropriate vehicle and work order data.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
user	Unique login user id (case sensitive)	Alpha	Max 32	Y
password	Password for user id (case sensitive)	Alpha	Max 255	Y
enterpriseCd	ID that represents the customer	Alpha	5	Y

Response

Field	Description
authToken	Authentication token, used in subsequent calls
errorMessage	"Invalid Login", "Invalid EnterpriseCd", "System error" or "Success"

3.2.2 QUERY CURRENT VEHICLE LOCATION (MULTIPLE AND SINGLE)

There are two WSDL operations to get current vehicle location information: (1) multipleVehicleLocation, which allows querying for multiple vehicles at once, and (2) vehicleLocation, which allows querying for a single vehicle. The multiplevehiclelocation operation subsumes vehicleLocation. The vehicleLocation operation was left in for backward compatibility.

WSDL Operation: multipleVehicleLocation (preferred)

This function returns a list of event messages containing GPS location information for a list of vehicle IDs and time range. Only event messages with a valid GPS fix are returned. Date ranges are limited to 30 days. Number of vehicles in the list should be limited to 25. Each vehicle must exist in the CalAmp system, and must have an active tracking device assigned to obtain the location data. If a vehicle is not valid or is not associated with a tracking device, an error message is returned.

The start and end time fields define the date range for events returned. The end date is optional and defaults to the current time. If no vehicle events are found in the given date range, the most recent vehicle event that occurred before the start time (if one is found) will be returned, thus providing a way to obtain the most recent location information regardless of the date it occurred.

Available Since: approximately June 2009

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
<vehicle Request Container>	List of Vehicle Requests with the following fields (max 25 in list).			
vehicleID	A valid vehicle identifier	Alpha	Max 60	Y
startTime	Start Date and time of requested info (GMT time)	Date	19	Y
endTime	End Date and time of requested info (GMT time), defaults to current time	Date	19	N

Response

Field	Description
errorMessage	"Invalid Vehicle ID", "Invalid EnterpriseCd", "Invalid Start Time", "Date range too large", "System error" , "Invalid Token" or "Success"
<vehicle Location Container>	List of Vehicle Location Records with vehicle ID and embedded location record list:
vehicle ID	Echo back of vehicle ID
<List of Location records>	List of location records for the vehicle with the given Vehicle ID, with the following fields:
driverID	Driver ID . This field can be null.
deviceID	CalAmp GPS Unit ID
locationTime	Time of GPS message (GMT)
status	Vehicle state (Ignition Off, Moving, or Stopped)
speed	Speed in miles per hour
longitude	
latitude	
distanceTraveled	Distance Traveled since last message (in miles).

WSDL Operation: vehicleLocation (original, subsumed by multipleVehicleLocation)

This function works the same as multipleVehicleLocation, but it is only for querying for a single vehicle.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
vehicleID	A valid vehicle identifier	Alpha	Max 60	Y
startTime	Start Date and time of requested info (GMT time)	Date	19	Y
endTime	End Date and time of requested info (GMT time), defaults to current time	Date	19	N

Response

Field	Description
errorMessage	"Invalid Vehicle ID", "Invalid EnterpriseCd", "Invalid Start Time", "Date range too large", "System error" , "Invalid Token" or "Success"
vehicleID	Echo back of vehicle ID
<List of Location records>	List of location records for the vehicle with the given Vehicle ID, with the following fields:
driverID	Driver ID (aka Technician Code). This field can be null.
deviceID	CalAmp GPS Unit ID
locationTime	Time of GPS message (GMT)
status	Vehicle state (Ignition Off, Moving, or Stopped)
speed	Speed in miles per hour
longitude	
latitude	
distanceTraveled	Distance Traveled since last message (in miles).

3.2.3 CURRENT VEHICLE ASSIGNMENT INFORMATION

WSDL Operation: vehicleInfo

Provides the ability to view current driver and device assigned to a vehicle.

Available Since: 5.8.9 Release (Feb, 2010)

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
vehicleID	Identifier for the vehicle	Alpha	Max 60	Y

Response

Field	Description
errorMessage	"Invalid Vehicle ID", "Invalid EnterpriseCd", "System error", "Invalid Token" or "Success"
vehicleID	Identifier for the vehicle (echo back of ID provided in request)
operatorID	The ID of the operator currently assigned to the vehicle
deviceID	Identifier for the device installed in the vehicle

3.2.4 CURRENT DRIVER (OPERATOR) ASSIGNMENT INFORMATION

WSDL Operation: operatorInformation

Provides the ability to view the vehicle assignment and device associated with a driver (operator). Similar to the vehicle information query, except allows querying by the Driver ID instead of Vehicle ID.

Available Since: 5.8.9 Release (Feb, 2010)

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
operatorID	Unique operator ID (Tech code)	Alpha	Max 60	Y

Response

Field	Description
errorMessage	"Invalid Operator ID", "Invalid EnterpriseCd", "System error", "Invalid Token" or "Success"
operatorID	The ID of the operator (echo back of ID provided in request)
vehicleID	Identifier for the vehicle that the operator is currently assigned to
deviceID	Identifier for the device installed in the vehicle

3.2.5 LIST OF VEHICLES AND ASSIGNMENT INFORMATION

WSDL Operation: vehicleList

Returns a complete vehicle list for a FleetOutlook enterprise. Results are similar to calling the vehicle information (vehicleInfo) for all vehicles in an enterprise. Designed for initial implementations to aid in enterprise setup and data validation.

Available Since: 5.8.10 Release (May, 2010)

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	Varies	Y

Response

Field	Description
errorMessage	
<List of VehicleInfo Records>	List of records, with one record per vehicle in the enterprise, with the following fields:
vehicleID	Vehicle Identifier
vehicleName	
VIN	Vehicle VIN number
licenseNumber	Vehicle's license number

3.2.6 LIST OF DRIVERS (OPERATORS) AND ASSIGNMENT INFORMATION

WSDL Operation: operatorList

Provides a complete driver list for an enterprise. Results are similar to calling the current driver information (operatorInfo) for all drivers in an enterprise. Designed for initial implementations to aid in enterprise setup and data validation.

Available Since: 5.8.10 Release (May, 2010)

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	Varies	Y

Response

Field	Description
errorMessage	Success or "Error Occurred"
<list of OperatorInfo records>	List of records, with one record per driver in the enterprise, with the following fields:
operatorId	Unique operator ID (Tech code)
firstName	Operator's first name
lastName	Operator's last name

3.2.7 VEHICLE ODOMETER

WSDL Operation: vehicleOdometer

Get adjusted (device + seed) odometer value and current seed setting for a vehicle. Useful for customers that use the vehicle maintenance module in FleetOutlook or their proprietary system.

Available Since: 5.8.10 Release (May, 2010)

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	Varies	Y
vehicleID	Vehicle Identifier	Alpha	Varies	Y

Response

Field	Description
errorMessage	Success, "VehicleID Required", or "Error Occurred"
vehicleID	Echo back of vehicle ID
odometer	Vehicle's odometer value: GPS-based odometer plus stored "seed" value to synch up with actual vehicle odometer
seed	Stored odometer seed added to GPS-based odometer (will be 0 if no seed given)

3.2.8 CREATE DRIVER (OPERATOR) OR UPDATE DRIVER (OPERATOR) INFORMATION

WSDL Operation: operator

This function allows an Operator (driver) to be added, updated or deactivated. The operator can be assigned to a vehicle using the vehicle assignment operation. Note that there is a separate operation for assigning drivers to vehicles, or updating their work status during the day.

The 'Action' field below must be one of ADD (add a new operator), UPDATE (update information for existing operator), or DEACTIVATE (remove an operator). For UPDATE, if the Operator does not exist it will be added. For ADD, if Operator exists it will be updated.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
operatorID	Unique operator ID (aka Tech code)	Alpha	Max 60	Y
action	ADD, UPDATE, or DEACTIVATE	Alpha	varies	Y
firstName	First name of driver	Alpha	Max 60	Y
lastName	Last name of driver	Alpha	Max 60	Y

Response

Field	Description
operatorID	Echo back of the Operator ID provided as input
errorMessage	"Invalid Operator ID", "Invalid EnterpriseCd", "System error", "Invalid Token" or "Success"

3.2.9 VEHICLE ASSIGNMENT

WSDL Operation: vehicleAssignment

This function allows Operator - Vehicle assignments. The Operator function should be used first to add new operators. Operators and Vehicles should exist in the FleetOutlook system before this function is called. The vehicle should exist in the system and have a valid tracking device associated with it. Note that the tracking devices paired with vehicles will be maintained by FleetOutlook or through the customer using the FleetOutlook administrative portal.

At this time, the ActiveDate is not used. It is a placeholder for future use. For now, the ActiveDate is always the current time.

When the call succeeds, the Vehicle and Operator (Driver) are paired. To disassociate a driver from a vehicle, send the vehicleID but leave the operatiorID field blank.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
operatorID	Unique operator ID (Tech code)	Alpha	Max 60	Y
vehicleID	Vehicle identifier	Alpha	Max 60	Y
activeDate	Date and time this assignment becomes active (FUTURE USE)	Date	19	Blank/Nil OK

Response

Field	Description
errorMessage	"Invalid Vehicle ID", "Invalid Operator ID", "Invalid EnterpriseCd", "System error" " , "Invalid Token" or "Success"

3.2.10 WORK ORDER ADD OR UPDATE

WSDL Operation: workOrder

This function allows work order records to be added or updated. If the work order does not exist, it is added. If the Work Order exists, it is updated with any new information provided in any of the non-blank/null fields (for example, assigned operator or modified scheduled date and time). It is possible to provide either a customer/work order address using the address fields, or specify a latitude and longitude instead. Note that the customer address is used only for geocoding the location of the work order and in reports.

Many commonly used predefined fields exist in the workorder structure. Following are some important notes on some of the fields below:

- The operator ID can be left blank to leave the workorder in an unassigned state for future assignments.
- The scheduled date, time, and duration are meant to specify a scheduled time window for the job, i.e., not a frequently updated ETA.
- The main field used for workflow is the workorderStatus field.

There are some fields below marked as deprecated. They are still part of the request, but if information is provided for these fields it will not be used.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
<workorder>	Workorder structure with the following fields:			Y
workOrderID	Identifier for the workorder	Alpha	Max 60	Y
operatorID	Unique operator ID (aka Tech code). Leave empty if unassigned.	Alpha	Max 60	Blank OK
jobNumber	Used for job sequence numbers, etc.	Alpha	Max 60	Y
scheduleDate	The date, format YYYY-MM-DD	Date only	10	Y
scheduleStartTime	The start time, HH:MM	Time	5	Y
scheduleDuration	The length of the job HH:MM	Time	5	Y

Field	Description	Format	Length	Required?
customerCommitStart	Customer promised job window start time	Time	5	Y
customerCommitEnd	Customer promised job window end time	Time	5	Y
workOrderType	A work order or job category	Alpha	Max 60	Y
workOrderStatus	Status code for workorder state, like unassigned, incomplete, arrived, departed, completed, etc.	Alpha	Max 20	Y
accountNumber	Customer account number, used for identification only	Alpha	Max 30	Y
customerLastName	Customer info for job identification	Alpha	Max 30	Blank OK
customerFirstName	Customer info for job identification	Alpha	Max 30	Blank OK
customerPrimaryPhone	Customer info for job identification	Alpha	9	Blank OK
customerSecondaryPhone	Customer info for job identification	Alpha	9	Blank OK
streetAddress	address (street name and number) of job location	Alpha	Max 60	Blank OK*
city	address (city) of job location	Alpha	Max 60	Blank OK*
state	address (state or province code) of job location -- this is the state or province code (abbreviation)	Alpha	Max 5	Blank OK*
postalCode	address (zip code) of job location	Alpha	Max 10	Blank OK*
latitude	Latitude for job location (can be used with longitude in place of address fields)	Numeric		N *
longitude	Longitude for job location (can be used with latitude in place of address fields)	Numeric		N *
	The following fields are deprecated:			
jobStatus	Optional additional job status code	Alpha	Max 20	N
jobDescription	Description for additional status	Alpha	Max 60	N
propertyContainer	ADDITIONAL PROPERTIES (optional for extra fields as needed):			Blank/nil OK
notes	Note to driver. Displays on the driver's Garmin screen up to 200 characters.	Alpha	10	N

Field	Description	Format	Length	Required?
AutoArrivalRadius	Radius in Meters to flag Auto Arrival. If omitted, zone or zip code settings will be used.	Numeric		N
AutoArrivalInterval	Length of time in seconds the vehicle is within the radius before Auto Arrival is flagged. If autoArrivalRadius is not specified, this parameter will be used. If omitted, zone or zip code settings will be used.	Numeric		Y

*__Note:__ Either the address fields or a latitude/longitude must be provided, however, both sets of fields are not required.

Response

Field	Description
workOrderID	Echo back of the Work Order ID when successful
errorMessage	"Invalid Work Order ID", "Invalid Operator ID", "Invalid EnterpriseCd", "System error" " , "Invalid Token" or "Success"

3.2.11 UPDATE WORK ORDER STATUS

WSDL Operation: workOrderStatusUpdate

This function is used only for updating the work order status fields for an existing work order or changing the assignment of a workorder to an operator. The work order should already exist in the system. Use the workorder function to add a new workorder. If assigning an operator, the operator m already exist in the system. *The workorder function should also be used to update other fields in the workorder like the customer information or scheduled time.*

The job status and job status description are extra fields that may be different from the usual work order status that is used. For example, use job status to track customer notifications or other workflow information separate from the actual job workflow. These fields are optional.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation	Alpha	5	Y
authToken	Authentication token	Alpha	varies	Y
workOrderID	Workorder identifier		Max 60	Y
operatorID	Unique operator ID (aka Tech code). (Empty if unassigned)		Max 60	Y
workOrderStatus	Status code for workorder state, like unassigned, incomplete, arrived, departed, completed, etc.		Max 20	Y
jobStatus	See note above.		Max 20	N
jobStatusDescription	See note above.	Alpha	Max 60	N

Response

Field	Description
workOrderID	Echo back of Work Order ID when successful
errorMessage	"Invalid Work Order ID", "Invalid Operator ID", "Invalid EnterpriseCd", "System error" " , "Invalid Token" or "Success"

3.2.12 WORK ORDER GET STATUS

WSDL Operation: workOrderGetStatus
This function is used to get the status of an existing work order. The work order should already exist in the system.

Available Since: November 2015.

Request:

Field	Description	Length	Required ?
enterpriseCd	ID that represents the installation	5	Y
authToken	Authentication Token	Varies	Y
workOrderID	Workerorder identifier	Max 60	Y

Response:

Field	Description
workOrderID	Echo back of Work Order ID, when successful
jobStatus	Unassigned, arrived, departed, completed, etc.
Arrived	Date/Time of arrival
Departed	Date/Time of Departure
Completed	Date/Time of Completion
errorMessage	“Invalid Work Order ID”, “Invalid EnterpriseCd”, “System Error”, “Invalid Token”, or “Success”

3.2.13 VEHICLE SEARCH

WSDL Operation: nearestVehicleLocation
This function requests a search for the nearest vehicles to a provided location reference point. The reference point can be in the form of:

- A street address
- A latitude/longitude, or
- A Vehicle ID. (The vehicle's last known location is used as the reference.)

The search returns a list of Vehicles and their locations sorted by distance from the reference location. The list can be limited by the following optional parameters:

- Maximum distance from the reference location, in feet. (default = 5280 [100 miles])
- Maximum number of vehicles returned, (default = 20)
- Maximum age of location reading, in minutes. (default = 1440 [1 day])

Available Since: 5.8.12 (May 2010)

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token	Alpha	varies	Y
<choice>	The lat/lon of one of following will be used for search. Only one of three (vehicleId, address, or latlon) can be set.			Y
vehicleId	A valid vehicle identifier. The last location of this vehicle will be determined.	Alpha	varies	
<address>	A valid street address			
buildingNumber	Street Number	Alpha	varies	
street		Alpha	varies	
city		Alpha	varies	
state		Alpha	varies	
postalCode		Alpha	varies	
country	US for United States, CA for Canada. Defaults to US.	Alpha	2	
<latLon>	Latitude and Longitude for location			
latitude		Alpha	varies	
longitude		Alpha	varies	
maxDistance	Maximum distance from determined location. In feet. Defaults to 100 miles.	Alpha	varies	N
maxVehiclesInResponse	Maximum number of vehicles to return in response. Defaults to 20.	Alpha	varies	N
maxLocationAge	Maximum age of last event. In minutes. Defaults to 2 days.	Alpha	varies	N

Response

Field	Description
vehicleId	Echo back of vehicle id if it was supplied
referenceAddress	Determined address from supplied location (See request for format)

referenceLatLon	Determined lat/lon from supplied location. (See request for format)
<List of found vehicle records>	
vehicleId	Id of found vehicle
vehicleName	Name of found vehicle
operatorId	Driver ID (aka Technician Code)
distanceFromLocation	Distance of vehicle from supplied location. In feet.
eventAge	Age of last event from this vehicle. In minutes.
latLon	Latitude/Longitude of this vehicle's last know location. (See request for format)
address	Address of vehicles last known location. (See request for format)

3.2.14 UPDATE DRIVER (OPERATOR) STATUS

IMPORTANT NOTE: This function is implemented, but the data input by this function is not currently visible or useable anywhere in FleetOutlook or Reports. It does not provide the customer any useful functionality at this time. It may be useful for planned Tech Direct functionality.

WSDL Operation: operatorStatusUpdate

This function is used to update an Operator's current work status during the day. The status values are workflow event types set up for a particular enterprise. The Operator should already exist in the FleetOutlook. The status codes do not need to be set up in advance. If the status code does not exist already for the given enterprise, it will be added as a valid status code along with the description. This function can be used to initially populate the list of valid status codes as well. When setting a status code that already exists for a given operator, the description field is not necessary.

Available Since: Initial Release

Request

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
operatorID	Unique operator ID (aka Tech code)	Alpha	Max 60	Y
statusTime	Date and time of status change	Date	19	Y
statusCd	An operator status or workflow code like: Arrived, Departed, LogOn, LogOff, LunchBreak, etc.	Alpha	Max 60	Y
statusDescription	Description used when adding new types of status codes.	Alpha	Max 80	N

Response

Field	Description
operatorID	Echo back of Operator ID when call is successful
errorMessage	"Invalid Operator ID", "Invalid EnterpriseCd", "System error" " , "Invalid Token" or "Success"

3.2.15 VEHICLE DTC CODES

WSDL Operation: vehicleDTCCodes

Get Active DTC Codes for Vehicles that are equipped with devices capable of reporting them.

Available Since: August 2012.

Request:

Field	Description	Format	Length	Required?
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	Varies	Y
vehicleID	Vehicle Identifier	Alpha	Varies	Y

Response:

Field	Description
errorMessage	Success, "VehicleID Required", or "Error Occurred"
vehicleID	Echo back of vehicle ID
<list of active DTC Codes>	List of records, with one record per active DTC Code for the vehicle, with the following fields:
dtcCode	Active DTC Code, e.g, "P0176"
activeTime	Timestamp of when the code was reported as active

3.2.16 JBUS

WSDL Operation: vehicleJBus

Pulls available JBus, if available, from all vehicles requested.

Revised Since: March July 2015.

Request

Field	Description	Format	Length	Required
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
vehicleID	A valid vehicle identifier	Alpha	Max 60	Y

Response

Field	Description
errorMessage	Success or error message
vehicleID	Echoed vehicleId
locationTime	Timestamp of message
<List JBus Message>	Max of 2. One for each protocol
jbusProtocol	JBus protocol. 1708 or 1939
VIN	Jbus VIN provided if available
odometer	Latest reported odometer in x.x miles
highResolutionOdometer	Latest reported HR odometer in x.x miles
batteryVoltage	Main battery in x.x volts
switchedBatteryVoltage	Regulated voltage supply in x.x volts
engineSpeed	Null field. No longer reported.
totalFuel	Lifetime reading of fuel consumed by the engine in x.x gallons
totalIdleFuel	Lifetime reading of fuel consumed by the engine while not in motion in x.x gallons
totalIdleHours	Lifetime number of hours spent with the engine on while not in motion in x.x hours
totalEngineHours	Lifetime number of hours spent with the engine on in x.x hours
engineCoolantTemperature	
engineOilTemperature	
SeatBeltUsed	Null field. No longer reported.

3.2.17 VEHICLE METRICS

WSDL Operation: vehicleMetricsRequest

Pulls the Vehicle Metrics Data, for the single day requested, for all vehicles in the specified hierarchy group.

This is a summary of the day's metrics for each vehicle.

Optionally, Time data, Meta data and Hierarchy data can be requested.

Revised Since: February 2016.

Request

Field	Description	Format	Length	Required
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
group	A valid group name	Alpha	Max 60	Y
reportDate	The day that the summary Vehicle Metrics Data is being requested for.	Date, yyyy-mm-dd format	10	Y
includeTimeData	Optional parameter that indicates whether to include time characterization data in the response.	Y / N	1	N
includeMetaData	Optional parameter that indicates whether to include additional vehicle data in the response.	Y / N	1	N
includeHierarchyData	Optional parameter that indicates whether to include the full definition of the Group Hierarchy data in the response.	Y / N	1	N

Response

Field	Description
errorMessage	Success or error message
<timeData>	This section is only included if "includeTimeData" parameter was "Y"
month	Text for month of the year, e.g., "July"
week	Week number of the year (1 – 52)
quarter	1, 2, 3 or 4
weekday	Text for day of the week, e.g., "Thursday"
year	YYYY format

timeZone	Time Zone abbreviation, e.g., “EDT”
<end timeData>	
date	Echoed requested date in yyyy-mm-dd format
<vehicleMetricsData>	This section is repeated for each Vehicle in the selected Group
<hierarchy>	This section is only included if the “includeHierarchy” parameter was “Y”
groupLevel1	The group name of the highest group level in the hierarchy, e.g., “ABC Enterprise Group”
groupLevel2	The group name of the level 2 group for this Vehicle (if defined)
groupLevel3	The group name of the level 3 group for this Vehicle (if defined)
groupLevel4	The group name of the level 4 group for this Vehicle (if defined)
groupLevel5	The group name of the level 5 group for this Vehicle (if defined)
groupLevel6	The group name of the level 6 group for this Vehicle (if defined)
groupLevel7	The group name of the level 7 group for this Vehicle (if defined)
groupLevel8	The group name of the level 8 group for this Vehicle (if defined)
<end hierarchy>	
<metadata>	This section is only included if the “includeMetaData” parameter was “Y”. These are additional data fields that may be known information about the Vehicle.
licensePlate	
licenseState	The 2 character abbreviation for the state issuing the license plate
make	The vehicle Make, e.g., “Toyota”
model	The vehicle Model, e.g., “Corolla”
year	The vehicle year of manufacture, e.g., “2014”
fuelType	
fuelTankCapacity	
epaHighway	The EPA highway estimated fuel efficiency in mpg.
epaCity	The EPA city estimated fuel efficiency in mpg.
epaCombined	The EPA combined estimated fuel efficiency in mpg.
deviceESN	The electronic serial number of the device installed in the vehicle
deviceModel	e.g., “LMU-2620”
<end metadata>	
vehicleId	Echoed vehicleId
vehicleName	
vehicleCategory	if defined

vin	if the vehicle is equipped with a device that can read the VIN or it has been input by an administrator.
trueOdometer	Vehicle Bus reported odometer, for vehicles equipped with a device that can read it.
gpsOdometer	GPS derived distance meter
odometer	Reported Odometer meter based on vehicle bus reading capability
trueEngineHours	Vehicle Bus reported engine hours meter, for vehicles equipped with a device that can read it.
derivedEngineHours	Engine hours total derived from reported ignition state changes.
workingIdleTime	Total count of Idle Time when PTO is engaged (PTO ON)
wasteIdleTime	Total count of Idle Time when PTO is NOT engaged (PTO OFF)
totalIdleTime	Total time spent stationary with the ignition on for the day.
engineOnTime	Total time with Ignition On for the day
distance	Total distance driven in the day
fuelConsumed	Fuel Consumed in the day (if reported)
fuelConsumedIdling	Fuel Consumed in the day (if reported) while idling
fuelEfficiency	[distance] / [fuelConsumed] For vehicles that report fuel consumption only
input1Name	Label assigned to Digital Input 1 (if defined)
input1OnDuration	Total time this input was in the active state during the day. (if defined)
input1IsPTO	Y or N if this input is designated to be indicating that PTO is engaged.
input2Name	Label assigned to Digital Input 2 (if defined)
input2OnDuration	Total time this input was in the active state during the day. (if defined)
input2IsPTO	Y or N if this input is designated to be indicating that PTO is engaged.
input3Name	Label assigned to Digital Input 3 (if defined)
input3OnDuration	Total time this input was in the active state during the day. (if defined)
input3IsPTO	Y or N if this input is designated to be indicating that PTO is engaged.
input4Name	Label assigned to Digital Input 4 (if defined)
input4OnDuration	Total time this input was in the active state during the day. (if defined)
input4IsPTO	Y or N if this input is designated to be indicating that PTO is engaged.
<end vehicleMetricsData>	

3.2.18 AEMP EQUIPMENT

WSDL Operation: aempEquipment

Pulls available information about a specific vehicle and responds in AEMP compliant format.
Note that formats for this section may differ from those presented for other services in this interface.
Revised Since: May 2016.

Request

Field	Description	Format	Length	Required
enterpriseCd	ID that represents the installation site	Alpha	5	Y
authToken	Authentication token from login call	Alpha	varies	Y
vehicleID	A valid vehicle identifier	Alpha	Max 60	Y

Response

Field	Description
errorMessage	Success or error message
version	Response version number, currently = “1.0”
snapshotTime	Timestamp of when this information was extracted from the system, this is NOT the locationtime from any event, but the time the response is sent. Format is ISO 8601 format, e.g., "2016-05-16T19:57:32.5520299Z"
<Equipment>	
<EquipmentHeader>	
Make	Manufacturer of the equipment
Model	Model of the equipment
EquipmentID	FleetOutlook VehicleID
SerialNumber	VIN of the Vehicle / Unit
<end EquipmentHeader>	
<Location>	
datetime	Locationtime of last good reported location, Format is ISO 8601, e.g., "2016-05-16T19:57:32.5520299Z"
Latitude	Latitude of the location
Longitude	Longitude of the location
Altitude	Altitude in meters of the location
AltitudeUnits	Always = “meters”
<end Location>	

< CumulativeOperatingHours >	Lifetime number of hours spent with the engine on
datetime	Locationtime of last reported event, Format is ISO 8601, e.g., "2016-05-16T19:57:32.5520299Z"
OperatingHours	Total Engine Hours meter value in ISO 8610 format, e.g., "P32DT17H35M"
<end CumulativeOperatingHours >	
<end Equipment>	