macrovision
CREATIVE SOFTWARE

Eagle 15

Release Notes

Version	15.0.2
Build	04
Licensing	FlexNet
Date	17th April 2018

ABOUT THIS RELEASE

This document lists the newly introduced features of this particular major version. Please refer to ancillary documentation and help files delivered with the release for additional information and samples.

V15 Eagle CDS (Creative Developer Studio) development is a major release version implementing using UI2008 and UNICODE. This version continues the flexible approach of Eagle in offering to developers' dynamic opportunities to maximize prototyping, implementation of graphics and real-time data acquisition.

The release directory structure and executable naming is changed as follows:

Eagle15\Bin\STD directory now contains the Eagle executables
- *EagleFlexNET.exe (FlexNET licensed Eagle) [may also be named Eagle.exe]*

Eagle\Bin\Efc directory contains Eagle Foundation Classes for Python

Eagle15\Bin\Utilities directory containing ancillary Eagle Utilities

Eagle15\Bin\Winplot directory containing Winplot Utility

Eagle15\Bin\Xplot directory containing Xplot Utility

Eagle15\SDK directory contains Programming Interfaces for Eagle and Services
- *EFC -* directory containing Eagle Foundation Classes for Python
- *EPI – Eagle Programmer Interface API for Eagle services and functions*
- *LibUFO – C routines library to interact with Eagle SM UFO files*
- *LibEagle – C routines library to interact with Eagle model files*

[CERTIFICATION] Eagle will run on Windows Server 2008, Windows Server 2012 (R2), Windows Server 2016, Windows 7, Windows 8.1, and Windows 10 (Pro and Enterprise). If the version is fully certified, then Eagle will run automatically without warning. If Eagle is not fully certified for a specific service pack, then Eagle will run normally after warning the user. VMs such as VMware (Ws)(vSphere) and Hyper-V may be used.

[LICENSING] Starting from versions 15.0.x, V14.7.x and V12.9.x Eagle licensing is exclusively based on FlexNET. FlexNET Eagle licensing has replaced all existing FLEXlm and Hasp licensing systems. For more details about licensing in this version see the references to Licensing below and the Licensing Guide book provided with this release.

Dublin, 17th April 2018

Licensing

This version is only released for FlexNET licensing systems. This licensing system and differences to previous licensing systems are described in the 'Eagle Licensing Guide'. **The Eagle Licensing Guide is an important document; please give it your attention.**

The key advantages of FlexNET are as follows;

- Different Eagle versions (including 15.0.x and later, 14.7.x and later, and 12.9.x and later) can run from the license
- Support for uncounted standalone licenses
- Support for redundant servers
- Supports for BORROWING licenses from servers
- Support for INCREMENTAL licenses
- Support for 32bit (x86) and 64bit (x64) FlexID servers
- Serial Number watermarking removed allowing for hot-swapping without new license.

The default installation option is for a workstation uncounted license which only uses the license for licensing requiring no server configuration. It is also possible select a server configuration (x86 or x64). Whichever option is selected, to obtain a license the installer should run the GenHostID script which generates a host information file used for licensing. This file should be sent to the OEM supplier or emailed directly to licensing@macrovision.ie or submitted in the secure form at https://www.macrovision.ie/lics/license.php

No configuration of the 'uncounted' license is required. An example of an uncounted workstation license file follows:

```
FEATURE fv MVISION 15.100 31-dec-2019 uncounted
VENDOR_STRING=MACROV \
    HOSTID= FLEXID=9-45eee97 SIGN="1E36 C20B 0F11 0AAF A48B 9CD8 \
    DA6F 8E33 DED8 D3EC 2554 5AB7 E878 DFEE 9922 112D DE6F F17A \
    80A8 7BE6 E7C2 0398 CD99 943E 9AFA 995F F5ED 889A 2F3C A3BC"
VENDOR_INFO=557766
FEATURE sm MVISION 15.100 31-dec-2019 uncounted \
    HOSTID=FLEXID=9-45eee97 SIGN="1316 9F47 1475 D084 064B 5D37 \
    7E59 A3A1 0B57 B6D4 E158 A15E 8350 1AED 5633 0453 BA4F 6A6E \
    0EC0 4379 809B 53BE 395E C3EB AEEE 7CC9 70F1 0FAF 9843 5319"
VENDOR_INFO=525214
FEATURE hy MVISION 15.100 31-dec-2019 uncounted \
    HOSTID=FLEXID=9-45eee97 SIGN="15B1 DE40 94E9 B9A8 98B0 977F \
    3D14 E9CE DFEE B2AC 3125 990D E870 9D59 30BE 1CCB 4E17 AF92 \
    43ED B6FB 9738 ED69 451A 264F 2C51 AC16 C7EF 1DCE 5D49 3547"
VENDOR_INFO=544620
```

The FlexNET server license is similar but contains additional licensing lines and configuration is possible. In this case only items which can be edited are the hostname and optional port number (default 31050) on the SERVER line.

Additionally on the DAEMON line, the MVISION exe path may be changed (Note: if the MVISION.EXE is located in the same directory as LMGRD.EXE and the LICENSE file then the path may be omitted entirely). Any other changes will invalidate the license.

```
SERVER pythonhub  FLEXID=9-45eee97a
DAEMON MVISION c:\flexlm\mvision.exe
FEATURE fv MVISION 15.100 31-dec-2019 2 VENDOR_STRING=MACROV \
    SIGN="0C30 6107 A87F CC39 8123 EC06 EE29 620F BF98 BB51 634E \
    5E98 CC37 FF38 9E20 1191 E2AF 0B46 5F43 6765 4E2F EB69 A872 \
    0593 483D 2AB9 796E CE1D D227 24F2" VENDOR_INFO=552132
FEATURE sm MVISION 15.100 31-dec-2019 2 SIGN="01D9 2DB5 ABDB 866C \
    459B 93AA A947 BB59 66C9 7F27 D611 B28D DE7A 7EA9 0A1D 0CB1 \
    A87D C4A8 2095 4746 4C2F 0D30 14EC FBCA B85D 680C 8D7B 81B6 \
    54C8 0836" VENDOR_INFO=534291
FEATURE hy MVISION 15.100 31-dec-2019 2 SIGN="1797 37E3 6046 718C \
    4475 A489 1EE2 F41B 0100 3B9B 5D76 E821 1CDA 504C 8D84 06D8 \
    D493 F9E5 7324 4135 0CC8 6C14 606A 1194 F2FC DC72 8746 04CA \
    D8EF 3B42" VENDOR_INFO=526779
FEATURE cl MVISION 15.100 31-dec-2019 2 SIGN="174D 7E61 9822 33BC \
    D922 59F2 FE78 9B46 488D DE7A 2384 9150 FFA1 2CF2 9779 10F5 \
    8FD8 C83B 08E8 24E3 CCDE 5AFF 3D66 2EED 2E8C 805F FFC4 83E3 \
    304D 4B50" VENDOR_INFO=528970
FEATURE acad MVISION 15.100 31-dec-2019 2 SIGN="1024 995B DEE5 6861 \
    D16A D7E8 E663 919D F425 FE82 0A2F BAD4 0883 CFC2 1BE5 0738 \
    5F1F B001 2893 835A 569A 4296 A616 2C3A B3E9 AFD4 B4AB 4B30 \
    7674 2A81" VENDOR_INFO=549315
FEATURE deca MVISION 15.100 31-dec-2019 2 SIGN="143C E36C D26A 6A06 \
    17A2 9EE5 2B65 7DA9 D041 9DEE 7D84 C1C3 1200 599D D6FF 1C25 \
    70CB BA58 BDEC A120 0EC1 2AB4 06AB B1AB DCE6 C2CD 45E9 7826 \
    8B99 E733" VENDOR_INFO=547124
```

NB Warning : The release feature line of the license file must be equal or greater than the version number of the Eagle release in order run that version.

This means that feature lines listed with 15.100 for example will run v15 and any previous versions but will not future versions without first replacing the license with a higher major version:

```
FEATURE fv MVISION 15.100 31-dec-2020 2 VENDOR_STRING=MACROV \
```

[FLEXID] The plug and play Windows installer for the FlexID (SafeNET) does not install all the required Flexera FlexNET files. A number of DLLs must be installed using the Eagle Setup or manually installed for x86 and x64 systems.

On 64-bit Windows systems, haspsrm_win64.dll should be placed in the %windir%/System32 directory and haspsrm_win32.dll should be placed in the %windir%/SysWOW64 directory.

On 32-bit Windows systems, the haspsrm_win32.dll should be placed in the %windir%/System32. See FlexID installation notes for details.

About Version 15 and General Release Notes

- V15 is UNICODE enabled and is based on the UI2008 GUI model. This version provides a natural progression for V14 UI2008 users who want to upgrade and maintain compatibility V14 GUI code. Some GAML XML based graphical user interface are present in elements such as the RIBBON but full XML UI is branched as a separate platform. Details of the differences in the UI models can be found on the Macrovision website. Contact Macrovision Support for information.

- [UNICODE] This version Eagle includes complete support for the Unicode character sets in Eagle UI, files, UNC and utilities. The complete description of the UNICODE functionalities is described in the Eagle-UNICODE document and help file included with the release. Particular attention should be given to the saved format of files including the INI which is saved as UCS2 LE BOM.

- [UNICODE] Versions of Windows since Windows 7 have UNICODE support automatically enabled. Older versions of Windows did not support UNICODE by default and V15 version of Eagle is not supported on Windows versions prior to Windows 7 meaning an operating system upgrade is required to run V15.

- The message file is now used in source format and consequently the EAGLEMESSAGEFILE entry of the INI file must be set accordingly.

- [FILE FORMAT] Eagle V15 supports a new format for Eagle .MOD, .PLO and .VAR files. It should be noted that Eagle V15 can transparently read its new formats as well as all old formats, however files that are created using Eagle V15 cannot be accessed by previous Eagle versions.

- [VISUAL STUDIO] is released compliant with Visual Studio 2015. Alternate Visual Studio releases may be available on request, please contact support at Macrovision for assistance.

- [PYTHON] This version supports Python 2.6. The Python26.DLL is required.

- [LIQUIDXML] LiquidXML current aligned version is Liquid v.12.

- [INTELLIPORT] DWG is upgraded to DWGDirect V4.1.0 which includes many minor enhancements and support for Visual Studio 2015.

- [GUI] This version is linked to Prof-UIS library V.3.2.0. This is the first version to provide native support for Windows 10 and Visual Studio 2015 capabilities.

- [LICENSING] This release is aligned to FlexNET Publisher 11.14. This is the first version to provide support for Visual Studio 2015 A new mvision and lmgrd are required.

- [CONFIGURATION] Two Windows variables are used as default locations for installation of Eagle programs and configuration files.

  Program Files are placed in a sub directory of
  %PROGRAMFILES%\Macrovision\EagleCDS

  Data Files are placed in a sub directory of
  %ALLUSERSPROFILE%\Macrovision\EagleCDS

Variable	Legacy Windows Location	Windows 7/8/10 Onwards
%ALLUSERSPROFILE%	c:\Documents and Settings\All Users	c:\ProgramData
%PROGRAMFILES%	c:\Program Files c:\Program Files (x86)	c:\Program Files c:\Program Files (x86)
%USERDATA%	c:\Documents and Settings\{user}	c:\Users\{user}

  It is recommended your apps and applications should environment variables consistently in the same manner.

- [DLL] It is standard practice to place Eagle supporting DLLs in the same directory as the relevant Eagle executable.

- [ADMIN] When manually installing Eagle you need to ensure the setup program (your configuration) includes the appropriate Visual C runtime libraries.

- [ADMIN] The manifest file Eagle.exe.manifest must also be present in the same folder where the Eagle executable is placed.

- [PLOTTING] Starting from XPLOT 8.1 and WINPLOT 3.1, XPLOT V7 and WINPLOT V2 are obsolete, V14 and V15 now share the same executables.

  The compatible release programs to use are Xplot v8.3.0 compliant with Visual Studio 2015 and Winplot v3.2.0 (VS2013) [contact support for details]

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NEW FEATURES AND IMPLEMENTED REQUESTS

Release: v.15.0.2 b01-04 FlexNet

- [IMPORTANT RELEASE] This the official supported general release of V15.

- This version is certified for Windows 10.

- [VISUAL STUDIO] This version is compatible with Visual Studio 2015

- [EPI] Epi V3.13.2 release Visual Studio 2015.

- [LIBEAGLE] LibEagle V6.5.1 x86 release Visual Studio 2015.

- [LIBEAGLE] LibEagle V6.6.0 x64 release Visual Studio 2015.

- [LIBUFO]LibUFO V2.2.0 release Visual Studio 2015.

- [XPLOT] Xplot V8.3.0 release Visual Studio 2015.

- [WINPLOT] 3.2.0 release Visual Studio 2013

- [EVR] 3.13.2 release Visual Studio 2015

15.0.2 b03

- GET: The GET command has a new primer to avoid caching for the involved model has been implemented. The feature is now available using the new primer "NOCACHE", for instance:

   GET myModel, <std primers>, NOCACHE

15.0.2 b02

- OPTIONS: The request to remove the WS_TABSTOP style from labels (button type 5) has been implemented

15.0.2 b01

- [GUI] This version is linked to a new version of the Prof-UIS library, which is V.3.2.0. This new version is the first version to provide native support for Windows 10 and Visual Studio 2015 capabilities and also includes a series of minor enhancements with respect to the previous V.3.0.0.

- [INTELLIPORT] This version is linked to the DWG Direct Toolkit V.4.1.0. The new DWG Direct version includes a significant amount of minor enhancements when compared with the previous V.3.9.1. This is also the first version DWG Direct to provide support for Visual Studio 2015.

- [LICENSING] This version linked to the V.11.14 FlexNET Publisher FNP library, This version of FlexNET Publisher is the first to support Visual Studio 2015. A new lmgrd.exe and mvision.exe are required.

15.0.1.b04

- #5742   EXPORT: The request to export drawing-preview as an option has been implemented.   Note: this feature is configurable by means of EXPORT_DRAWING_PREVIEW=yes | no (default is 'yes')

- #5764   EXPORT: The request to Export the "@" character intact instead of being exported to as "∅" (diameter symbol) has been implemented. Note that this is achieved by means of a new environment variable: "EXPORT_@_CHAR_STRAIGHT"

  When setting the variable "EXPORT_@_CHAR_STRAIGHT=yes" the new feature is active. The default is "EXPORT_@_CHAR_STRAIGHT=no", which is the default previous behaviour of the system.

- #5761   DB: The option to handle spaces in DB command path names has been implemented.

  Enabling the option requires the setting of the environment variable: PATCH5761 =yes

  The default for this environment setting is "no" (disabled)

  When this option is active, the DB command requires a "," to separate the database name from the DSN, i.e.:

  DB DATABASE "C:\temp\folder with spaces\example.mdb","MSAccess"

- #5757   EXPORT: The export PDF files has been implemented with the EXPORT command extended to support PDF output.

  The output is driven by new Eagle settings:

  > SET PDFSIZE=<xSize>, <ySize>
  > Where <xSize> and <ySize> are expressed in mm. No default
  >
  > SET PDFDPI=<value>
  > Default is 600.
  >
  > SET PDFVERSION=<value>,
  > Supported values are:
  > 15   V.1.5   (default)
  > 16   V.1.6
  >
  > SET PDFMONOCROME=<value>,
  > Possible values are:
  > 0   Full colour   (default)

1   Monochrome

SET PDFTITLE=<string>
SET PDFAUTHOR=<string>
SET PDFSUBJECT=<string>
SET PDFPRODUCER=<string>
SET PDFAPPLICATION=<string>

Example:

SET PDFSIZE = 594,841
SET PDFVERSION = 15
SET PDFDPI = 800
SET PDFMONOCROME = 1
SET PDFTITLE=Example Drawing
SET PDFAUTHOR=name
SET PDFSUBJECT=Test Export PDF from Eagle
SET PDFPRODUCER=MacroVision
SET PDFAPPLICATION=Eagle
EXPORT example-594x841-bw.pdf
SET PDFMONOCROME = 0
EXPORT example-594x841-col.pdf

Two new configuration files are required to supporting Monochrome PDF

EXPORT: monochrome.ctb and monochrome.stb.

They must be located in the –EAGLESITE/config folder.

In a typical standard Eagle installation the config are is
c:/ProgramData/Macrovision/Eagle15/config

- #5759 The DWGDirect library is upgraded to V4.0.1

- #5765 The VARIABLE command ability to handle spaces in filenames has been implemented.

- #5765 The RETRIEVE command ability to handle spaces in filenames has been implemented.

- This version is released against Visual Studio 2013

15.0.1.b03

- EXPORT: The request to have three possibilities for exporting polylines has been implemented:

    1. Export to 2D polylines (the old way)
    2. Export to 2D (dashed) and 3D polylines (continuous)
    3. Export to 3D polylines (the current way) has been implemented.

The desired behaviour can be set through a new environment variable EXPORT_POLYLINES where the possible settings are:

EXPORT_POLYLINES = 2D_ONLY
EXPORT_POLYLINES = 3D_IF_CONTINUOUS
EXPORT_POLYLINES = 3D_ONLY

The default is "EXPORT_POLYLINES = 3D_ONLY"

- PROMPT: The request to extend the length for input of text, making the widget scrollable in H-size has been implemented.

- Compiled using Visual Studio 2013

- Aligned with V14.9

- #5674   EXPORT: Introduced the possibility to export SAT files

- #5689   Sorting in Multi-column lists is implemented

- #4970   LIST: a new primer DUMP to write the selected lines into the output file specified through the L= primer (batch multiple selection)   The new primer DUMP is implemented for all types of list (ie: LIST W=1,DUMP='filename.dat'; LIST P=11,B=1,DUMP='filename.dat'.

- #5672   RIBBON FREEZE: the possibility to freeze/unfreeze the ribbon file menu is implemented.

15.0.1.b02

- Support for Windows 8 is certified from this release.

- [GUI [RIBBON] A new command RIBBON SAVE which saves the current ribbon configuration to an XML file is introduced.

    RIBBON SAVE

This solves the problem of not saving the QAT when a change to the ribbon is applied.

- [GUI] [RIBBON] The "big" tag used in V14 RIBBON becomes the "large" tag instead. For example:

<ImageButton Image="- imgs\HThorus.bmp" Label="半花托" Size="large"/>

- [INTELLIPORT] This version is linked with a new version (3.8.2) of the DWG Direct toolkit. This implements the request to support ACAD2013 with Teigha V3.8.2.

- The IMPORT command is now capable of reading files from AutoCAD 2013.

- The EXPORT command is now capable of writing files to AutoCAD 2013.

- A new value "DXF_EXPORT_FORMAT = vac27" has been added. The complete set of possible values for the variable is now as follows:

  DXF_EXPORT_FORMAT=old ; AutoCAD 2002
  DXF_EXPORT_FORMAT=new ; AutoCAD 2007
  DXF_EXPORT_FORMAT=vAC09; AutoCAD Release 9
  DXF_EXPORT_FORMAT=vAC10; AutoCAD Release 10
  DXF_EXPORT_FORMAT=vAC12; AutoCAD Release 11-12
  DXF_EXPORT_FORMAT=vAC13; AutoCAD Release 13
  DXF_EXPORT_FORMAT=vAC14; AutoCAD Release 14
  DXF_EXPORT_FORMAT=vAC15; AutoCAD 2000-2002
  DXF_EXPORT_FORMAT=vAC18; AutoCAD 2004-2006
  DXF_EXPORT_FORMAT=vAC21; AutoCAD 2007
  DXF_EXPORT_FORMAT=vAC24; AutoCAD 2010-2011
  DXF_EXPORT_FORMAT=vAC27; AutoCAD 2013

  The default value is remains DXF_EXPORT_FORMAT=old (AutoCAD 2000-2002).

- New release XPLOT 8.1.2 and WINPLOT 3.1.1 are released. Note. Starting from these versions, XPLOT V7 and WINPLOT V2 are now obsolete as from now on, V14 and V15 will share the same executables.

- [PLOT] Transparency is now handled (ref. Set TEXTTRANSP). A new section in the WINPLOT INI file has been defined in order to configure this option:

  [FontParams]
  TRANSPARENT = ON|OFF

  The default is "TRANSPARENT = ON", that is the default behaviour in Eagle.

  Winplot 3.1.1 should only be used in conjunction with Xplot V.8.1.2 or greater.

  Note: starting from this version, WINPLOT V2 is made obsolete and WINPLOT V3 is used for both, V14 and V15.0

- [PLOT] starting from this version, XPLOT V7 is made obsolete and XPLOT V8 is used for both, V14 and V15.0

- [LIBEAGLE] A new LibEagle V6.0.5 is released.

- [LIBUFO] A new LibUFO V2.0.3 is released.

- [CONFIG] #3331.1   PATCH3331 must be always active. The default is changed from "unset" to "yes".

  [CONFIG] #5630 The default for DISABLE_TEXT_OPTIMIZATION which is "yes" at the moment should be set to "no".

  DISABLE_TEXT_OPTIMIZATION=no

- Details of other issues provided in this release are located in the FIXES AND OTHER ISSUES section.

15.0.1 B01

- This version is a developer release. Please contact rnd@macrovision.ie to participate in the V15 release schedule.

- This is the first V15.0 version to support FlexNet licensing.

  Please refer to the Eagle Licensing Guide provided with this release for all the features of the new licensing and differences to existing systems.

  This release is shipped with a new sub-folder called "flexnet" that includes all the utilities that are described in the Eagle Licensing Guide.

  The flexnet folder also contains different sets of utilities for 32bit and 64bit platforms.

- Details of other issues provided in this release are located in the FIXES AND OTHER ISSUES section.

15.0.0 B04

- #5625   A new environment variable DWG_DRAWING_SCALE that is used by the EXPORT process to reflect the drawing scale as a multiplier of the current pattern-scale defined in the TABHATCH configuration file.

    Default value is DWG_DRAWING_SCALE=1.

  This setting is also applied to the export of the scale of Symbolic Hatches.

- The use of the Symbolic Hatch has been changed as described in the new "Symbolic Hatch.pdf" documentation file provided with the release notes.

  Symbolic hatch allows Eagle Hatch definitions to be interoperable with AutoCAD Hatch definitions. In particular this indicates the fact that the Hatch patterns will be derived from standard definition in AutoCAD and they will be rendered in the same way also inside the Eagle environment. Hatches can be modified in AutoCAD or in Eagle amd maintain their identity.

  Symbolic hatch using submodel pattern does not require improvements in the plotting systems.

  The use of the Symbolic Hatch is described in the "Symbolic Hatch.pdf" and Eagle Help documentation file provided with the release. Refer to this documentation for details.

  There are two new settings for the INI file:

      DWG_HATCH_FILE = <filename>   patterns configuration
      DWG_HATCH_ATTRIBUTE=<i>

- The RN value can be now also "zero" when the lower or upper bound is reached and there is no difference from the previous value.

- The fix #5605 means that that length of lines in the treeview data file may now be up to 256 characters.

- Details of other issues provided in this release are located in the FIXES AND OTHER ISSUES section.

15.0.0 B03

- Details of other issues provided in this release are located in the FIXES AND OTHER ISSUES section.

15.0.0 B02

- UNICODE is supported in this version.

- The message file is now used in source format and consequently the EAGLEMESSAGEFILE entry of the INI file must be set accordingly.

- [GAML] The CheckBox Button has now been addedto the RibbonBar. The relevant GAML syntax is as follows:

```
<RibbonButton Id="8" Command="tell mn,bn" Type="8" Mnemonic="?">
<CheckBoxButton Type="normal" Text="Male" default=true/>
</RibbonButton>
```

Where the type can be "normal" or "tristate".

- #5458 Eagle and all its utilities now support UNC Path names (ref. #5458). The Microsoft Windows UNC, short for Universal Naming Convention, specifies a common syntax to describe the location of a network resource, such as a shared file, directory, or printer.

The UNC syntax for Windows systems has the generic form:

```
\\ComputerName\SharedFolder\Resource
```

The use of UNC Path names is fully transparent to all Eagle command and configuration files. For details about UNC PATH specifications please refer to:

http://msdn.microsoft.com/en-us/library/gg465305(v=prot.10).aspx

- [#5330]. A new TILE type has been added to allow this fitting of an image to a face item, permitting zooming in and out the image tracking the zooming of the face.

The new type is defined as FIT. The following is an example of use:

tile 1=image.bmp,m=1,b=3,fit

The displayed image is keyed to the top left corner of the associated polygon.

If the ratio of the image is different from the ratio of the face to which it is associated then the ratio of the image has precedence and consequently the face can result be either "over-covered" or "under-covered" by the image.

- EXPORT: Additional parameters must be derived from new TABHATCH definition ref #5565 - a new TABHATCH.DAT file is required.

The new format is defined as follows:

\<name\> \<a\> \<b\> \<c\> \<d\> \<e\> \<f\>, where:

name	name of the hatch pattern
a	Eagle colour, for filled hatch
b	Eagle hatch index
c	scale of the pattern, for pre-defined hatch
d	spacing of the pattern, for user-defined hatch
e	angle of the pattern, for any hatch
f	boolean value to indicate if export using BLOCK_DEFINITION

For example:

```
ANSI31  -1  1   10      10      0   0
LINE    -1  2   10      10      30  0
ANSI32  -1  3   20      20      0   1
```

Note that to obtain an exact match between Eagle and AutoCAD line spacing, the values for "scale" and "spacing" should be set depending on the Eagle hatch definition and ACAD.PAT (for Imperial drawings) or ACADISO.PAT (for Metric drawings).

For example, if Eagle HATCH 2 is defined as:

HATCH 2=M5,30(10)

And the LINE hatch pattern in AutoCAD is defined as:

*LINE,Parallel horizontal lines

0, 0, 0, 0, 3.175

Then the proper entry for TABHATCH.DAT for exporting such hatch pattern is:

```
LINE        -1  2   3.1496  3.1496  30   0
```

In fact, (3.1496*3.175) is equal to (10), which is the scale value specified in the Eagle hatch.

Also, note that the value of "angle" must be referred to the default angle setting of the specified AutoCAD pattern. For example, considering that ANSI31 is defined with a default angle of 45, adding an angle value of 10 in the corresponding column of TABHATCH will cause a total angle of 55 degrees to be produced in the rendering.

- The CheckBox Button has now has the default attribute which was was previously missing.

  The relevant GAML syntax is:

  ```
  <RibbonButton Id="8" Command="tell mn,bn" Type="8" Mnemonic="?">
  <CheckBoxButton Type="normal" Text="Male" default="true"/>
  </RibbonButton>
  ```

  The default value for the "default" attribute is "false".

- [GUI][#5533.2]A new syntax for the RIBBON command for setting the state of a CheckBox button is available:

  RIBBON CLICK, POS=2, B=1, STATE=1 (true) or STATE=0 (false)

- [GUI] RIBBON: The Ribbonbar FileMenu "Exit" button returns

WT	12	The is the RibbonBar code
MN	-1	no menu
BN	-1	the Exit button

- To enable Fix #5587 (details in the FIXES AND OTHER ISSUES section) we introduced the following line to the INI file:

  PATCH5587=yes

  The default for this patch is "no" (disabled).

- Details of other issues provided in this release are located in the FIXES AND OTHER ISSUES section.

FIXES AND OTHER ISSUES

15.0.2 b04

- #5627   When FIRMWARE fonts were used, underline was incorrect when R<>1.

- #5795   There were cases when EXPORTing solid items caused the program to crash

- #5808   LIST command failed updating its contents for List of type 505.

- #5817   When firmware text was activated the annotation texts were shifted depending on the justification

- #5819   Firmware annotations were displayed incorrectly when R=1

15.0.2 b03

- #5802   The action associated to ROOT_SIZE_ACTION entry was not executed and a syntax error was produced

- #5809   There were cases when assigning incorrect position of a string variable returned non-null value, i.e. array[0] or array[len+1]

- #5810   When the length of the fetched value was longer than 60 characters the program crashed

- #5811   Assigning substring with index greater that 132 caused the program to crash

- #5815   LIST ADD=S<i> caused the program to crash when the text was longer that 132 characters

15.0.2 b02

- POLLING: Tabbing on radio buttons changed their status but didn't notify the change to the application, since POLLING didn't exit. The requested behaviour is not changing the status when tabbing and consequently polling must not exit.

- When "list_close_action" was set and a list was closed by selecting the delete-button, returned values for WT was incorrectly set to "5" instead of "6" and also RN now set to "-1"

- POLLING: The use of space-bar toggled the state of check-boxes and also exited polling.

- Polling didn't stop when using the function key F6

- #2991 Polling: the R=angle option didn't work

- #5787 EXPORT: There were cases when dimensions with no text caused the export process to crash.

- #5791 EXPORT: There were cases when multi-line annotations with long texts caused the export process to crash

- #5792 EXPORT: Linestyles defined by more than 2 couples of dash gaps were exported incorrectly.

15.0.2 b01

- #5769: LIST command produced extra unwanted printout

- #2991 Polling: the R=angle option didn't work

- Alignment to Eagle V.14.9.2/Build.04

- There were cases when tooltips were shown even if not defined in the TAB file for the corresponding button. Note: this happened when the same button had a tooltip in an earlier panel

- XPLOT: There were cases when PEN higher that 16 were handled incorrectly in the generated output file. NBB: A new Xplot V8.2.5 has been released

- #5712   HIDE command gave an error message and showed empty results on specific Ufos

- #5713 POLLING-ZOOM: there were cases when dynamic zoom/spin caused the system to hang. This happened on specific Ufos

- #5699.1 When "EXPORT_DIMENSION_TEXT_OVERRIDE=no" then Fix #5699 caused automatic-text dimensions to be exported incorrectly

- #5701.1 There were cases when the DO <command>,label did not work

- #5701.2 There were cases when the resolution of Environment Variables caused the program to crash.

- #5715   There were cases when creating the Quick-Access toolbar for the Ribbon caused the program to crash

- #5693   Preview for generated DXF/DWG file was no longer available, i.e. thumbnail image was not generated

- #5716   There were cases when POLLING Highlight caused the program to crash when used with annotations from data-file

- #5717   There were cases when the ONCHANGE action caused syntax errors

- #5711 The OPTION command caused a crash when datafile contained lines longer than 132 characters

- There were cases when OPENGL ON caused the program to crash. Note: this happened when solids with non-planar control faces are present (they come from Libeagle)

- EXPORT: there were cases when exporting IGES files caused the program to crash. Note: this happened when NULL vectors were present in the workspace

- When Menubar was active and GWindow was maximized then the system menu disappeared. Note that a similar problem happened when Ribbon was active

- There were cases when SELECT UF caused the program to hang

- There were cases when CONFLICT on volume failed finding the requested items. Note: this was depending on CW/CCW of the control polygon

- ENCODE: There were cases when the ENCODE command caused the program to crash. Comment: this was happening when the value to be encoded was bigger that 132 characters. Note: VS2012 showed the problem

- RIBBON: after RIBBON OFF, if the gwindow was maximized its buttons went on the Eagle caption or were invisible.

- #5668.1 Licensing issues occurring after failed execution and subsequent run issues resolved.

- #5668.2 Licensing issues occurring after failed execution, not answering to the prompt Yes/No and subsequent run issues resolved

- #5685 GET: there are conditions when this command produces the message "Indices are out of step"

- #5694 EXPORT: there were cases when exporting SAT files caused the program to crash. Note: this happened on specific cases of tee-junctions

- #5695 There were cases when adding annotations from file cause error messages "System restrictions. Cannot open logical unit ..."

- #5699 EXPORT: Aspect ratio for Dimension text was not exported correctly. Note: this is due to the fact that in ACAD width-factor is not directly applicable to dimension-text

- #5700 EXPORT: there were cases when exported submodels generated incorrect output

- #5668.2 Licensing issues resolved relating to failed run and subsequent run of system

- POLLING didn't stop when clicking on a list header in a list. In V12 POLLING stops and the os (outstring) contained columnid en RN=0.   This problem was linked to #5652 below.

- Polling exits only if MULTI_COLUMN_LIST_SORT=no

- #5652   LIST multi-column: if MULTI_COLUMN_LIST_SORT=no when click on headers then POLLING exits with LN=k, RN=0, WT=6, VB=1 for LIST and LN=RN=0 WT=5, MN=n, BN=m for a list button. The OS string contains the column index.

- #5685   GET: there were conditions when this command produced the message "Indices are out of step"
  The Fix #5685 is driven by a new environment variable. When setting the variable "PATCH5685=yes" the fix is active.

  The default is "PATCH5685=no"

- #5671   The FREEZE/UNFREEZE ALL command did not freeze/unfreeze the ribbon bar as expected.
  See #5672 - Use RIBBON FREEZE/UNFREEZE

- #5648.2 Select all lines in a multi-column list with LIST W=1,POS=-1 and deselect all lines with POS=-2 was not working and did not save into the L-file These problems are now obsolete since the introduction of the new primer DUMP=filename has been added to the LIST command.

- #5648.1 LIST POS=-2 did not select all rows as documented for single-column lists

- #5474   TABing on a checkbox and using the "space bar" to change state, then Polling does not exit

- #5639   RIBBON: When a null action is defined on combobox and checkbutton, the polling command didn't exit on the selection action

- #5668.1 Licensing issues occurring after failed execution and subsequent run issues resolved involving dongle usage.

- #5690   LIBUFO: There are cases when Ufos were created incorrectly, showing edges that should be silhouette edges but were always visible instead   A new Libufo V.1.4.6 has been released

- #4766.2 POLLING H sometimes did not work nicely. Specifically, when in GL mode the result was corrupted only when also GLMODE=EDGES

- #5554   OPENGL: Resolved WHERE P<i> after a SHOW did not show the model. SWITCH ON and SHOW was ok.

- #5159   There were cases when the CONFLICT command was very slow. Note: CLUMP on the same area is rather fast

- #5466   After adding a (string) variable to an existing var file, the string arrays which have been stored before lost their values.

- #5596   PROFILE: allocated array too small.

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- #5655   EXPORT: When exporting dimensions with multiple annotation lines the dimension text was opaque vs. the dimension line, making it only partially visible in ACAD.

  This fix #5655 is driven by an environment variable ion the configuration file. When setting the variable "PATCH5655=yes" the fix is active. The default is "PATCH5655=no".

- #5723   EXPORT: There were case when custom-dimensions were exported with incorrect arrows position

- #5724.1 Export: when exporting 2D Polylines the "Linetype generation" flag must be enabled, as it was in V12. The current result was that some dashed polylines were exported partially as dashed.

- #5737   IMPORT: There were cases when annotations from imported files contained extra unwanted characters in the text. Note that this was happening when importing DXF files from AVEVA.

  This fix #5737 is driven by an environment variable. When setting the variable "PATCH5737=yes" the fix is active. The default is "PATCH5737=no"

- #5766   EXPORT: There were cases when invalid faces caused this command to crash the program

- #5729   There were cases when the DECODE command caused the program to crash. Note: this happened when an empty substring were analyzed, i.e. "decode 'a , , b, c': s2,s3"

- #5730   There were cases when the EXPORT command caused the program to crash. Note: this happened when annotations with more than 256 characters were exported

- #5603   IMPORT: There were cases when IMPORT crashed. Comment: this happened when long names for LAYERS were defined in the DWG file. NCG-REF: C390

- #5740   EXPORT: There were cases when dimension arrows were not exported. Note: this happened when the environment variable EXPORT_POLYLINES was set to 2D_ONLY

- #5731   EXPORT: Actual line styles were not exported correctly

- #5739 GET: There were cases when models became corrupted under unknown circumstances. In such cases it might happen that part of the model is still usable (the one until the corruption point) while the remaining part was lost forever

- #5741 EXPORT: There were cases when exported dimension missed "small vertical lines" defined by means of AR1 or AR2 primers

- #5752 EXPORT: there were cases when exporting dimension caused the program to crash. Note: this happened when multi-line text with more than 256 characters were present.

- #5733 EXPORT: There were cases when exporting annotations with multiple lines produced misplaced text in ACAD. Note: this was due to annotations with angle of -180 deg.

  The fix is driven by an environment variable PATCH5733. When set the variable "PATCH5733=yes" the fix is active.

  The default is "PATCH5733=no"

- #5735 EXPORT: There were cases when exporting solid items caused invisible faces to be visible in ACAD.

- #5753 There were cases when selection/click on empty list caused an "Incorrect Parameter" error message

#5754 A multi column data file that had only one line to define the header gave a list with one list item

- #5759 There were cases when the IMPORT command crashed loading 2D polylines

- 5762 Polling: When OS string was greater than 132 characters the program crashed

- #5762.1 Assigning ST string with more than 132 characters caused the program crash

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- #5718 ONCHANGE action caused the message window to disappear

- #5719 There are cases when the IMPORT command caused the program to crash. This happened with long-names in anonymous blocks

- #5720 Default value didn't work for combo components in Gridview. Also, no data was shown at start in the combo and when selecting for the first time any element from the list the program produced an error.

- 5721 There were cases when the READ command caused the program to crash. This happened when try reading lines longer than 256 characters

- 5722 GWINDOW: There were cases when the action in GWINDOW_LOOSE_FOCUS or GWINDOW_GET_FOCUS caused the program to crash.

- There were cases when CLICK on a treeview caused exiting from polling. Note: this happened when CLICK was invoked during an action of GWINDOW_LOOSE_FOCUS or GWINDOW_GET_FOCUS

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- #5665 LibEagle: after EIF_reset_model() was used then any EIF_add fails. A new LibEagle V6.0.5 and LibUFO 2.03 have been released

- #5662 LibEagle: Conversion routines (CString vs. char) were not available as externals

- #5524 Export. There were cases when exporting horizontally placed dimensions produced a slight vertical shift in the dimension position. Note: this happened for DXF files, not DWG. Comment: NCG-REF: C380

- #5641 Plotting process didn't handle annotation transparency (ref. SET TEXTTRANSP). A new release XPLOT 8.1.2 and WINPLOT 3.1.1 is made available. Note : Starting from this versions, XPLOT V7 and WINPLOT V2 are obsolete and from now on, V14 and V15 will share the same executables

- #5643 FIRM T. Annotations were positioned incorrectly when FIRM T and justification was defined as RIGHT.

- #5660 When annotations with layer > 0 were exported and imported back, their position was slightly shifted.

- #5659 Winplot: There were cases when annotation angle was incorrect. Note: this happened when using windows fonts and angle was negative.

- #5675 RibbonBar: RIBBON REMOVE,POS=1 crashed (on XP only)

- #5681 The HELP command didn't work as before.

- #5682 Click: When using the "silent" primer, LN and RN were not set.

- #5683 Export: Special characters like Ø, °, ±, etc. are not exported correctly.

- #5668 Licensing issue with false positive unlicensed subsequent runs following initial execution failure.

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- #5625.1 The DWG_DRAWING_SCALE variable was not handled correctly when it was defined in the Windows environment more than in the Eagle INI file.

- #5629 RIBBON: options in a combobox didn't accept the form m(1,10) (message file)

- #5633 RIBBON: When keytip on multi-line were present that were defined using m(x,y) and ^strings, the program crashed

- #5634 RIBBON: When keytip contain references to m(x,y) with indices > 1000, the program crashed

- #5635 RIBBON: When an option in a combo was selected then the action was executed twice

- #5637 RIBBON: The "default" option on combo-box didn't work

- #5586.2 TreeView: INSERT ADDTREE didn't redraw the node "+" icon

- #5443.2 Spin controls: the first value of RN was -1 which was wrong

- #5636 RIBBON: when an option was selected from the GALLERY and its action included a RIBBON OFF followed by the definition of a new RIBBON then Eagle crashed

- #5621.1 RIBBON: when a gallery item is selected its action was executed before the application menu was removed; as a result Eagle crashes.

- #5642 The spin control was not working

- #5616.1 Treeview: after CLICK the context menu exited prematurely.

- #5640 The CLICK P=<n>,B=<n> didn't work for activating pages on TABBED panels

- #5647 Spin control to return -1 and +1 respectively also when selections go outside the range

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- #5473.1 CAMEO: extended fix #5473

- #5600 TreeView: a CLICK on a hidden and "already expanded" node does not scroll the treeview to view the selected node.

- #5600.1 TreeView: when the treeview loses the focus the selection colour is hardly visible

- #5605 TreeView: if the input data file lines are longer than 130 char then Eagle crashes   The new max length is 264

- #5606 TreeView: when the label didn't fit the tooltip was not shown

- Alignment with v.12.8 and V15

- #5443.1 Spin controls: button types 11,111,211,311 must return RN=-1 if button down and =1 if button up. Still sometimes happens that the returned value is wrong.   The RN value can be now also "zero" when the lower or upper bounds are reached and there is no difference from the previous value.

- #5616 Treeview: exit from polling loop whenever the selection changes.

- #5621 RIBBON: when a gallery item is selected its action is executed before the application menu is removed. Because of that Eagle crashes.

- #5620 RIBBON: removing a page containing a check box button, the operation terminates correctly but an error message (RibbonPage 1 not found) is printed in the message dialog.

- #5468.3 BAR ON flashes when PATCH5468=yes

- #5468.4 The context popup menu of the treeview was incorrect only when PATCH5468=yes

- #5617 Box border was slightly incorrect compared to the one in V12

- #5610 Annotation box is incorrect when using FIRM T, depending on the used Windows font

- #5615 Annotation justification is sometimes incorrect when using FIRM T

- #4601.1 Symbolic hatch implementation via System Attributes - At the moment "Symbolic Hatch" works on PLAN view only.

- #4601.2 Symbolic hatch definition should optionally reflect rotation on face item

- #new The EDU/EDUX versions sent an incorrect probe

- #5623 RIBBON: when selecting from the gallery the output values of POLLING were wrong

- #5623.1 RIBBON: when selecting from the gallery the ST value returned by POLLING was wrong

- #5624 When DDE ON and a DDE client is started (i.e. Acrobat) avoid notification messages in the dialog window. DDE notification messages now consider the SUP M directive

- #5579   EXPORT. Dashed lines in hatches which are exported as blocks (column 7 =1) are exported as continuous lines. NCG-REF: C385

15.0.0 b03

- #5604   Libufo. There were cases when the UIF_MakeFace hung. A new LibUFO 2.0.2 is released

- #5609   Ribbon. When .ico files were present in the keytip of QuickaccessToolbar the resulting keytip was incorrect

- #5611   Treeview:Click on Treeview with UID length bigger than 16 caused the program to crash

- #5613   Treeview: Polling OS on path with length > 132 was not handled

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- #5565   EXPORT: When exporting hatch definition, some parameters were incorrect: pen, layer, line style, and angle. Note: some of them must be derived from new TABHATCH definition and some of them from the Eagle HATCH definition – see notes above with the release.

- #5569   [GUI] RIBBON REMOVE didn't not present the current active page

- #5587   [EPI] Nested EPI_parseCommand() caused code after a POLLING to be executed prematurely. To enable this fix set PATCH5587=yes