ANannlen/afannlen

int32 ANannlen(int32 *ann\_id*)

|  |  |  |
| --- | --- | --- |
| ann\_id | IN: | Annotation identifier returned by ANcreate, ANcreatef, or ANselect |
| Purpose | Returns the length of an annotation. | |
| Return value | Returns the length of the annotation or FAIL (or -1) otherwise. | |
| Description | ANannlen returns the number of characters contained in the annotation specified by the parameter ann\_id. This function is commonly used to determine the size of a buffer to store the annotation upon reading. | |
| FORTRAN | integer function afannlen(ann\_id) | | |
|  | integer ann\_id | | |

ANannlist/afannlist

intn ANannlist(int32 *an\_id*, ann\_type *annot\_type,* uint16 *obj\_tag,* uint16 *obj\_ref,* int32 *\*ann\_list*)

|  |  |  |  |
| --- | --- | --- | --- |
| an\_id | IN: | | AN interface identifier returned by ANstart |
| annot\_type | IN: | | Type of the annotation |
| obj\_tag | IN: | | Tag of the object |
| obj\_ref | IN: | | Reference number of the object |
| ann\_list | OUT: | | Buffer for the annotation identifiers |
| Purpose | | Retrieves the annotation identifiers of an object. | |
| Return value | | Returns number of annotations identifiers found, if successful, or FAIL (or -1) otherwise. | |
| Description | | ANannlist obtains a list of identifiers of the annotations that are of the type specified by the parameter annot\_type and are attached to the object identified by its tag, obj\_tag, and its reference number, obj\_ref. | |
|  | | Since this routine is implemented only to obtain the identifiers of data annotations and not file annotations, the valid values of annot\_type are AN\_DATA\_LABEL (or 0) and AN\_DATA\_DESC (or 1). To obtain file annotation identifiers, an application can use ANfileinfo to determine the number of file labels and descriptions, and then use ANselect to obtain each file annotation identifier. In this case, the application must call ANendaccess to close the annotation identifier when done accessing it. | |
|  | | Sufficient space must be allocated for ann\_list to hold the list of annotation identifiers. This can be done by using ANnumann to obtain the number of annotation identifiers to be retrieved, and then allocating memory for ann\_list using this number. | |
| FORTRAN | | integer function afannlist(an\_id, annot\_type, obj\_tag, obj\_ref, ann\_list) | |
|  | | integer ann\_list(\*) | |
|  | | integer an\_id, obj\_tag, obj\_ref, annot\_type | |

ANatype2tag/afatypetag

uint16 ANatype2tag(ann\_type \**annot\_type*)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| annot\_type | IN: | | Type of the annotation | | |
| Purpose | Returns the annotation tag corresponding to an annotation type. | | | | | |
| Return value | Returns the annotation tag (ann\_tag) if successful, and DFTAG\_NULL (or 0) otherwise. | | | | | |
| Description | ANatype2tag returns the tag that corresponds to the annotation type specified by the parameter annot\_type. | | | | | |
|  | The following table lists the valid values of annot\_type in the left column and the corresponding values for the returned annotation tag on the right. | | | | | |
| Annotation Type | | Annotation Tag |
| AN\_DATA\_LABEL (or 0) | | DFTAG\_DIL (or 104) |
| AN\_DATA\_DESC (or 1) | | DFTAG\_DIA (or 105) |
| AN\_FILE\_LABEL (or 2) | | DFTAG\_FID (or 100) |
| AN\_FILE\_DESC (or 3) | | DFTAG\_FD (or 101) |
| FORTRAN | integer function afatypetag(annot\_type) | | | | | |
|  | integer annot\_type | | | | | |

ANcreate/afcreate

int32 ANcreate(int32 *an\_id,* uint16 *obj\_tag,* uint16 *obj\_ref,* ann\_type *annot\_type*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| obj\_tag | IN: | Tag of the object to be annotated |
| obj\_ref | IN: | Reference number of the object to be annotated |
| annot\_type | IN: | Type of the data annotation |
| Purpose | Creates a data annotation for an object. | |
| Return value | Returns the data annotation identifier (ann\_id) if successful and FAIL (or -1) otherwise. | |
| Description | ANcreate creates a data annotation of type annot\_type for the object specified by its tag, obj\_tag, and its reference number, obj\_ref. The returned data annotation identifier can represent either a data label or a data description. | |
|  | Valid values for annot\_type are AN\_DATA\_LABEL (or 0) or AN\_DATA\_DESC (or 1.) | |
|  | Use ANcreatef to create a file annotation. | |
|  | Currently, the user must write to a newly-created annotation before creating another annotation of the same type. Creating two consecutive annotations of the same type causes the second call to ANcreate to return FAIL (or -1). | |
| FORTRAN | integer function afcreate(an\_id, obj\_tag, obj\_ref, annot\_type) | |
|  | integer an\_id, obj\_tag, obj\_ref, annot\_type | |

ANcreatef/affcreate

int32 ANcreatef(int32 *an\_id,* ann\_type *annot\_type*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| annot\_type | IN: | Type of the file annotation |
| Purpose | Creates a file annotation. | |
| Return value | Returns the file annotation identifier (ann\_id) if successful and FAIL (or -1) otherwise. | |
| Description | ANcreatef creates a file annotation of the type specified by the parameter annot\_type. The file annotation identifier returned can either represent a file label or a file description. | |
|  | Valid values for annot\_type are AN\_FILE\_LABEL (or 2) and AN\_FILE\_DESC (or 3). | |
|  | Use ANcreate to create a data annotation. | |
|  | Currently, the user must write to a newly-created annotation before creating another annotation of the same type. Creating two consecutive annotations of the same type causes the second call to ANcreate to return FAIL (or -1). | |
| FORTRAN | integer function affcreate(an\_id, annot\_type) | |
|  | integer an\_id, annot\_type | |

ANend/afend

int32 ANend(int32 *an\_id*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| Purpose | Terminates access to an AN interface. | |
| Return value | Returns SUCCEED (or 0) if successful and FAIL (or -1) otherwise. | |
| Description | ANend terminates access to the AN interface identified by an\_id, which is previously initialized by a call to ANstart. Note that there must be one call to ANend for each call to ANstart. | |
| FORTRAN | integer function afend(an\_id) | |
|  | integer an\_id | |

ANendaccess/afendaccess

intn ANendaccess(int32 *ann\_id*)

|  |  |  |
| --- | --- | --- |
| ann\_id | IN: | Annotation identifier returned by ANcreate, ANcreatef or ANselect |
| Purpose | Terminates access to an annotation. | |
| Return value | Returns SUCCEED (or 0) if successful and FAIL (or -1) otherwise. | |
| Description | ANendaccess terminates access to the annotation identified by the parameter ann\_id. Note that there must be one call to ANendaccess for every call to ANselect, ANcreate or ANcreatef. | |
| FORTRAN | integer function afendaccess(ann\_id) | |
|  | integer ann\_id | |

ANfileinfo/affileinfo

intn ANfileinfo(int32 *an\_id*, int32 \**n\_file\_labels,* int32 \**n\_file\_descs,* int32 *\*n\_data\_labels,* int32 *\*n\_data\_descs*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| n\_file\_labels | OUT: | Number of file labels |
| n\_file\_descs | OUT: | Number of file descriptions |
| n\_data\_labels | OUT: | Number of data labels |
| n\_data\_descs | OUT: | Number of data descriptions |
| Purpose | Retrieves the number of annotations of each type in a file. | |
| Return value | Returns SUCCEED (or 0) if successful or FAIL (or -1) otherwise. | |
| Description | ANfileinfo retrieves the total number of the four kinds of annotations and stores them in the appropriate parameters. The total number of data labels of all data objects in the file is stored in *n\_data\_labels*. The total number of data descriptions of all data objects in the file is stored in *n\_data\_descs*. The total number of file labels is stored in *n\_file\_labels* and the total number of file descriptions in *n\_file\_descs*. | |
|  | Note that the numbers of data labels and descriptions refer to the total number of data labels and data descriptions in the file, not for a specific object. Use ANnumann to determine these numbers for a specific object. | |
|  | This routine is generally used to find the range of acceptable indices for ANselect calls. | |
| FORTRAN | integer function affileinfo(an\_id, n\_file\_labels, n\_file\_descs, n\_data\_labels, n\_data\_descs) | |
|  | integer an\_id, n\_file\_labels, n\_file\_descs | |
|  | integer n\_data\_labels, n\_data\_descs | |

ANgetdatainfo

intn ANgetdatainfo(int32 *ann\_id*, int32 \**offset*, int32 \**length*)

|  |  |  |
| --- | --- | --- |
| ann\_id | IN: | Annotation identifier returned by ANselect, ANcreate or ANcreatef |
| offset | OUT: | Offset of the annotation's data |
| length | OUT: | Length of the annotation's data |
| Purpose | Retrieves location and size of an annotation. | |
| Return value | Returns SUCCEED (or 0) if successful or FAIL (or -1) otherwise. | |
| Description | ANgetdatainfo retrieves the offset and length of the data that belongs to the annotation specified by ann\_id. This function works for file and object annotations. | |
| FORTRAN | currently unavailable | |
|  |  | |

ANget\_tagref/afgettagref

int32 ANget\_tagref(int32 *an\_id*, int32 *index*, ann\_type *annot\_type*, uint16 \**ann\_tag*, uint16 \**ann\_ref*)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| an\_id | IN: | | AN interface identifier returned by ANstart | | |
| index | IN: | | Index of the annotation | | |
| annot\_type | IN: | | Type of the annotation | | |
| ann\_tag | OUT: | | Tag of the annotation | | |
| ann\_ref | OUT: | | Reference number of the annotation | | |
| Purpose | Retrieves the tag/reference number pair of an annotation given its index and type. | | | | |
| Return value | Returns SUCCEED (or 0) if successful or FAIL (or -1) otherwise. | | | | |
| Description | ANget\_tagref retrieves the tag and reference number of the annotation identified by its index, the parameter index, and by its annotation type, the parameter annot\_type. The tag is stored in the parameter ann\_tag and the reference number is stored in the parameter ann\_ref. | | | | |
|  | The parameter index is a nonnegative integer and is less than the total number of annotations of type annot\_type in the file. Use ANfileinfo to obtain the total number of annotations of each type in the file. | | | | |
|  | The following table lists the valid values of the parameter annot\_type in the left column, and the corresponding values of the parameter ann\_tag in the right column. | | | | |
| Annotation Type | | Annotation Tag |
| AN\_DATA\_LABEL (or 0) | | DFTAG\_DIL (or 104) |
| AN\_DATA\_DESC (or 1) | | DFTAG\_DIA (or 105) |
| AN\_FILE\_LABEL (or 2) | | DFTAG\_FID (or 100) |
| AN\_FILE\_DESC (or 3) | | DFTAG\_FD (or 101) |
| FORTRAN | integer function afgettagref(an\_id, index, annot\_type, ann\_tag, ann\_ref) | | | | |
|  | integer an\_id, index, annot\_type | | | | |
|  | integer ann\_tag, ann\_ref | | | | |

ANid2tagref/afidtagref

int32 ANid2tagref(int32 *ann\_id*, uint16 \**ann\_tag,* uint16 \**ann\_ref*)

|  |  |  |
| --- | --- | --- |
| ann\_id | IN: | Annotation identifier returned by ANselect, ANcreate or ANcreatef |
| ann\_tag | OUT: | Tag of the annotation |
| ann\_ref | OUT: | Reference number of the annotation |
| Purpose | Retrieves the tag/reference number pair of an annotation given its identifier. | |
| Return value | Returns SUCCEED (or 0) if successful or FAIL (or -1) otherwise. | |
| Description | ANid2tagref retrieves the tag/reference number pair of the annotation identified by the parameter ann\_id. The tag is stored in the parameter ann\_tag and the reference number is stored in the parameter ann\_ref. | |
|  | Possible values returned in ann\_tag are DFTAG\_DIL (or 104) for a data label, DFTAG\_DIA (or 105) for a data description, DFTAG\_FID (or 100) for a file label and DFTAG\_FD (or 101) for a file description. | |
| FORTRAN | integer function afidtagref(ann\_id, ann\_tag, ann\_ref) | |
|  | integer ann\_id, ann\_tag, ann\_ref | |

ANnumann/afnumann

intn ANnumann(int32 *an\_id*, ann\_type *annot\_type,* uint16 *obj\_tag,* uint16 *obj\_ref*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| annot\_type | IN: | Type of the annotation |
| obj\_tag | IN: | Tag of the object |
| obj\_ref | IN: | Reference number of the object |
| Purpose | Returns the number of annotations of a given type attached to an object. | |
| Return value | Returns the number of annotations or FAIL (or -1) otherwise. | |
| Description | ANnumann returns the total number of annotations that are of type annot\_type and that are attached to the object identified by its tag, obj\_tag, and its reference number, obj\_ref. | |
|  | Since this routine is implemented only to obtain the total number of data annotations and not file annotations, the valid values of annot\_type are AN\_DATA\_LABEL (or 0) and AN\_DATA\_DESC (or 1). To obtain the total number of file annotations or all data annotations, use ANfileinfo. | |
| FORTRAN | integer function afnumann(an\_id, annot\_type, obj\_tag, obj\_ref) | |
|  | integer an\_id, obj\_tag, obj\_ref, annot\_type | |

ANreadann/afreadann

int32 ANreadann(int32 *ann\_id*, char\* *ann\_buf*, int32 *ann\_length*)

|  |  |  |
| --- | --- | --- |
| ann\_id | IN: | Annotation identifier returned by ANcreate, ANcreatef or ANselect |
| ann\_buf | OUT: | Buffer for the annotation |
| ann\_length | IN: | Length of the buffer *ann\_buf* |
| Purpose | Reads an annotation. | |
| Return value | Returns SUCCEED (or 0) if successful and FAIL (or -1) otherwise. | |
| Description | ANreadann reads the annotation identified by the parameter ann\_id and stores the annotation in the parameter ann\_buf. | |
|  | The parameter ann\_length specifies the size of the buffer ann\_buf. If the length of the file or data label to be read is greater than or equal to ann\_length, the label will be truncated to ann\_length - 1 characters. If the length of the file or data description is greater than ann\_length, the description will be truncated to ann\_length characters. The HDF library adds a NULL character to the retrieved label but not to the retrieved description. The user must add a NULL character to the retrieved description if the C library string functions are to operate on this description. | |
| FORTRAN | integer function afreadann(ann\_id, ann\_buf, ann\_length) | |
|  | integer ann\_id, ann\_length | |
|  | character\*(\*) ann\_buf | |

ANselect/afselect

int32 ANselect(int32 *an\_id*, int32 *index*, ann\_type *annot\_type*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| index | IN: | Location of the annotation in the file |
| annot\_type | IN: | Type of the annotation |
| Purpose | Obtains an existing annotation. | |
| Return value | Returns the annotation identifier (ann\_id) if successful or FAIL (or -1) otherwise. | |
| Description | ANselect obtains the identifier of the annotation specified by its index, index, and by its annotation type, annot\_type. | |
|  | The parameter index is a nonnegative integer and is less than the total number of annotations of type annot\_type in the file. Use ANfileinfo to obtain the total number of annotations of each type in the file. | |
|  | Valid values of annot\_type are AN\_DATA\_LABEL (or 0), AN\_DATA\_DESC (or 1), AN\_FILE\_LABEL (or 2), and AN\_FILE\_DESC (or 3). | |
| FORTRAN | integer function afselect(an\_id, index, annot\_type) | |
|  | integer an\_id, index | |
|  | integer annot\_type | |

ANstart/afstart

int32 ANstart(int32 *file\_id*)

|  |  |  |
| --- | --- | --- |
| file\_id | IN: | File identifier returned by Hopen |
| Purpose | Initializes the AN interface. | |
| Return value | Returns the AN interface identifier (an\_id) if successful and FAIL (or -1) otherwise. | |
| Description | ANstart initializes the AN interface for the file identified by the parameter file\_id. A call to ANstart is required before any AN functions can be invoked. ANstart is used with the ANend function to define the extent of AN interface session. A call to ANend is required for each call to ANstart. | |
| FORTRAN | integer function afstart(file\_id) | |
|  | integer file\_id | |

ANtag2atype/aftagatype

ann\_type ANtag2atype(uint16 *ann\_tag*)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ann\_tag | IN: | | Tag of the annotation | | |
| Purpose | Returns the annotation type corresponding to an annotation tag. | | | | |
| Return value | Returns the annotation type if successful or AN\_UNDEF (or -1) otherwise. | | | | |
| Description | ANtag2atype returns the annotation type that corresponds to the annotation tag specified by the parameter ann\_tag. | | | | |
|  | The following table lists the valid values of ann\_tag in the left column and the corresponding values of the returned annotation type in the right column. | | | | |
| Annotation Tag | | Annotation Type |
| DFTAG\_DIL (or 104) | | AN\_DATA\_LABEL (or 0) |
| DFTAG\_DIA (or 105) | | AN\_DATA\_DESC (or 1) |
| DFTAG\_FID (or 100) | | AN\_FILE\_LABEL (or 2) |
| DFTAG\_FD (or 101) | | AN\_FILE\_DESC (or 3) |
| FORTRAN | integer function aftagatype(ann\_tag) | | | | |
|  | integer ann\_tag | | | | |

ANtagref2id/aftagrefid

int32 ANtagref2id(int32 *an\_id*, uint16 *ann\_tag*, uint16 *ann\_ref*)

|  |  |  |
| --- | --- | --- |
| an\_id | IN: | AN interface identifier returned by ANstart |
| ann\_tag | IN: | Tag of the annotation |
| ann\_ref | IN: | Reference number of the annotation |

|  |  |
| --- | --- |
| Purpose | Returns the identifier of an annotation given its tag/reference number pair. |
| Return value | Returns the annotation identifier (ann\_id) if successful and FAIL (or -1) otherwise. |
| Description | ANtagref2id returns the identifier of the annotation specified by its tag, ann\_tag, and its reference number, ann\_ref. |
|  | Valid values of ann\_tag are DFTAG\_DIL (or 104) for a data label, DFTAG\_DIA (or 105) for a data description, DFTAG\_FID (or 100) for a file label, and DFTAG\_FD (or 101) for a file description. |

|  |  |
| --- | --- |
| FORTRAN | integer function aftagrefid(an\_id, ann\_tag, ann\_ref) |
|  | integer an\_id, ann\_tag, ann\_ref |

ANwriteann/afwriteann

int32 ANwriteann(int32 *ann\_id*, char\* *ann*, int32 *ann\_length*)

|  |  |  |
| --- | --- | --- |
| ann\_id | IN: | Annotation identifier returned by ANcreate, ANcreatef, or ANselect |
| ann | IN: | Text to be written to the annotation |
| ann\_length | IN: | Length of the annotation text |
| Purpose | Writes an annotation. | |
| Return value | Returns SUCCEED (or 0) if successful and FAIL (or -1) otherwise. | |
| Description | ANwriteann writes the annotation text provided in the parameter ann to the annotation specified by the parameter ann\_id. The parameter ann\_length specifies the number of characters in the annotation text. | |
|  | If the annotation has already been written with text, ANwriteann will overwrite the current text. | |
| FORTRAN | integer function afwriteann(ann\_id, ann, ann\_length) | |
|  | integer ann\_id, ann\_length | |
|  | character\*(\*) ann | |