



TOOLKIT / HDF-EOS Status and Development

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Aura DSWG meeting

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TOOLKIT / HDF-EOS Support



- Maintenance support is funded on EMD Evolution through May 2008
- **Current staff**
 - One full-time developer for maintaining:
 - SDP/MTD Toolkit
 - HDF-EOS2 & 5
 - HDF-EOS plug-in for HDFView
 - HDF-EOS2 to GeoTIFF Converter (HEG)
 - Other Toolkit/HDF-EOS related software
 - Toolkit/HDF-EOS/HEG helpdesk
 - One half-time developer for HEG maintenance



ECS Support of HDF-EOS



- Both **HDF4** and **HDF5** based flavors of HDF-EOS are part of ECS baseline.
- OS's: **Solaris (9, 10)**, **Irix6.5**, **Windows XP**, **Linux** (including 64-bit Opteron and Itanium), **Mac OS X** (Dropped support for Solaris 8, HP, HP11, Dec, IBM for next release)
- adding **Mac Intel** support for 2007 release and full **Cygwin** support for 2008
- Compilers: **Fortran 77/90 & g77/pgf90** , **C**, **C++**, **gcc**, **g++**



Software Releases



Toolkit/HDF-EOS:

- **Last release – March 2006**
 - TOOLKIT 5.2.14, HDF-EOS 2.14, HDF-EOS5.1.10
 - with HDF4.2r1, HDF5-1.6.5-post5, Szip2.0
- **Next release – November 2007**
 - TOOLKIT 5.2.15, HDF-EOS 2.15, HDF-EOS5.1.11
 - with new releases of HDF4, HDF5, and SZIP

HDF-EOS Plug-in for HDFView:

- **Last release – May 2006**
 - Version 2.3
- **Next release – Dec. 2007**
 - After HDFView2.4 release by The HDF Group



Downloadable Applications



- **HE5View*** (HDF5 - based browser)
- **EOSView*** (HDF4 - based browser)
- **HDFView**, Java-based browser (HDF4, HDF5, HDF-EOS 2 and 5 access)
- **heconvert** (converts HDF4 - based Grid/Point/Swath structures to HDF-EOS 5 equivalents)
 - Compliments HDF4 -> HDF5 conversion tool
 - Not tested on all products
- **HEG** (HDF-EOS2 to GeoTIFF converter, subsetting, reprojection, stitching, sub-sampling, etc.)

* Dropped support for OS updates on July 2006



Major Development/Fixes Last Release



HDF-EOS5:

- Added a routine to return **list of aliases** for a field
- Used HDF5's H5T_C_S1 datatype for string type
- Added **Fortran wrapper** for SWwritedatameta() routine
- Replaced symbol "H5E_NONE_MAJOR" with other symbols for better description of errors
- Ported to **Solaris 9** and **Solaris 10**
- Fixed **POINT object** for:
 - linkage between levels
 - updating levels
 - writing Forward and Backward Linkage data
 - char field inquiry
- Fixed **subsetting problem in HDF-EOS5 Grid**
(correction to conversion of DMS degree to Decimal degree).
- Set **LD_LIBRARY_PATH** for **SZIP/HDF5** shared libraries in installation and environment setting scripts



Major Development/Fixes (cont.) Last Release



TOOLKIT/HDF-EOS2:

- Ported to **Solaris 9** and **Solaris 10**
- Gdapi.c changes for adding **more significant digits** after the decimal point to **projection parameters** if needed.
- **chkeph utility** fixes for reading binary ephemeris files (files with different **endiannes** than the machine)
- **SGI 7.4.2** compiler support
- **orbsim fixes for Linux** to create files similar to those in UNIX platforms (Random number generation fixes)



Major Development/Fixes (cont.)

Next Release: November 2007



- Default installation of **SZIP** decoder
- Choice for installing **SZIP** encoder
- Choice for **configuring HDF4** with **SZIP**
- Choice for installing Toolkit/HDF-EOS in **32** or **64-bit modes** in **64-bit Linux** platforms
- Support for new releases of HDF4/HDF5/SZIP (HDF4.2r2, HDF5-1.6.6, SZIP-2.1)
- Installation fix for a problem caused by **limits.h** in some Linux platforms
- **Auto Configuration** capability (like HDF) for both **HDF-EOS2** and **HDF-EOS5**
- Support for **Mac Intel** platform. Drop of support for Sun5.8, Dec, HP, HP 11, IBM
- Fixes for **Lat/Lon to pixel** conversions in DEM tools for Linux to get results similar to those in Unix platforms



Major Development/Fixes (cont.)



HDF-EOS Plug-in for HDFView

Current Support: **SUN, SGI, LINUX, WINDOWS, and MAC platforms**

Last Release: Version 2.3

- Display Point Objects
- Display pixel's lat/lon for swath and grid images
- Scientific notation in Table data

Next Release: Version 2.4

- Automatic installation of plug-in into HDFView running self-extracting archives.
- Display image for selected pixels in the viewed tables
- Display Lat/Lon for a selected pixel in the data field tables
- Mac OSX fixes for one-button mice
- Better display of Plug-in User's Guide
- New icons for activating Lat/Lon display for Swath & Grid



HDF-EOS/Toolkit



Future Plans:

- Auto Configuration for TOOLKIT
- Support for Cygwin platform
- Support for HDF5-1.8
- Performance improvement, if possible, for reading HDF format ephemeris/attitude files in Toolkit
- Performance improvement in HDF-EOS5 by redesigning some functions
- More functionalities in HDF-EOS Plug-in for HDFView:
 - Format conversion: **HDF-EOS2 -> HDF-EOS5**
 - Improved Help Window
 - Ability to modify input HDF-EOS2 granules.
 - Ability to cut/paste objects, modify/delete attributes.
 - Ability to create new grids/swaths



Availability



- Access to libraries, applications, Documentation:

TOOLKIT:

<http://newsroom.gsfc.nasa.gov/sdptoolkit/toolkit.html>

HDFView:

[http://newsroom.gsfc.nasa.gov/sdptoolkit/HDFView/
HDFView_hdfeos_plugin.html](http://newsroom.gsfc.nasa.gov/sdptoolkit/HDFView/HDFView_hdfeos_plugin.html)

HEG:

<http://newsroom.gsfc.nasa.gov/sdptoolkit/HEG/HEGHome.html>

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SDP Toolkit



- **Science Data Production (SDP) Toolkit** is a collection of tools used by
 - **Science software developers** who produce code to process instrument data.
 - **HDF-EOS users** who need to
 - Access metadata in HDF-EOS files
 - Perform Time/Date conversion
 - Access Digital Elevation Model Data
 - Access Ancillary Data, such as Digital Chart of the World database (DCW), Olson World Ecosystem files, DEM data files, etc.



SDP Toolkit (cont.)



- Tools provided in Toolkit:
 - AA (Ancillary Data Access)
 - CBP (CELESTIAL Body Position)
 - CSC (Coordinate System Conversion)
 - CUC (Constant and Unit Conversions)
 - DEM (Digital Elevation Model Access)
 - EPH (Ephemeris Data Access)
 - GCT (Geo Coordinate Transformation)
 - IO (Input Output (File I/O))
 - MEM (Memory Management)
 - MET (Metadata Access)
 - PC (Process Control)
 - SMF (Status Message File (Error/Status))
 - TD (Time and Date Conversion)