UCDLTAGKIT
VERSION 4.1

USER MANUAL

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Central CAD and Design Solutions
Front-End Technology & Manufacturing

1 - UCDLTAGKIT GENERALITIES

The purpose of this product is to allow tagging the library cells according to ADCS Document "Naming Convention, Versioning and Tag in libraries and Ip " ADCS 7513486

UcdlTagKit allows to update and dump tags on

- **Cadence Library**
- **Synopsys Library**
- **Gds file**
- **Unicad Library Product**

1.1 UCDLTAGKIT REQUIREMENTS

- **To perform on Cadence Library : CADENCE Opus product is required Either CDBA (CDS5) or Openacces 2.0 (CDSOA) Cadence opus product is required. ucdlTagKit automatically detects which revision is used and performs on correspondent view type. In case of both CDBA and CDSOA are present in the same library, then ucdltag functions must be run twice (one for each type).**

  Cadence Opus product (uniopus) must be loaded before UcdlTagKit

- **To perform on Synopsys Library : SYNOPSYS Astro product is required**
- **To perform on Gds Files : nothing special required**

1.2 UCDLTAGKIT and DESIGN KIT

- **UcdlTagKit is a stand alone tool and does not required any Design Kit**
- **UcdlTagKit may as well be used with a Design Kit**

1.3 UCDLTAGKIT Functionality

- **Dump Tags**
- **Update Tags**
- **Create Tags (Cadence Only)**
- **Remove Tags (Cadence Only)**

1.4 UCDLTAGKIT Interfaces

- **A graphical interface is available for all functions**
  <command name> -gui &
- **An help command is available for all functions**
  <command name> -help
- **A batch command is available for all functions**
  <command name> <list of arguments>
- **A Cadence Opus integrated command through ciw menu *Tag is available for CDS Create Dump Remove**

• N.B. : It is recommended to start using <command name> -gui to become familiar with the command and its arguments before using batch command-line

1.5 UCDLTAGKIT CREATE and CADENCE TAG LAYER

- **To Create CDS Tags , the CADENCE CDS Tag layer is mandatory.**
- **To Create CDS Tags , Specifying the tag specification Revision is mandatory (choose "Year2005Spec" or "Year2003Spec")**
- **default value for cds5 tag layer is MKR ippid which suits for 090n 065n 045n ... technologies**
- **for other technology (50u 35u 25u 18u 13u) you may either set the environment variable CDS5TAGLAYER to the convenient Cadence layer name for this technology, or add a Design Kit (ucdlTagCreateCds will then find the cds5 tag layer in the Design Kit)**

1.6 UCDLTAGKIT CELLS NAME LIST SPECIFICATION

List of cells name may be specified

- **Where <list> can be either a space list of cells or a file name. Only the first column will be taken.**

1.7 UCDLTAGKIT CELLS EXTENSION SPECIFICATION

List of cells layout extensions may be specified

- **Where <list> can be either a space list of cells layout extension or a file name. Only the first column will be taken.**
- **The default is to use only 'layout' view. But for IOs there may be some 'layout\$ext' views that need to be tagged, so their list can be provided here.**

1.8 .UCDLTAGKIT CELLS TYPE

Allowed cell types are LIB LEAF IP PAD

- ***Note*: if "Guess LIB or LEAF" is specified, then the tool will consider a cell which is not instantiated by other cells as a Topcell (type LIB) and others as Leafcells (type LEAF).**

1.9 .UCDLTAGKIT AND TAG SPECIFICATION REVISION

Both "Year2003SPEC" ADCS R001868 RevisionA and "Year2005SPEC" ADCS 7513486 Revision D specification revisions are supported within ucdlTagKit.

- **Specifying the desired tag spec revision is mandatory for Create and also for Dump when the -sort option is on**
- **Otherwise the UcdlTagKit tool deal with both tags revisions**

2 - UCDLTAGKIT FUNCTIONS

2.1 CADENCE LIBRARY TAGGING

2.1.1 Create Tag on CDS5 library

This may be done either under Opus or using the Gui interface or with the batch command line

2.1.1.1 Create CDS Tag under Opus

In CIW *Tag Menu choose Tag

Click on SETUP, a new form appears => fill it and click OK, then choose Tag, Dump Tag or Remove Tag.

2.1.1.2 Create CDS Tag under Unix

Type command :

ucdlTagCreateCds -gui &

Usage: ucdlTagCreateCds -type <CDS5> [-action <Create|Dump|Remove>]

[-tagSpec <Year2003Spec|Year2005Spec>] [-spec <cells|whole_library>]

[-tmp <path>] [-keep <Yes|No>] -cds <string> [-ext <string>]

-cells <string> [-top <string>] [-leaf <string>] [-ip <string>]

[-pad <string>]

[-vendor <STMicroelectronics NV|freescale semiconductor, Inc|Koninklijke Philips Electronics N.V.|Virage Logic Corporation|ARM Limited|Crolles2Alliance>]

[-product <string>] [-tagVersion <string>]

[-owner <FTM|CMG_STB|TPA_DAS|LTG|SoC|eMC|C2A|DESIGN|IPREP|HPC_CSD|other>]

-otherowner <string> [-techno <string>]

[-celltype <LIB|LEAF|IP|PAD|Guess LIB or LEAF>] [-cellid <string>]

[-signature <string>] [-compref] [-comment <string>] [-sort]

[-help|-h|-u|-U] [-gui] [-version]

where:

-type View type : CDS5. Default is 'CDS5'.

-action Action to perform. Default is 'Dump'.

-tagSpec Revision of Tag Specifications.

-spec Specify Cells or whole_library. Default is 'whole_library'.

-tmp Temporary directory. Default is '/tmp/ucdlTag'.

-keep Keep Temporary directory. Default is 'No'.

-cds Cadence backend LibName (CDS5).

-ext Extensions of Layout views.

-cells Cells List or Cells File Path.

-top Top Cells List or Top Cells File Path.

-leaf Leaf Cells List or Leaf Cells File Path.

-ip IP Cells List or IP Cells File Path.

-pad PAD Cells List or PAD Cells File Path.

-vendor Trade mark of the vendor. Default is 'STMicroelectronics NV'.

-product Name of Product.

-tagVersion Tag Version.

-owner Name of IP_Owner : ST organization that manage the Product. Default is 'FTM'.

-otherowner Name of other IP_Owner : ST organization that manage the Product.

-techno Name of Technology.

-celltype Cell type for the tag. Default is 'LIB'.

-cellid Cell_Id (only for memories and IP).

-signature IP's Signature.

-compref Store viewtype at the beginning of the Comment.

-comment Comment to add in the tag (after viewtype).

-sort Sort Tags (expected tags only).

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.1.2 Dump Tag on CDS5 library

Dump Tag on CDS5 library may be perform with functions described in chapter 2.1.1 and also with ucdlTagDumpCds unix command

Usage: ucdlTagDumpCds -cdsLibPath <directory> -libraryName <string>

[-cellsList <string>] [-ext <string>] [-out_tag <path>] [-tmpPath <path>]

[-outFilesSuffix <string>] [-help|-h|-u|-U] [-gui] [-version]

where:

-cdsLibPath Input CADENCE Library Path (CDS5 or CDSOA).

-libraryName Input Library Name.

-cellsList Cells to dump (default all cells).

-ext List of Layout extensions (def dump only layout views).

-out_tag output file containing the dump of the tags (def file tags.<libname>.CDS).

-tmpPath Output temporary directory for script files. Default is ’./TMP’.

-outFilesSuffix outfilesuffix CADENCE_/MENTOR_.

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.1.3 Remove Tag on CDS5 library

Remove Tag on CDS5 library may be perform with functions described in chapter 2.1.1

2.1.4 Update CDS Tag

Update Tag on CDS5 library may be perform with function ucdlTagUpdateCds

Usage: ucdlTagUpdateCds -cdsLibPath <directory> -libraryName <string>

[-cellsList <string>] [-ext <string>] [-tmpPath <path>] [-cdsLib <file>]

[-tagDate] [-tagProduction] [-tagAlliance] [-removeAlliance] [-tagComment]

[-tagProduct <string>] [-tagVersion <string>] [-tagTechno <string>]

[-outFilesSuffix <string>] [-help|-h|-u|-U] [-gui] [-version]

where:

-cdsLibPath Input CADENCE Library Path.

-libraryName Input Library Name.

-cellsList cells List or path of file containing Cells List.

-ext Extensions of Layout views. Default is '*'.

-tmpPath Output temporary directory for script files. Default is './TMP'.

-cdsLib specify specific cds.lib file.

-tagDate Update Tag : Date (current date YYMMDD).

-tagProduction Update:Remove Development Tag (d and beta).

-tagAlliance Update:Add Tag Alliance (t).

-removeAlliance Update:Remove Tag Alliance (t).

-tagComment Update Tag : Comment : AVT for AVANTI, CDS5 for CADENCE, GDS for file GDS2.

-tagProduct Update Tag : Product (-tagProduct).

-tagVersion Update Tag : Version.

-tagTechno Update Tag : Techno.

-outFilesSuffix outfilesuffix CADENCE_/MENTOR_.

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.2 SYNOPSYS LIBRARY TAGGING

2.2.1 Dump Tag on Avanti Library

Dump Tag on SYNOPSYS library may be perform with function ucdlTagDumpAvt

Usage: ucdlTagDumpAvt -avantiLibPath <directory> -libraryName <string>

[-cellsList <string>] [-ext <string>] [-out_tag <path>] [-tmpPath <path>]

[-help|-h|-u|-U] [-gui] [-version]

where:

-avantiLibPath Input SYNOPSYS Library Path.

-libraryName Input Library Name.

-cellsList Cells to dump (default all cells).

-ext List of Layout extension to increase cells list (default only cells are Dump).

-out_tag output file containing the dump of the tags (default file <libname>.tags).

-tmpPath Output temporary directory for script files. Default is ’./TMP’.

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.2.2 Update Tag on Avanti Library

Update Tag on SYNOPSYS library may be perform with function ucdlTagUpdateAvt

Usage: ucdlTagUpdateAvt -avantiLibPath <directory>

[-libraryName <string>] [-cellsList <string>] [-ext <string>]

[-tmpPath <path>] [-tagDate] [-tagProduction] [-tagAlliance]

[-removeAlliance] [-tagComment] [-tagProduct <string>]

[-tagVersion <string>] [-tagTechno <string>] [-help|-h|-u|-U] [-gui]

[-version]

where:

-avantiLibPath Input SYNOPSYS Library Path.

-libraryName Input Library Name.

-cellsList cells List or path of file containing Cells List.

-ext Extensions of Layout views.

-tmpPath Output temporary directory for script files. Default is ’./TMP’.

-tagDate Update Tag : Date (current date YYMMDD).

-tagProduction Update:Remove Development Tag (d and beta).

-tagAlliance Update:Add Tag Alliance (t).

-removeAlliance Update:Remove Tag Alliance (t).

-tagComment Update Tag : Comment : AVT for Library AVANTI, CDS5 for Library CDS5, GDS for file GDS2.

-tagProduct Update Tag : Product (-tagProduct).

-tagVersion Update Tag : Version.

-tagTechno Update Tag : Techno.

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.3 GDS LIBRARY TAGGING

2.3.1 Dump Tag on GDS file

Dump Tag on GDS file may be perform with function ucdlTagDumpGd

Usage: ucdlTagDumpGds -gds <file> [-cellsList <string>] [-ext <string>]

[-out_tag <path>] [-out_notag <path>] [-help|-h|-u|-U] [-gui] [-version]

where:

-gds Input gds file.

-cellsList Cells to dump (default all cells).

-ext List of Layout extension to increase cells list (default only cells are Dump).

-out_tag output file containing the dump of the tags (default file <libname>.tags).

-out_notag output file containing cells which are not tagged (default file <libname>.notags).

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.3.2 Update Tag on GDS file

Update Tag on GDS file may be perform with function ucdlTagUpdateGds

Usage: ucdlTagUpdateGds -inputgds <file> [-cellsList <string>]
[-ext <string>] -outputgds <path> [-tmpPath <path>] [-tagDate]
[-tagProduction] [-tagComment] [-tagCommentStr <string>]
[-tagProduct <string>] [-tagVersion <string>] [-tagTechno <string>]
[-tagVendor <string>] [-tagIP_Owner <string>] [-help|-h|-u|-U] [-gui]
[-version]

where:

-inputgds Input gds file.

-cellsList list of updated cells, default is all cells.

-ext List of Layout extension to increase cells list.

-outputgds Output gds file.

-tmpPath Output temporary directory for script files. Default is ’./TMP’.

-tagDate Update Tag : Date (current date YYMMDD).

-tagProduction Update/Remove Tag : Dev (d).

-tagComment Update Tag : Comment (set to GDS).

-tagCommentStr Update Tag : Comment (set to string).

-tagProduct Update Tag : Product.

-tagVersion Update Tag : Version.

-tagTechno Update Tag : Techno.

-tagVendor Update Tag : Vendor.

-tagIP_Owner Update Tag : Ip_owner.

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.4 UNICAD LIBRARY PRODUCT TAGGING

2.4.1 Dump Tag on UNICAD LIBRARY PRODUCT

Dump Tag on UNICAD LIBRARY PRODUCT may be perform with function ucdlTagDump

Usage: ucdlTagDump -productPath <path> [-libraryName <string>]

[-cells <whole_library|spec_library|user_list>] [-cellsList <string>]

[-ext <string>] [-avanti] [-cadence_cds] [-mentor_cds] [-gds]

[-tmpPath <path>] [-help|-h|-u|-U] [-gui] [-version]

where:

-productPath Input Library : Product Path.

-libraryName Input Library Name.

-cells cells defined in SPEC/METADATA/INTERFACE directory. Default is 'whole_library'.

-cellsList Cells List or path of file containing Cells List.

-ext when user_list must be explicit list.

-avanti Dump Tag in Library : AVANTI.

-cadence_cds Dump Tag in CADENCE Library : CDS/CDS5 or CDSOA.

-mentor_cds Dump Tag in Library : MENTOR/CDS5 or CDSOA.

-gds Dump Tag in Library : GDS.

-tmpPath Output temporary directory for script files. Default is ’./TMP’.

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.4.2 Update Tag on UNICAD LIBRARY PRODUCT

Update Tag on UNICAD LIBRARY PRODUCT may be perform with function ucdlTagUpdate

Usage: ucdlTagUpdate -productPath <path> [-libraryName <string>]
[-cells <whole_library|spec_library|user_list>] [-cellsList <string>]
[-ext <string>] [-tmpPath <path>] [-cdsLib <file>] [-avanti]
[-cadence_cds] [-mentor_cds] [-gds] [-tagDate] [-tagProduction]
[-tagAlliance] [-removeAlliance] [-tagComment] [-tagProduct <string>]
[-tagVersion <string>] [-tagTechno <string>] [-help|-h|-u|-U] [-gui]
[-version]

where:

-productPath Input Library : Product Path.

-libraryName Input Library Name.

-cells cells specification: whole or in .lib or list. Default is ’whole_library’.

-cellsList cells List or path of file containing Cells List.

-ext Extensions of Layout views. Default is ’*’.

-tmpPath Output temporary directory for script files. Default is ’./TMP’.

-cdsLib specify specific cds.lib file.

-avanti Update Tag in Library : AVANTI.

-cadence_cds Update Tag in CADENCE Library : CDS/CDS5 or CDSOA.

-mentor_cds Update Tag in Library : MENTOR/CDS5 or CDSOA.

-gds Update Tag in Library : GDS.

-tagDate Update Tag : Date (current date YYMMDD) (-tagDate).

-tagProduction Update:Remove Development Tag (d and beta) (-tagProduction).

-tagAlliance Update:Add Tag Alliance (t) (-tagAlliance).

-removeAlliance Update:Remove Tag Alliance (t) (-removeAlliance).

-tagComment Update Tag : Comment : AVT for AVANTI, CDS5 for CDS5, GDS for GDS2.

-tagProduct Update Tag : Product (-tagProduct).

-tagVersion Update Tag : Version (-tagVersion).

-tagTechno Update Tag : Techno (-tagTechno).

-help|-h|-u|-U Display the script usage.

-gui Graphical user interface.

-version Display the script version.

2.5 PRODUCTION TAGGING for UNICAD LIBRARY PRODUCT

This is usually done through UPT using the functions described in chapter 2.4

UcdlTagKit should support all the library structures which has been declared production as well Mat9 libraries structures as MAT10 libraries structure. In case of different library structure (not supported) the work around is to use functions described in chapter 2.1 and 2.2 and 2.3

2.5.1 Dump UNICAD PRODUCT LIBRARY TAG

example of command line :

ucdlTagDump -productPath <Unicad Product Path> -cells spec_library

When both CDBA and OpenAccess 2.0 are supported in the same library, both cannot be dump in the same run. Therefore, ucdltagDump must be run twice. One of the run with CADENCE cdba, the other run with CADENCE openAccess. To save time (avoids to dump avanti and gds twice) the two following commands may be run :

- ucdlTagDump -productPath <Unicad Product Path> -cells spec_library
- ucdlTagDump -productPath <Unicad Product Path> -cells spec_library -cadence_cds -mentor_cds

2.5.2 PRODUCTION TAG for UNICAD PRODUCT LIBRARY

example of command line to Tag Production MAT10 Unicad Library Product

ucdlTagUpdate -productPath <Unicad Product Path> -tagProduction

When both CDBA and OpenAccess 2.0 are supported in the same library, both cannot be dump in the same run. Therefore, ucdltagDump must be run twice. One of the run with CADENCE cdba, the other run with CADENCE openAccess. To save time (avoids to dump avanti and gds twice) the two following commands may be run :

- ucdlTagUpdate -productPath <Unicad Product Path> -tagProduction
- ucdlTagUpdate -productPath <Unicad Product Path> -tagProduction -cadence_cds -mentor_cds

3 - EXAMPLE OF TAGS

3.1 Year 2001 Tag Specification

& Vendor ST

& Product CLOCKLIB8DHS

& Version 1.2

& Metric 1.070680e-04

& Division CRD

& Techno hcmos8d

& Area 1.070680e-04

& Celltype LIB

& Cell_Id BFHSX16_0

& TagDate 20010514

& Comment (May 14 16:28:54 2001)

3.2 Year 2003 Tag Specification

& Vendor STMicroelectronics NV

& Product CORELIB7LL

& Version 3.3.a

& Metric 5.4e-5

! IP_Owner CRD

! Techno HCMOS7

! Area 5.4e-5

! Celltype LIB

! Cell_Id AN2ALL

! Signature

@ TagDate 20041202

@ Comment AVT

3.3 Year 2005 Tag Specification

& Vendor STMicroelectronics NV

& Product IO65LP_TF3V3_BASIC_50A_ST_7M4X0Y2Z

& Version d3.0beta11

& Metric 3.368000e-05

& _IP_Owner FTM

& _Techno CMOS065LP_7M4X0Y2Z_50A

& _Area 3.368000e-05

& _Celltype LEAF

& _Cell_Id ST_TF3V3_CADLAYERS_FILLER1_LIN

& _Signature

& _Tag_Spec ADCS 7513486 Revision D

& _Date_Time 20060116

& _Comment CDS5

4 - SUPPORTED LIBRARY STRUCTURE

Unicad Product Library Spec_file METADATA

SPEC

INTERFACE

CADENCE/CDS5 library: CDS

CDS5

CADENCE/CDS5

MENTOR/CDS5

CADENCE/CDSOA library: CADENCE/CDSOA

MENTOR/CDSOA

SYNOPSYS library: AVANTI/LAYOUT

SYNOPSYS/common/LAYOUT

SYNOPSYS/LAYOUT

GDS file : LAYOUT/<libname>.gds

LAYOUT/*/*.gds

SIGNOFF/common/GDS/<libname>.gds

UNIX/GDSII/*/*.gds*

physical/<libname>.gds

In case several gds files are found in the library structure, they are all dumped and updated

CDS5 and CDSOA cannot be dump or update in the same run (two separated runs are required)

Library or files outside of this library structure are ignored.

5 - OUTPUT FILES NAMES FOR DUMP

5.0.1 UcdkTagKit 4.1 output files names:

tags.*.AVANTI

tags.*.CADENCE_CDS5

tags.*.CADENCE_CDSOA

tags.*.CADENCE_CDS

tags.*.MENTOR_CDS5

tags.*.MENTOR_CDSOA

tags.*.GDS

5.0.2 UcdkTagKit 4.0 output files names:

tags.*.AVANTI

tags.*.CDS5

tags.*.GDS