

APPENDIX E – VERB DEFINITIONS

ACKNOWLEDGE

This verb is used to acknowledge the application receipt of a PROCESS request. This function also conveys the result of the original request. An example of this is ACKNOWLEDGE PO, where a PROCESS PO has been issued and the corresponding business application acknowledges the receipt of the PO and responds with an acceptance or counter offer.

ADD

This verb is used to initiate the adding of a document or data entity to another business application. The ADD verb is used when the sender of the BOD is not the owner of the data, but is sending a request for the document to be created.

ALLOCATE

This verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example of this is the allocating of costs from one business application or entity to another. The business oriented word is used instead of the data processing term for the sake of clarity.

CANCEL

The CANCEL verb is used when the sender of the BOD is not the owner of the data, but is sending a request for the document to be canceled.

An example is the CANCEL PO where the business implications must be calculated and a simple data processing term such as delete can not fully convey the business meaning and required processing associated with the meaning.

CHANGE

The CHANGE verb is used when the sender of the BOD is not the owner of the data, but is sending a request for the document to be changed.

An example of this is CHANGE REQUISITN, where the original document needs to be changed based on a specific business event.

CONFIRM

This verb is used to respond to a request to confirm from the receiving application. This function also conveys the result of the original request. An example of this is CONFIRM ISSUE where the inventory issue needs to be confirmed in an ERP application based on an event in a warehouse management business application.

CREATE

This verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. This is generally used when the processing is initiating the building of a document, rather than moving a document from one system to another. Examples of this include CREATE PRODORDER and CREATE BOM.

In these cases, the documents have not been constructed and need to be. This differs from the ADD PO or ADD REQUISITN processing as those requests refer to a document that has already been established and the document is being communicated to another business application.

GET/SHOW & GETLIST/LIST BEHAVIOR BACKGROUND

The behavior and use of the GET sequence of verbs for Open Applications Group Business Object Documents is very important to enable business software components to request information from each other for instances other than synchronizing or updating information.

These verbs may be used in many ways to facilitate the communication between components. A few examples of these uses includes:

- Requesting information in order to validate specific data fields that have not have been synchronized. This decision to synchronize may have been deliberate or by error.
- Requesting information in order to resolve missing information. One use could be in exception handling when an update can not proceed because of a missing piece of

information such as ITEM for a sales order. The GET or GETLIST enables a component to request the missing information in order to complete an event.

- When a component has a legitimate request for information in order to build a query result, a report, or a decision support mechanism.
- When the selected integration model of communication is request and reply instead of publish and subscribe.

NOTE:

The behavior of these verbs is intended to be consistent for any noun they are paired with but they will usually have specifics that are described in each BOD Chapter. These specifics include which Field Identifiers and Data Types may be used for selection and response.

It is for these reasons that it is always necessary and prudent to refer to each BOD Chapter Description before completing the development of a BOD-based API.

GET

The purpose of the GET verb is to communicate to a business software component a request for an existing piece of information to be returned. The GET may be paired with most of the nouns defined in the OAGIS specification.

The response to this request is the SHOW verb. The behavior of a BOD with a GET verb is quite predictable across most of the nouns it may be paired with.

The GET is designed to retrieve a single piece of information by using that information's primary retrieval field, or key field. The GET verb is not used to request several documents at once. The GETLIST verb is designed to achieve that purpose and will be covered in more detail later.

Selection Criteria:

There are two types of selection capabilities for most BOD's that use the GET verb.

1) The first selection capability is called **Field-Based Selection**. Within a GET-based Business Object Document, the first Data Type that occurs in a specific BOD structure is commonly used to provide the Field-Based Selection criteria. This is always defined within the specific BOD and is commonly the required fields for that specific Data type.

The Field-Based Selection enables the requester to provide a value or values (in the case of multiple required Field Identifiers), in the required fields. Then the responding component uses those values to find and return the requested information to the originating business software component.

2) The second type of selection capability for GET-based BODs is called **Data Type Selection**. Data Type selection enables the requester to identify which Data Types within the noun are requested to be returned in the response. The use of this capability is described for each corresponding Data Type for all BODs that use the GET verb.

The Data Types are identified for retrieval within the GET instance of a BOD by including the name of the Data Type in the meta data but without any Field Identifiers or Segments identified within the Data Type. This will signify to the responding application that all of the data that corresponds to that Data Type is to be included in the response.

If the Data Type is not requested, the Data Type identifier is not included in the GET request and this will signify to the responding component that the Data Type is not to be returned.

GETLIST

The purpose of the GETLIST verb is to enable a business software component to request summary information for one or more occurrences of a specific noun from another business software component. The GETLIST may be paired with most of the nouns in the OAGIS specification.

The response to this request is the LIST verb. The behavior of the GETLIST verb is quite predictable across most of the nouns it may be paired with.

The GETLIST is designed to retrieve multiple occurrences of data such as all of the sales orders or all of the purchase orders within a requested range. The GETLIST does not require an exact match of the key fields in order to retrieve information. It may use a range selection criteria with a "from" and "to" selection capability. This behavior is quite different from the GET verb, which is designed to retrieve a specific noun using a specific key field.

The GETLIST verb also enables the retrieval of information across several documents by using selection fields. An example of this could be requesting all sales order lines for a specific item. This type of functionality is limited to the capabilities of the responding application and needs to be determined during the implementation project. More details on this capability will be described below.

Selection Criteria:

There are three two types of selection capabilities for most BOD's that use the GETLIST verb.

1) The first two selection capabilities are called **Field-Based Selection** and **Range-Field Selection**. Within a GETLIST-based Business Object Document, unlike the GET-based BODs, most all of the Data Types that occur in a specific BOD structure may be used to provide the Field-Based Selection or Range-Field Selection criteria. This is always defined within the specific BOD and is commonly but not always the required fields within each Data Type.

The Field-Based Selection enables the requester to provide a value in the desired selection field. Then the responding component uses that value to find and return the requested information to the originating business software component.

If a single field selection value is provided, the responding business software component uses this to do a start-like request to retrieve the data requested. The first value does not have to be an exact match to begin the selection process.

Range-Field Selection Differences:

The Range-Field Selection of values processing is a very important component of the GETLIST behavior as it enables a query-like capability to the requesting application. Each Data Type that enables either Field-Based Selection or Range-Field Selection will be described in the BOD specific chapter in detail.

The Range-Field Selection requires the coding of two occurrences of the same Field Identifier or Segment within the Data Type. The receiving business software component uses the first occurrence as the "FROM" selection and the second occurrence of the value as the "TO" selection.

In all cases where Range-Field Selections are used, the solution set to be returned will include through the "TO" field. This is sometimes known as an "inclusive" range selection. One exception to this rule is the use of the MAXITEMS Field Identifier.

Both the Field-Based Selection and the Range-Field Selection may also use a special processing capability enabled by a Field Identifier called MAXITEMS. The MAXITEMS is a Field Identifier used to limit the number of occurrences of a noun's values in a response.

Examples of MAXITEMS:

For example, a business software component may request all purchase orders with a PO Number between 10 and 500. If the MAXITEMS Field Identifier is set to 50, the responding business software component will only return 50 occurrences of the PO noun even if it only reached the PO Number 245 during the processing.

A second example of the use of MAXITEMS is if a business software component requested all sales orders beginning with 8150 or higher. In this case the selection would continue only until the MAXITEMS value is reached, even if there were 100,000 occurrences.

Bypassing BOD Noun hierarchies

The GETLIST verb has the unique capability to bypass the hierarchy of Data Types within a noun, and use Field Identifiers from any of the Data Types within a noun. An example of this processing is for a business software component to request all purchase orders for a range of ITEMS between 10000 and 99999. This request requires the responding business software component to respond to a request for a range of fields that are normally not the key field of a document.

Another example where it would be useful is for a business software component to request all sales orders that belong to a certain sales person. This is a practical example of something that occurs every day in business.

This capability is limited to the ability of the responding business software component to deliver this behavior and should be determined before this request is attempted.

2) The third type of selection capability for GET-based BODs is called **Data Type Selection**. Data Type selection enables the requester to identify which Data Types within the noun are requested to be returned in the response. The use of this capability is described for each corresponding Data Type for all BODs that use the GETLIST verb. This capability is exactly the same as for the GET verb.

The Data Types are identified for retrieval within the GETLIST instance of a BOD by including the name of the Data Type in the meta data but without any Field Identifiers or Segments identified within the Data Type. This will signify to the responding application that all of the data that corresponds to that Data Type is to be included in the response.

If the Data Type is not requested, the Data Type identifier is not included in the GETLIST request and this will signify to the responding component that the Data Type is not to be returned.

ISSUE

This verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example is the issue of material from inventory. The business use of the word is used instead of the data processing term for the sake of clarity.

LIST

The purpose of the LIST verb is to enable a business software component to respond to a GETLIST request or to proactively send a listing of summary information containing many instances of occurrences of data for a noun to one or more other business software components.

The results of a LIST may then be used as is, or they may be used to select a specific instance of a document or entity in order to issue a detail GET request.

Although BODs based on this verb do not commonly cause updates to occur, there may be times when the component receiving the LIST decides to use the information it receives to update. This is entirely the decision of the receiving software component and is not forbidden.

The behavior of the LIST verb is quite straight forward with a few exceptions.

The LIST response to any GETLIST request needs to read the request carefully to ensure the response is returning the requested Data Types.

The LIST needs to ensure the response to the GETLIST does not exceed the MAXITEMS value.

The LIST needs to find the specific Field Identifiers that are used for the Field-Based Selection or Range-Based Selection and process them accordingly.

LOAD

This verb is used to initiate the adding of a document or data entity to another business application. Generally this verb is used when maintenance to the document will then pass to the receiving application permanently. An example of this is LOAD PAYABLE or LOAD RECEIVABLE, where once the request is processed, the sending application has no direct control over the document or entity again.

POST

The POST verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example is POST JOURNAL, where information is posted to a general ledger set of financial records. The business use of the word is used instead of the data processing term for the sake of clarity.

PROCESS

The PROCESS verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example is PROCESS PO, where a Purchase Order is send to a business partner for processing and the use of the add, change, and delete data processing terms are not relevant in the business context.

RECEIVE

The RECEIVE verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example is RECEIVE PO, where a Purchase Order that has been issued and processed has shipments received against it. The use of the data processing term, change, is not specific enough in the business context.

SHOW

The SHOW verb is used when sending the information about a specific instance of a business document or entity. The SHOW verb may be used to respond to a GET request or it can be used in a publish scenario, where it pushes information to other applications based on a business event.

Although BODs based on this verb do not commonly cause updates to occur, there may be times when the component receiving the SHOW decides to use the information it receives to update. This is entirely the decision of the receiving software component and is not forbidden.

The behavior of the SHOW verb is quite straight forward with one exception. The SHOW response to any GET request needs to read the request carefully to ensure the response is returning the requested Data Types.

SYNC

The SYNC verb is used when the owner of the data is passing or publishing that information or change in information to other software components. This is to be used when the receiver of the SYNC BOD does not own the data. This verb is commonly used when mass changes are necessary or when a publish and subscribe mechanism is used in the integration architecture.

The purposes of this verb include application integrity and ease of data entry for the business user by enabling a single point of input. The BODs that use the SYNC verb also have a Field Identifier that occurs in the BOD. This code is the SYNCIND. The SYNCID is described in Appendix C and contains the following:

SYNCIND

SYNCHRONIZATION INDICATOR

SYNCIND identifies whether the data being transmitted with a SYNC type BOD is to add, change or delete information in the receiving application's database.

VALID VALUES

- A = Add
- C = Change
- D = Delete

This Field Identifier is used in conjunction with all BODs using the SYNC verb to further define what the sender of the BOD wishes to do. The "Add" and "Delete" values are used to specify when the information sent is to be added to the database or deleted.

The “Change” value is used to signify that the data sent is to be replaced with the new data. For those cases when certain Data Types are sent in a SYNC BOD and the Data Type's data does not yet exist, they are to be added to the overall structure.

TRANSFER

The TRANSFER verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example is the transfer of material from one inventory location to another. In this case the add, change, or delete technical terms do not adequately convey the meaning of this business event.

UPDATE

The UPDATE verb is used to describe specific processing in a more fine grained manner beyond add, change or delete processing. An example is the update of inspection information from one business application to another. The event is not adding a document, or changing fields per se, but it is communicating the occurrence of an event as well as the corresponding data that accompanies the event.