GammaLib - Feature #37

Support removing and updating of an existing HDU

02/20/2012 05:42 PM - Knödlseder Jürgen

Status:	In Progress	**Start date:**	02/20/2012
Priority:	Urgent	**Due date:**	
Assigned To:	Knödlseder Jürgen	**% Done:**	50%
Category:		**Estimated time:**	0.00 hour
Target version:			

Description

The actual code does not support removing and updating of an existing HDU. Code should be added to implement this functionality.

History

#1 - 02/20/2012 06:08 PM - Knödlseder Jürgen

- Priority changed from Normal to Low

#2 - 12/04/2013 02:47 PM - Knödlseder Jürgen

- Assigned To set to Knödlseder Jürgen

- Priority changed from Low to Urgent

I stumbled over this again while implementing the GFits class as a container class. The container class now allows replacing for example an image by a table, the actual code does however not change the FITS file accordingly.

For example, replacing an image by a table leads to a status code of 235 when the number of columns is determined, saying that the HDU is not a table.

Some code is needed, probably at the level of GFits::save() to handle this. The int fits_delete_hdu / ffdhdu (fitsfile *fptr, > int *hdutype, int *status) function can be used to delete a HDU form a FITS file, moving all other headers forward. This means that a FITS file gets "scrambled" when selected HDUs are deleted.

Two approaches exist:

1. If any of the HDU may have changed, delete the file and save it from scratch. This is savest, but time and resource consuming
2. Remove all HDUs that may have changed, re-attribute extension numbers, and save new HDUs at the end. This removes control from the client and may lead to a unclear structure of the FITS file

The first approach is thus favored. If any HDU has changed, delete the file and write it from scratch.

#3 - 12/06/2013 12:58 AM - Knödlseder Jürgen

- Status changed from New to In Progress

- % Done changed from 0 to 50

The problem has been solved at least for HDU changes between images and tables.

In fact, cfitsio provides an insert function that allows insertion of an extension in a specific slot. By deleting a HDU in a given slot and inserting another HDU into this slot, the FITS file can be made compliant with the GFits structure and the order of the extension can be kept. This has been implemented and tested.

What is now missing (or at least should be tested) is the insertion or removal of columns.

In addition, it should be tested whether **replacing** one table against another works (there is a good chance that this is not operational).