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1 General

1.1 New functions

In comparison to EUKLID Design 2006 there are following new functions available:

EUKLID Design Classic:

New AQL-Functions

- fcopy (copy a file)
- file_basename (extract the basename from a filename.)

- file_dirname (extract the directoryname from a filename.)
- file_extend (replace special characters (#,+,~) in front of filename)
- file_get_extension (get the file extension (suffix) of the specified filename)
- file_is_unix_file (check if a file was stored in UNIX- or DOS-format.)
- file_move (move a file from a to b, or copies the file if moving is not possible)
- file_normalize (expand a filename, also starting with './' (in addition to 'file_extend'))
- file_read (store the contents of a file in a string)
- file_remove_extension (remove file extension (suffix) from the specified filename)
- file_translate_slash (replace (back)slashes according to conventions of current operating system.)
- file_unix_to_win (convert a UNIX textfile to a Windows textfile)
- file_win_to_unix (convert a Windows textfile to a UNIX textfile)
- remove (remove a file from the disc)
- mkdir (create a directory)
- pos (position of the first occurrence of the searchstring in the targetstring)
- rpos (pPosition of the last occurrence of the searchstring in the targetstring)
- rmdir (remove a directory)
- sleep (let the program sleep for some seconds)
- load_library (load a Windows dynamic link library (dll) into memory) (Windows only)
- dllcall (call an object code function located in a DLL) (Windows only)
- free_library (reduce the reference count to the library with the handle) (Windows only)

EUKLID Design and EUKLID Design Classic:

New AQL-Functions

- open_url (open HTML-file in your standard webbrowser) (Windows only)
- AQL-Functions to handle XML files:
- xml_add_attribute (add an attribute to a XML-element)
- xml_add_element (add an element to a XML-file)
- xml_close (close XML-file)
- xml_delete_attribute (delete an attribute)
- xml_delete_element (delete an element)
- xml_new (create a new XML-file)
- xml_open (open a XML-file or create a new one)
- xml_print (formatted output in the background window)
- xml_read_attribute (read an Attribute)
- xml_save (Save the XML-file)

Extended AQL-Functions

- date (optional parameter to control date output)

additional corrections and improvements

- Problems with online-help solved (new AQL-function open_url())
(the browser config should be show to DEFAULT).
- Improved handling of filenames with blanks.
(but there is still no official support of blanks in filenames)
- Corrections in configfile handling for output functions (IGES, DXF, DWG)
- Problems in dxf-output Probleme in combination with textframes solved.
- ...

In comparison to EUKLID Design 2005 there are following new functions available:

- New action **output_pdfscaled** (output PDF fileformat using Ghostscript).
- Generating measure objects in case of import DXF/DWG-files is now the default value.
- Switch an active layer to "not selectable" and/or "invisible" will be denied.
- Checking the type of columns in subtables.
- Revised file dialogs, enhanced directory navigation, enhanced device handling (Windows)
- Quick access to special directories (one level up, working directory, own files, standard library, installdirectory, new directory)



- Changed and better mouse click reaction in file dialogs.
- Revised electric_manual (HTML-version).
- AQL - extended **date()** function (**date(1)** returns date- and timegroup).
- AQL - extended **dir()** funktion (optional 4. parameter switching from case-sensitive to case-insensitive).
- AQL - **dir()** function used in Windows-OS uses case-insensitive as default.
- New installation for Windows-OS.
- DXF/DWG in- and export from/to actual Autocad versions available for EUKLID Design Classic to.
- DXF/DWG export: weld symbols (font "Weld") will be desolved to grafic.
- Some other bugs fixed

In comparison to EUKLID Design 2004.1 there are following new funtions available:

- New user definable second toolbar (Config-file of user is no longer compatible to older versions)
- New attribut ruler2_on in AQL.
- Changes for layername and tooltip in the status window.
- Star-parameter replaced by group_rec in actions:
 - redefine_cutborder
 - redefine_cutall
 - model_outofselsetfor more convenient selection of objects.
- All languages in editor of action **text_textblock** now supported.
- Replace tabs by blanks in editor of action text_textblock now supported.
- Bug fixed for DWG-output with attribut "TRAN_VIEW"
- Bug fixed for positioning of symbol balloons with reference to another symbol balloon.
- Draft routine (sketching mode) for positioning of symbol balloons with reference to another symbol balloon.
- **classic**: Bug fixed for saving files on a mapped network drive.
- Bug fixed when writing configuration file "dwg_out.iga" in case of DXF output. Entries will be switched from "DWG_" into "TRAN_" automatically. For manually (without configuration editor) created config files it is recommended to change the keywords accordingly.
- New datatranslator #/dwgconv.exe for exchange of DXF/DWG V2004 data format. For activation you have to switch the item "TRAN_PROG" in the DXF/DWG config accordingly.

- Config-Editor for DWF/DWG-Data Exchange enhanced by item "TRAN_PROG" for translation program.
- Bug fixed when reading empty lines in DXF/DWG config file
- Adaptations for Exceed V10.0
(If used Exceed V10.0 there are some additional updates required:
exceed_10006, hclxdmcp_10001 and hclxport_10001)
- Some other bugs fixed

In comparison to EUKLID Design 2004 there are following new functions available:

- Enlargement of enumeration "rawsympb".
- Take Z-value from other objects in "*inrect_editprop_2001*".
- New UDA's "*group_createstar*", "*group_createform*", "*group_copyform*" and "*group_copymirrorform*". (changes in menu)
- Changes for new datatranslator. (reading of DXF/DWG V2004).
- Selection parameter of actions "*copy_paste_copy*", "*multi_duplicate*" and "*multi_duplicatemirror*" changed for more convenient selection of objects.
- Set direct dependency of attributes in action *symbol_balcopy*.
- Now correct support of object spline in "*group_detail*".
- Changes for trimming. Especially trimming of an ellips.
- Now view objects of active model no longer saved in config file.
- If model saved double and no longer used views removed (makes models smaller).
- If model added, views of added model no longer exists.
- Now name of a result of an UDA can be changed in execute function if attribute "action_force_name_by_action" is set.
- Some other bugs fixed

1.2 Note

New models with the new features

- new rawsymbols
- new actions group_createstar and group_createform

can't be load in older versions.

When using version 2005 parallel to older ones, it is necessary to save the old user-configuration (~\design_config) and starting EUKLID Design with the parameter "-config_dir_user". The option for this parameter is the directory where the directory "design_config" (user-configuration) is to be found
e.g.: "d2.exe -config_dir_user D:\users\miller\config_2004"

1.3 Retification

EUKLID Design SolidJoin and EUKLID Documentation will be continued. The modules ("d23.exe" inclusive 3D-Extensions) are still included.

1.4 Licensing

The licensing is performed with EUKLID-Software licensing software FLEXlm.

Division of functionality into licensed packages:

EUKLID Design is delivered as a complete unit, but is divided into licensed functional packages.

The following list shows the functional packages and their respective functionality:

<i>Product</i>	<i>Functionality</i>
EUKLID DESIGN Basis	2D Modeling
Engineering Modul	Development of AQL programs
EULID Design Solidjoin	3D-Modelling, reading Parasolid files, datatransfer with SolidWorks
EUKLID Documentation	3D-Modelling, reading Parasolid files, datatransfer with SolidWorks
EUKLID PARASOLID Viewer	Loading and storing of Parasolid files with EUKLID
DWG/DXF	Reading and storing of AutoCAD files (> R12)

Windows-NT:

You can use FLEXlm only if TCP/IP is available. If you encounter problems during the installation of the license software concerning a host "g" this may be caused by a non-available TCP/IP protocol. Please refer to the installation notes to install TCP/IP ("Checking the installation prerequisites").

Development of AQL programs:

An AQL development license is needed to develop AQL programs; i.e. if you want to run decrypted AQL programs in ASCII format (development format), you need a AQL development license.

In addition, if you have an AQL development license, you can encrypt your programs into a binary format and ship them to other users. You don't need a license for running encrypted AQL programs.

A new AQL function is available in order to perform this encrypting:

encrypt (<Source file>, <Destination file>, <Password1>, <Password2>)

Source file:	AQL program in ASCII format
Destination file:	AQL program encrypted in binary format
<i>Password1</i> :	Key word; e.g. company name, readable in destination file
<i>Password2</i> :	Key word; not readable in destination file

You can use decrypted AQL includes furthermore so that the configurability of encrypted AQL programs is ensured.

1.5 Documentation

The printed documentation is only available online in PDF (Adobe) format.

For a description of a single action please refer to the Online help. It will be updated as necessary and contains the description of new actions. It is available in HTML or Frame format. It is possible to configure your favorite browser with a separate action (in the menu "Options"). We recommend to use Netscape Navigator in Version 4 or newer.

2 Technical Notes

2.1 Resource requirements

Main Memory:

We recommend a minimum Equipment of 128MB free RAM (for 2D application), and 256MB free RAM for SolidJoin.

Swap Memory:

Set minimal to a factor 2-3 of RAM.

Please note that the standard configuration is often not sufficient for our purposes!

Kernel Configuration of HP UX Platforms:

maxdsize	set to a min value of 128MB. It has to be bigger than the total sum of RAM usage of all running processes.
maxssize	set to 64MB.

Graphics:

Recommended for regular use:

- 19" monitor with 72 Hz screen refresh rate
- 1280 x 1024 resolution
- 8-bit color graphics
- high X-Window performance

Limitations for low end graphic systems
(recommended only for occasional or special use) :

- black/white or grey scale:
 - poor or no distinction between line weights and layers on screen.
- < 8-bit color:
 - Operation either only black/white or colors of other active processes are influenced possibly
- Less than 1280 x 1024 resolution:
 - Icons cannot be displayed completely on screen (only via scrolling)
 - Remaining graphic area smaller.
- Poor X-Window performance
 - Display functions can become a 'bottleneck' to overall performance.

High-end graphic systems / 3-D graphics:

- more than 8-bit color
 - additional available colors are not used (constant 64 colors available).
 - Usage worthwhile when programs that occupy multiple color indices are run concurrently
- Z-Buffer
 - worthwhile when coupled with 3D applications
- Special 3-D graphic systems
 - sometimes slow X-Window performance
 - only worthwhile if you run mostly 3-D applications

By using SolidJoin only OpenGL graphic boards should be used.

2.2 X-Terminal operation

X-Fonts:

The standard installation does not provide X-Terminal operation, but project-specific support for this can be obtained from your service partner. Problems may occur especially with the product-specific fonts for the X-Server.

These fonts are located in the directory `'#/d23bs/xfonts'`. This directory must be accessible by the X-Terminal (X-Server), i.e. the X-Terminal must have permission (depending upon protocol) to access this directory. In order to determine this EUKLID Design will test whether the environment variable

`Design_XFontDir`

exists. The path defined with this variable will be used to locate the X-Fonts. So you may copy the fonts from the directory `'#/d23bs/xfonts'` into any directory (or to set up hard links) and set the variable correspondingly (specifying the complete path name). If you want to work with EUKLID Design Classic you should use the directory `'#/v3x/xfonts'`.

If the environment variable does not exist standard fonts will be used.

The command `"/usr/bin/X11/xset fp default"` resets the search path for X-Fonts to the standard value and `"/usr/bin/X11/xset q"` queries the current setting.

Using Windows NT you have to add the X-Fonts to the X-Server. Please refer to the installation notes ("Configuring your EUKLID Design installation")

Integration into the window manager/X server:

Click positions are always evaluated as events, regardless whether the respective process window is active or inactive. To avoid that mouse clicks for window activation initiate EUKLID Design functions we recommended to configure the window manager in a manner that the process window will be set active automatically as soon as the mouse cursor is

located within the window.

To do so, you may change or add the following settings in the Motif Window Manager (MWM) (please refer to the respective documentation for other window managers):

set Resource "keyboardFocusPolicy" to "pointer"

via the entry "mwm*keyboardFocusPolicy : pointer"

- in the file /usr/lib/X11/app-defaults/<name of window managers>
- or in the ResourceDataBase of the Xserver (see command 'xrdb')
- or in a user-specific \$HOME/.Xdefaults

In addition, we recommend to activate the 'Backing Store' mechanism of the X-Server (if configurable) so that the slow redraw of large models is replaced by the quicker 'Backing Store'.

3 Working with EUKLID Design

3.1 Start procedure

The start procedure 'design' for stand-alone use of EUKLID Design is placed into the directory

\$KONSYS_HOME/bin

during the installation of KONSYS. In this file you may modify or add some start options.

The symbolic path name '#' then changes to
\$KONSYS_HOME/euklid_design/xxxx

After successful installation, EUKLID Design may be started stand-alone with 'design xxxx'. SolidJoin started with 'design xxxx -solidjoin'.

Please notify that models saved with 'SolidJoin' or 'EUKLID Documentation' cannot be loaded with 'EUKLID Design 2D' anymore.

On Windows NT/2000/XP you will get an entry in the task menu Start->Euklid Design. You can start EUKLID Design using this entry.

Depending on the X-server you will need different DLLs. DLLs are located in the directory #\dll. Please copy the Dlls the X-Server cannot find at startup to your 'system32' directory of your Windows NT/2000/XP installation. Please remember that any DLL should exist only once on your system !!! This is important for all Dlls being shipped with Hummingbird eXceed. A multiple installed Dll can cause errors like "Cannot connect stream". For additional hints please refer to the installation notes ("Trouble-shooting").

3.2 Heterogenous (network-wide) data concept

The file and data concept allows working in heterogenous networks. Models can be loaded, processed and stored without knowledge of their origin, on any supported HW platform.

3.3 Hints for using the UDO-/UDA technique

In EUKLID Design you can create 'internal UDx'. If you will save models with instanced UDx inside you have to save the UDx too.

Examples:

- A) In a EUKLID Design session two models 'mod1' and 'mod2' will be created simultaneously. An internal UDO 'u1' is defined in 'mod1'. This UDO will be instanced in 'mod2'.
Afterwards both models will be saved separately without saving the UDO definition 'u1' external, and the sessions will be finished.
The model 'mod2' cannot be loaded in a new session because the definition of 'u1' cannot be found.
Solution: Load model 'mod1' separately and, in addition, save the UDO definition 'u1', i.e. save it external. 'mod2' can be loaded again.
- B) In the current model an internal UDO definition 'u1' will be created and inserted into a menu.
Afterwards the configuration will be saved in order to save the modified menu.
The session will be finished without saving the UDO definition 'u1' externally. If you will start again EUKLID Design the respective menu can't be created any more.
Solution: Remove the definition 'u1' from the menu and save the configuration again.

Hint on saving a model: all selectable but deleted objects (like point, line, circle, ellips, ...) will not be saved even if they have a name and/or attributes. All non-selectable but deleted objects (like length, angle, string, number, ...) will be written on the file if they have a name or attributes. If you want to contain deleted objects in an UDO-definition you can put them together into a group. In this way the deleted objects will have a reference to another object and will be saved.

3.4 Data transfer with EUKLID

Spline segments transfered via T32 interface sometimes will be displayed incorrectly. These problems will occur in particular in isometric views. In order to get a correct representation in EUKLID Design manual supplements are necessary.

Please note: a significant raising of the transfer rate is possible if you don't transfer hidden lines which are not displayed (see dialog box).

3.5 Converting Draft data

Information to convert DRAFT files on UNIX platforms may be read in the file
#/doc/release_notes_E_Draft.

3.6 Data exchange with IGES, DWG and DXF

The Data Translator contains the IGES, DWG and DXF components. For more information please refer to the file `#/doc/release_notes_E_data_trans`.

3.7 Geometry transfer with I-DEAS Master Modeller

Using datatransfer with I-DEAS Master Modeler there are some hints in the file `#/doc/release_notes_E_Ideas`. If there is any need to use IPlot, some descriptions may be found there too.

3.8 Plotting

Operating instructions are contained in the user manual "Exploring". Furthermore, please regard the following points:

- Plotting with I-DEAS IPLOT:
Please read the file `#/doc/release_notes_E_Ideas`.
- Plotting with SICAD Geomatics PLOT:
EUKLID Design supports the 4.x version of PLOT.
PLOT is not included in the standard delivery.
- Plotting of a LAVIS structure viewport:
Plotting of a LAVIS structure viewport is not possible in batch mode.
- Plotting with Windows NT/2000/XP printers:
In Windows NT/2000/XP are the actions "output_scaled_NT" and "output_formated_NT" recommended. Please notice the Online help pages.
- HPGL:
All coordinates in hpgl are adjusted to the origin of the plotter, which is normally the middle of the output format. You can use any other origin by adding a new line in the configuration file "hpgl.cfg" :
 t lb
 t : transformation to the
 lb: left bottom, or corresponding
 "lu" left up
 "rb" right bottom
 "ru" für rechts oben und "m" für die Blattmitte
 "m" middle of the output format.

3.9 Customer-specific adaptations

You may adaptat many system properties.

- User interface-specific configuration switches (language...)
- Optional values for selectable parameters
- User-defined actions and objects
- Data system access mechanisms (file locator)
- Configuration files

The multi-stage configuration concept allows long-term storage of these adaptations.

According to the stage, these data are stored either directly within the model,

`<name>.mod`

user-specifically in the data directory,

`$HOME/design_config`

or installation-wide in the directory

`#/design_config`

Please pay attention to the appropriate access permissions. For 'SolidJoin' and 'EUKLID Documentation' the name of the configuration data directory are 'd23_config'.

Almost all configuration options are supported via the user interface. Only a few default values must be edited directly within files. Please refer to the user manual for further information.

3.10 Database Connection

For supplementary informations to the user manual please refer to the file

'#/d23bs/ipc.config'. On Windows NT/2000/XP the example

#/examples/aql/ODBC_UDA.uda may be adapted to support connection to data bases.

4 Restrictions

4.1 Notice

All listed restriction arising by release change are accepted consciously to allow enhancements and additional functionality. Partly there was strong efforts necessary to avoid incompatibilities to protect user investments for long.

4.2 X-Server mode

To receive good grafical performance, it is recommended to switch the X-sever to the 'Backing Store' mode. A hidden field behind a dialog window will be substituted with a pixel map stored before and there is no (time consuming) REDRAW necessary.

4.3 Restrictions in the leyer techniques

Within this release it is not possible to move objects in different layers which are created by one action. The layer transfer is hereby restricted!

Please handle external layers with extremely care, possible mishandling by the user could not yet be prevented. Layer structures and relation between different layers are allowed to change only when all external layers are loaded.

Please notify that external layers are only useful in the right way if they have references to that layer in which themselves are lying. Additional references to other external layers have the effect that the sequence of loading must be respected.

4.4 User defined actions and objects

The user defined actions, objects and tables of a model must be findable to load the model, if they are external. The search rule is described in file locator. It is no longer possible to move other objects on the right place to load the model, because every object has its own identification number.

4.5 SolidJoin

In 'SolidJoin' it is not possible to change imported assemblies. It is not allowed to create UDx with 3D functionality in 'SolidJoin', too.

4.6 Restrictions in the action 'model_clip' :

This action creates a new clipped model (hidden surface) of a selected set. The new model may be used for output to IGES/DXF/DWG. In single cases some wrong results are possible. If such a problem occurs, please make sure that the differences of the Z-values in the used planes and objects are big enough.

4.7 Restrictions of known bugs:

In contrast to the documentation in the action 'circle_3elements' the selector is interpreted excessive on internal point of view. The value is not following any describable logic and is to investigate with protocols depending of the single case.

5 Converting from previous versions

Detailed information about converting models from the former version **Sigraph Design V3.8** are written in the file `#/doc/release_notes_E_convert`.