Enterprise API Interface Definition

This document describes the interface between the Control Optimization Engine and the CIM Enterprise Interface. Five functions are defined with descriptions of the parameters. See Figure 1 of the *EPRI Sourcing SOW – Enterprise Interface for DMS Tool V2.docx* for a point of reference.

If additional information is required that is not provided by the Enterprise API Interface described here, it is assumed the needed information will be acquired from the Enterprise Configuration.

It may make sense to implement the CIM Enterprise Interface as a dynamically linked library (DLL) to make it a general purpose application, allowing expansion to be used by multiple applications at a later date.

# DER Group Creation

createDERGroup()

This function will create a DER group in DERMS.

## Call Parameters

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| DERGroupID | Unique identifier of the DER group used in DERMS to define the group. | mRID  (128 bit master resource identifier) |
| DERDeviceID | Array of device names with the last value a NULL. Names are the same as used in DERMS. | Array of mRIDs |

## Return Parameter

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| returnValue | Zero for success; other error codes to be defined by Boreas. | Integer |

# Querying a DER group

requestDERGroupMembers()

This function will request a list of members of a specified group from the list maintained in DERMS.

## Call Parameter

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| DERGroupID | Unique identifier of the DER group used in DERMS to define the group. | Same as above. mRID |

## Return Parameter

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| DERDeviceID | Array of device names with the last value a NULL. Names are the same as used in DERMS. | Array of mRIDs |

# DER Group Status Monitoring

requestDERGroupStatus()

This function will return the aggregate output of the DER devices in the specified DER group.

## Call Parameters

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| DERGroupID | Unique identifier of the DER group used in DERMS to define the group. | Same as above. mRID |
| quantity | Real or reactive power | Integer: 0 = real, 1 = reactive |

## Return Parameter

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| statusMonitor | A structure containing:   * Present Maximum Capability * Present Value in watts (real) or vars (reactive) * Present Minimum Capability * DER Group ID * Quantity (Real or Reactive power) | Structure { Float presentMaxCapability Float presentValue Float presentMinCapability mRID DERGroupID Integer quantity } |

# DER Group Dispatch

dispatchDERGroup()

This function will set the aggregate output of the DER devices in the specified DER group.

## Call Parameters

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| DERGroupID | Unique identifier of the DER group used in DERMS to define the group. | Same as above. mRID |
| requestedValue | Desired output value to change the groupName to in watts (real) or vars (reactive). | Float |
| quantity | Real or reactive power | Integer 0 = real, 1 = reactive |

## Return Parameter

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| returnValue | Zero for success; other error codes to be defined by Boreas. | Integer |