H5D_ITERATE

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H5D_ITERATE

Iterates over all selected elements in a dataspace

Procedure:

H5D_ITERATE(buf, type_id, space_id, operator, operator_data)

Signature:

```
herr_t H5Diterate( void *buf, hid_t type_id, hid_t space_id, H5D_operator_t operator, void *operator_data )
```

Parameters:

void *`buf`	IN/OUT: Pointer to the buffer in memory containing the elements to iterate over
hid_t `type_id`	IN: Datatype identifier for the elements stored in `buf`
hid_t `space_id`	IN: Dataspace identifier for `buf`
H5D_operator_t `operator`	IN: Function pointer to the routine to be called for each element in `buf` iterated over
void *`operator_data`	IN/OUT: Pointer to any user-defined data associated with the operation

Description:

H5D_ITERATE iterates over all the data elements in the memory buffer `buf`, executing the callback function `operator` once for each such data element.

The protoype of the callback function `operator` is as follows (as defined in the source code file `H5Lpublic.h`):

```
herr_t (*H5D_operator_t)(void elem, hid_t type_id, unsigned ndim,
                         const hsize_t *point, void *operator_data)
```

The parameters of this callback function have the following values or meanings:

void *elem	IN/OUT: Pointer to the memory buffer containing the current data element
hid_t type_id	IN: Datatype identifier for the elements stored in `elem`
unsigned ndim	IN: Number of dimensions for the `point` array
const hsize_t *point	IN: Array containing the location of the element within the original dataspace
void *operator_data	IN/OUT: Pointer to any user-defined data associated with the operation

The possible return values from the callback function, and the effect ofeach,are as follows:

- Zero causes the iterator to continue, returning zero when all data elements have been processed.
- A positive value causes the iterator to immediately return that positive value, indicating short-circuit success.
- A negative value causes the iterator to immediately return that value, indicating failure.

The H5D_ITERATE `operator_data` parameter is a user-defined pointer to the data required to process dataset elements in the course of the iteration. If `operator` needs to pass data back to the application, such data can be returned in this same buffer. This pointer is passed back to each step of the iteration in the `operator` callback function's `operator_data` parameter.

Unlike other HDF5 iterators, this iteration operation cannot be restarted at the point of exit; a second H5D_ITERATE call will always restart at the beginning.

Returns:

Returns the return value of the last operator if it was non-zero, or zero if all elements have been processed. Otherwise returns a negative value.

Example:

Coming Soon!

History:

Release	Change
1.6.4	The following changes occured in the `H5D_operator_t` function in this release: `ndim` parameter type was changed to *unsigned* `point` parameter type was changed to *const hsize_t*

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