

Hampson-Russell
A CGGVeritas Company

Software Release CE8/R1
Release Notes

(Last Revision: Jan 30, 2007)

Software Release Date: January 31, 2007

List of Products:

Product Name:	Features supplied and corresponding version numbers:			Comments:
AFI	afi	(3.0)		Requiring a pro3d (7.0) license
AVO	avo	(7.0)	geoview (5.0) elog (5.0)	Including a pro3d (7.0) license
eLOG	elog	(5.0)	geoview (5.0)	--
EMERGE	emerge	(5.0)	geoview (5.0) elog (5.0)	---
GLI3D	gli3d	(8.0)		Including a glipick (8.0) license
ISMap	ismap	(6.0)	geoview (5.0)	--
Pro4D	pro4d	(3.0)	geoview (5.0)	--
ProMC	promc	(2.0)	geoview (5.0)	--
STRATA	strata	(7.0)	geoview (5.0) elog (5.0)	Including a bstrata (7.0) Batch Inversion license.
GEOVIEW	geoview	(5.0)	seisloader (1.0)	Included in a geoview license. Please read a disclaimer notice below.
			view3d (1.0)	Included in a geoview license. Please read a disclaimer notice below.

List of New Features and Enhancements:

Summary

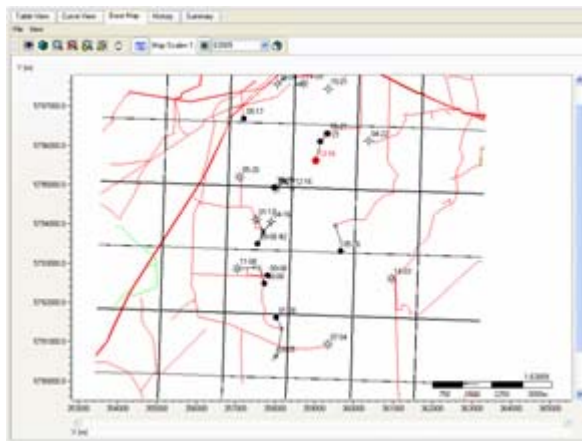
This list covers changes since CE7/R4.1 released in March 2006. Please see http://www.veritasdgc.com/vhr/software_updates for details of previous software updates. In this release, all programs will have access to a New Features presentation, an Adobe PDF file, from the Help button of the main window. That PDF presentation will give you a better picture of some of the advanced features listed below.

- The top geophysical highlight for CE8/R1 is definitely our new **Pre-Stack Inversion** in STRATA. All beta test results have given a very positive feedback.
- To make your life as a Hampson-Russell user much simpler, we are introducing a **SeisLoader** (Seismic Loader) module. SeisLoader provides an improved front-end for loading SEG-Y data, horizons and faults, and can be used to load data for AVO, STRATA, EMERGE and our other applications.

- To assist your interpretation, we have added a new 3D visualization program, **View3D**, which makes excellent use of the latest OpenGL technology for viewing SEG-Y and map data.
- We have added the highly requested Culture and Faults functions so you can see roads, towns, geographic boundaries and lease blocks on your maps, as well as fault interpretation on your seismic volumes.
- We have also improved the interactive cross-plot zone editing tool and implemented a log curve display template to make your life easy.

Details

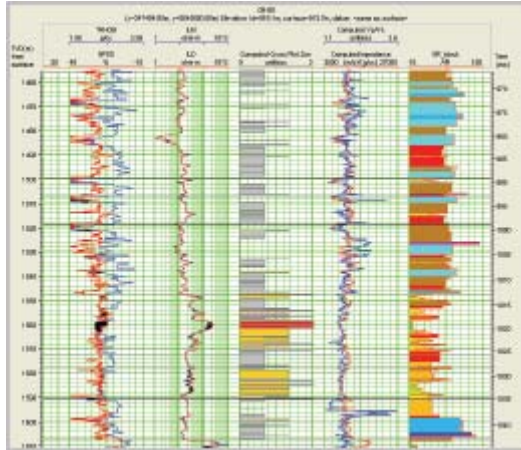
GEOVIEW



1. Added the import of culture data. Supporting DXF and Tobin formats. The culture data can be managed in the Well Explorer of GeoView and can be displayed in all maps. (#613)
2. Improved Well-Log-Exchange user interface for OpenWorks.
3. Added an option to import files with well locations only (i.e. well spots). (#876, #1450)
4. Added an option to import tops for multiple wells simultaneously. (#788)
5. Tops with spaces in the names can now be imported properly. (#385)
6. Added the optional minimum curvature calculation of TVD for a deviated well path when using dip and azimuth survey data. (#128)
7. Added an option to specify a Seismic Reference datum. (#598, #717)
8. Added a well and curve history display in Well Explorer.
9. Added an option to remember the display column selections in the Summary page of the Well Explorer.
10. Corrected a problem when you specify a wrong column while importing deviated geometry from a text file. (#1475)
11. Allowed the export of deviated geometry without having to export any log curve. (#351)
12. Provided an option to remove a non-existing entry in the list of previously opened databases under the "Database" pull-down button in GeoView. (#1514)
13. Corrected an issue when exporting a log in LAS with uniform resampling and when the log has a huge spike. (#1542)
14. Added an option to fit or to optimize the base map to the current window size. (#1554)
15. Added a map scale in the Base Map display of GeoView.
16. Corrected miscellaneous minor issues for making CGM hardcopies. (#1689)

17. Added the ability to show the amplitude at the cursor position in addition to on the curve in the CurveView display of the Well Explorer. (#83)
18. Annotated the depth label TVD or MD as needed in the Table View of log data. (#1729)
19. Added an editable UWI column in the Table View of the Well Explorer for the purpose of exporting wells back to OpenWorks.

eLOG



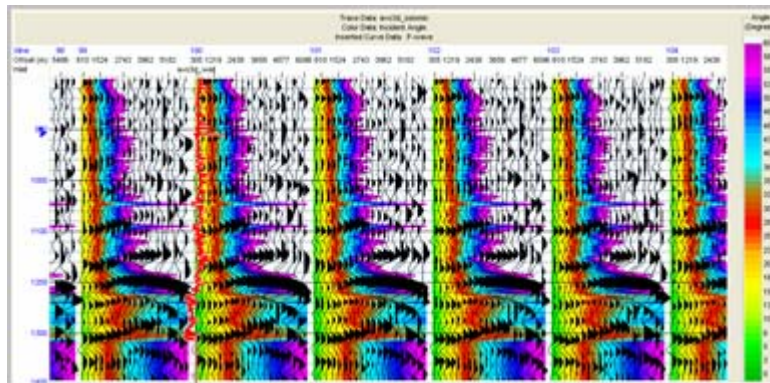
20. Added the ability to save log track orders, amplitude range settings and other display parameters as a viewing template, and to reuse them from well to well. (#277, #608)
21. Support saving and reloading different viewing templates. (#1105)
22. Added color-fill capabilities for curves and volumetric logs display.
23. Added the ability to display seismic attributes, such as the amplitude envelope, in color.
24. Gave explicit control on the order of the curves being plotted within a track. (#782)
25. Can display the computed Cross Plot Zones as an actual curve or as color background.
26. Keep track of history in most curve processing and editing options. Added an option to view and edit the curve history information using Logs/Show Log Tables/History option.
27. Added wavelet display and wavelet phase rotation scanning option in the cross-correlation plot of Log Correlation. (#852, #1551)
28. Improved Log Correlation with an automatic fine-tuning time shift suggestion.
29. Can display log correlations for depth domain data.
30. Added a transformation option and easy cross plotting of Vp/Vs Ratio and LMR logs.
31. Added options to export synthetic and composite traces to Geoview as log curves. (#576)
32. Added a Seismic Reference Datum line in the Log Display window.
33. Can better control the start domain on the display. (#326)
34. Corrected the offset unit label annotation (feet vs meters) in the composite trace extraction dialog. (#1295)
35. Log Correlation and Check-shot Correction are now defaulted to change the depth-time table instead of "apply relative change". (#1335)
36. Added the option to select which tops to plot. (#761)
37. In the Seismic View table of the View Parameters dialog, the Add All button did not work. This is now corrected. (#1625)

38. Fixed the problem of not being able to delete individual horizons off the display. (#1645)
39. Fixed a unit conversion problem in Elastic Impedance Transform. (#1691)

Fluid Replacement Modeling (FRM)

40. Added a 3-phase fluid calculation.
41. Improved the interface and added extra options in Fluid calculator: graph page, CO₂, Butler Bubble point calculations and Brie patchy saturation.
42. Corrected a problem in "Copy Input" or "Interpolate" data in error zones. (#622)
43. Corrected a problem with domain unit conversion when mixed. (#907)
44. Corrected a possible scenario of creating a spike in the Greenberg-Castagna equation due to certain data condition. (#1378)

AVO



AVO Analysis and Processing:

45. Added an incident angle display in the processing window. (#98)
46. Can process depth domain gathers in Angle Gather, AVO attributes and Super Gather options.
47. Improved the AVO Offset Scaling.
48. Enhanced the pick analysis options for both amplitudes and gradients.
49. Corrected a problem in the Pre-stack Pick Analysis plot (curves shown under the seismic view) when using the option to re-extract amplitude from the current displayed seismic. It did not use the individual offset pick times but wrongly used the average. (#1547)
50. Corrected the problem with ignoring the velocity smoother length in the Pre-stack Pick Analysis plot (curves shown under the seismic view). (#1744)
51. Installed a better warning message and fixed an error in checking ranges when using a SEG-Y file as velocity. (#1012)

See also the GENERAL section below for seismic data handling and other general improvements.

AVO Modeling:

52. Improved the Rock Physics Template.

53. Added Systematic Synthetic modeling of 3-phase fluids variations.
54. Added an option to output only offset reflectivity (without a wavelet) in AVO Synthetics.
55. Can now output AVO Synthetics in the depth domain.
56. Allowed a selection of wavelet at the AVO Synthetic generation dialogs.
57. Fixed a problem in anisotropic modeling (#110)
58. Fixed a problem in entering Q value in Elastic Wave modeling (#133)
59. Fixed a problem in mixing 2D and 3D picks together in the Pick Analysis window.
60. Added a warning message when the active p-wave is not currently shown while generating AVO synthetics. (#1183)
61. In AVO Synthetic 3D volume generation, corrected the problems where offset range could not be specified in feet and target zone could not be in time, and corrected a small discrepancy between this and the single well synthetic generation. (#1750)
62. In Elastic Wave modeling at large offsets, the mute function is redesigned to leave the refraction events untouched. (#1752)
63. Show the list of wells in the alphabetical order under the Modelling/Single Well dialog.

See also eLOG section above for more log curves related editing and FRM.

EMERGE

64. Added XY-coordinates as an internal attribute selection. (#1097)
65. Allowed the application of internal attributes to the input logs in the log-to-log prediction. (#1746)
66. The Emerge/Apply option now defaults to the correct output volume type and keeps track of the output amplitude units. (#1552)
67. Corrected the option to set a constant output value outside the target window for Classification networks. (#1561)
68. Clarified the units in the Set Parameters dialog for Attribute Calculations. (#1783)

See also the GENERAL section below for seismic data handling and other general improvements.

GLI3D

69. Improved the logic of the statics computation dialog.
70. Fixed the number of layers to compute statics.
71. Allowed loading of an external Tomo model. (#842)
72. Import and export of tomographic grid models finalized. ASCII and SEG Y files.
73. Improved the User Guide for 3D data.

ISMAP

74. Improved the Emerge Analysis option.

75. Added contouring for all maps.
76. Can plot more data in the well log cross section window. (#1310)
77. Fixed an error in saving the rotated map as a data slice within a project. (#1501)
78. Can now save the well data table as a text file. (#1363)
79. Can now save well-seismic cross plot data including well names and XY's. (#1593)
80. Corrected a blank output from the cross-validation option when wells were not exactly at live grid locations. (#1598)
81. Corrected a problem in color plotting of the amplitude of the wells in the Error plots obtained from the Kriging operations. (#1784)
82. Corrected a limitation on the displayed correlation coefficients in the data list being different from the value reported in a cross plot window. (#1808)

See also the GENERAL section below for seismic data handling and other general improvements.

PRO4D

83. Added Systematic Synthetic modeling of 3-phase fluids variations.

See eLOG above for some items related to well log editing and FRM.

84. In the Amplitude Normalization option, added the ability to exclude spatial zones and time window for the global RMS scaler estimation.
85. In Shaping Filter, added a zero phase wavelet matching option.

Time Variant Time Shifts Correction

86. Added a cross-plot of cross-correlation coefficients vs cross-correlation time shifts for thresholds definition.
87. Added a distribution density display of data points in the cross-correlation vs time shifts cross plot.
88. Added spatial interpolation and smoothing of a time shifts cube.
89. Allowed QC of a conditioned time shifts cube before application.
90. Extended to allow the processing of a Super Volume Group.

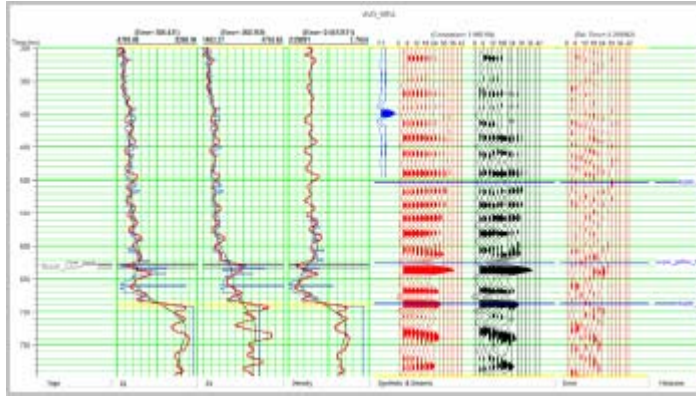
See also the GENERAL section below for seismic data handling and other general improvements.

PROMC

91. Improved FRM. Please see the eLOG section above for details.
92. Can now display a deviated well with its well head outside the survey.
93. Fixed an error with the arbitrary line calculation for ProMC.
94. Fixed an issue with PS edited logs.
95. Developed Strata Modeling for domain conversion in ProMC.
96. Handles single and multiple 2D lines properly and can easily create velocity volumes.

See also the *GENERAL* section below for seismic data handling including *Multiple-2D Lines* and other general improvements, and see *eLOG* above for items related to well log editing and improved *FRM*.

STRATA

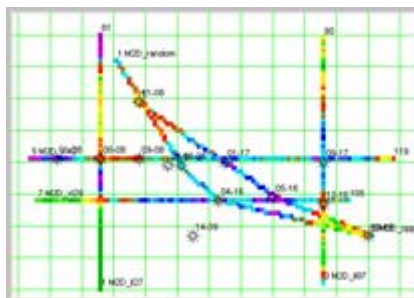


97. Added Pre-Stack Inversion for angle gathers and angle stacks.
98. Improved Inversion Analysis, for most post-stack and pre-stack inversion methods.
99. Improved Colored Inversion with automatic phase rotation and improved the spectrum plot of the operator.
100. Improved multiple 2D lines capability for Strata Modeling and for Inversion.
101. The default maximum impedance changes in Model Based Inversion are now +/- 100%. (#1581)

See also the *GENERAL* section below for seismic data handling and other general improvements, and see *eLOG* above for some items related to well log editing.

GENERAL

Multiple 2D Lines Handling:



102. Improved the loading of multiple 2D SEG-Y files using XY coordinates from the trace headers.
103. Added multiple 2D lines horizon group handling.
104. Allowed interactive picking on multiple 2D lines horizon group effectively.

105. Can import multiple horizon files using XY coordinates to match 2D lines.
106. Can cut the data slices from multiple 2D lines data sets.
107. Handles the plotting of multiple 2D lines in all map displays including cursor tracking.
108. Can build Strata Model for multiple 2D lines.
109. Can now create velocity volumes properly for 2D lines.
110. Can export seismic traces for multiple 2D lines.

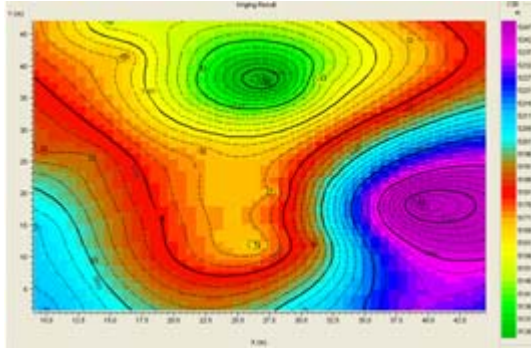
Seismic Display:

111. Can insert multiple log curve types on a seismic section. (#166)
112. Can project a deviated well along a 2D line or an arbitrary line on the seismic window. (#252)
113. Added an option to lock a panner image when scrolling or jumping lines. (#1629)
114. Added more trace and domain annotation controls.
115. Now have the option to pad empty bins when viewing 3D data. (#1677)
116. Added an option to plot faults intercepting lines onto seismic sections when the faults are loaded in SeisLoader.
117. Improved loading and viewing of seismic data in the depth domain.
118. Changed the display such that the domain type and unit will be picked up from the data volume being shown. (#1356)
119. Now default to insert a well log near the line with a capture distance instead of exactly on the line. (#237)
120. When inserting well with the log type missing, the position will be replaced by a line of well path instead of not showing any line. (#266)
121. Added the option to control the width of an inserted item for deviated wells. (#476)
122. Software now tries to match and convert the amplitude unit of the inserted color item with that of the color data volume being shown. (#1552)
123. Changed the default number of colors for all default color schemes to 50. (#1367)
124. Added a prompt for handling the color key when the color data is out of range. (#1371)

Horizons Handling:

125. Added the option to display the picks at trace center or on the actual amplitude. Changed the default to display at center when picking structures. (#1337)
126. In interactive horizon picking, the reset/cancel option did not work if the auto-save flag was turned off by the user. This problem is now corrected. (#1583)
127. When importing multiple horizon files by XY coordinates, only the first file was read. This problem is now corrected. (#1622)
128. Accepted attribute maps from SeisWorks as horizons. (#1688)

Map display:



- 129. Added an option to overlay culture data (loaded in GeoView) onto all maps.
- 130. Added contouring for all gridded horizons and data slices.
- 131. Allowed contouring the structure on top of an attribute map. (#1162)
- 132. Can now overlay fault-intercepting lines with horizons or data slices.

Cross-plot Display:

- 133. Further improved the interactive editing of cross plot zones. Allows multiple undo/redo in zone editing. (#1563)
- 134. Can now save and restore cross plot data and window settings.
- 135. Added regression line error bounds and printed the correlation coefficient values. (#939)
- 136. Fixed a problem that the values of XY axes were not updated after making a New Plot from the sidebar. (#1572)
- 137. The New Zone option in zones editing will now remember the previously selected zone type instead of resetting the selection back to ellipse. (#1680)
- 138. Added the option to plot the zones above or behind the data points. (#1687)
- 139. Changed the error display label on the main window to a normalized value. (#1751)

Wavelet Operations:

- 140. Added the option to remove any time shift from the output wavelets in Wavelet Extraction using Wells with the Constant Phase option. (#1341)
- 141. Improved the Set Current Wavelet option and allowed multiple wavelets to be plotted together. (#1518)
- 142. Displayed horizons, along with tops, in the Multi-well Wavelet analysis and handles deviated wells.
- 143. Removed a redundant time window specification in the dialog for the wavelet extraction option using wells. (#936)
- 144. Corrected label annotations from offset to angle when extracting a wavelet from angle data. (#537)
- 145. Can remember the user specified wavelet display ranges. (#662)

Processing Options:

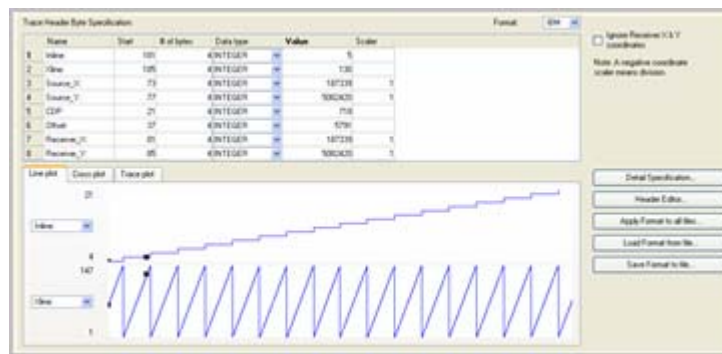
- 146. Added a convolution operator as a utility process. (#283)
- 147. Added a convenient EBCDIC header editor on the History display. (#605)
- 148. Modified the Angle Gather calculation to effectively bin all input angles which contribute to a desired output angle. (#1496)

- 149. Increased the mute offset limitation to more than 100 km and improved the interpolation algorithm. (#1656)
- 150. Provided warning messages if you are trying to input angle data to processes like Angle Gather, Common Angle Stack or Range Limited Stack with the Angle option. (#1795)
- 151. The Export Seismic Trace option no longer ignores the specified domain ranges. (#1832)
- 152. Export Seismic Trace into well log database allows entering the amplitude units.

Project Data Handling:

- 153. No longer deletes the referenced seg-y files from the Seismic Window Session dialog. Now only the Data Manager can delete data. When deleting data using the Data Manager, you can either delete permanently or keep the actual seg-y files and just remove all the references of the data in the current project. (#1503)
- 154. Removing a data volume reference from the Project Data List will also remove the corresponding window in the Window Session List automatically. (#1692)
- 155. Corrected a problem with accessing files on the Windows system using the Universal Naming Convention (UNC). (#1693)

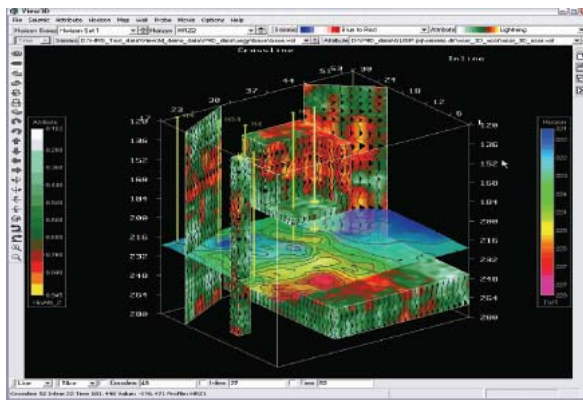
SeisLoader (New!)



- 156. Provided a new seismic data loading and interpretation front end tools.
- 157. Improved SEG-Y loading with graphical trace header viewing.
- 158. Can now edit the SEG-Y EBCDIC, line and trace headers.
- 159. Can now test load a limited number of traces for such purposes as QC-ing the loading parameters for a huge file.
- 160. Can load data volume with amplitude type and unit specifications. (#1765)
- 161. Included Copy and Trace Mix processes with advanced options like applying restricted zones.
- 162. Included a Super Gather process with a new Alpha Trim option.
- 163. Provide a better horizon management and loading interfaces, both from files and from SeisWorks.
- 164. Can now load horizons from another project. (#297)
- 165. Can import pre-stack offset picks.
- 166. Can manipulate the output text format of output horizons. (#545)
- 167. Can output pick domain and amplitude together in a single text file. (#1468)
- 168. Changed the default export columns to inline first xline second. (#1654)
- 169. Added loading and management of faults. Supports Landmark and GeoQuest text format.
- 170. Provide a faster seismic display with instance scroll.
- 171. Allow up to three seismic views in either vertical or horizontal arrangement.

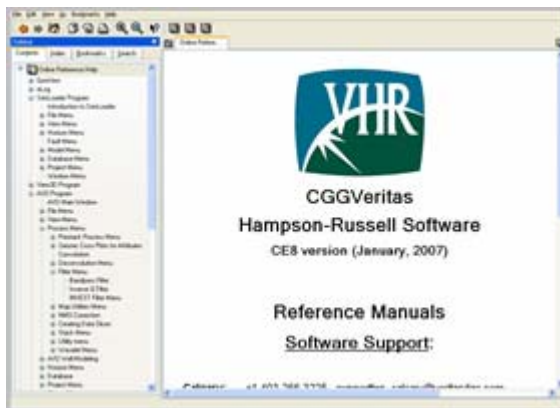
- 172. Improved seismic Color Key editor. (#1314, #1315)
- 173. Allowed user input for the company name in CGM hardcopy. (#485)

VIEW3D (New!)



- 174. Pick up any existing project and display the SEG-Y volumes, map surfaces, and well log data in perspective 3D using OpenGL technology.
- 175. Available on Windows (32-bit), Linux (64-bit) and Solaris (64-bit) platforms.

Hampson-Russell Assistant (New!)



176. Provided the Hampson-Russell Assistant, a complete new interactive on-line help with an index and search function that is available for all platforms.
177. A Theory section linked to the Reference Manuals provides detailed information needed.

FTP Download

The software installation images can be found at our ftp sites. Please visit http://www.veritasdgc.com/vhr/software_download for instructions and details.

CD and Package Labels

<i>Platform</i>	<i>Version</i>	<i>Date Label</i>
SUN / Solaris	CE8/R1	Jan. 31, 2007
SGI / IRIX	CE8/R1	Jan. 31, 2007
LINUX / Red Hat	CE8/R1	Jan. 31, 2007
PC / Windows	CE8/R1	Jan. 31, 2007

Compilation Dates

<i>Executable/Module</i>	<i>Solaris</i>	<i>IRIX</i>	<i>Linux</i>	<i>Windows</i>
AFI	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
AVO	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
eLOG	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
EMERGE	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
GEOVIEW(32-bit)	Jan.30, 2007	Jan.29, 2007	Jan.30, 2007	Jan.29, 2007
GEOVIEW(64-bit)	Jan.30, 2007	Not Available	Jan.30, 2007	Not Available
logdialog	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
GLI3D	Jan.25, 2007	Jan.25,2007	Jan.25, 2007	Not Available
ISMap	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
ismapEmerge	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
PRO4D	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
PROMC	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
SeisLoader(32-bit)	Jan.30, 2007	Jan.29, 2007	Jan.29, 2007	Jan.29, 2007
SeisLoader(64-bit)	Jan.30, 2007	Not Available	Jan.30, 2007	Not Available
STRATA	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
strataBatch(32-bit)	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007	Jan.24, 2007
strataBatch(64-bit)	Jan.24, 2007	Not Available	Jan.23, 2007	Not Available

View3D (32-bit)	Not Available	Not Available	Not Available	Jan.24, 2007
View3D (64-bit)	Jan.24, 2007	Not Available	Jan.23, 2007	Not Available
swsv (SeisWorks) Emerald City R2003.12	Jan. 4, 2007	Jan. 30, 2007	Jan. 4, 2007	Not Available
WLEx (OpenWorks) Emerald City R2003.12	Jan. 30, 2007	Jan. 30, 2007	Jan. 30, 2007	Not Available
WLEx (GeoFrame) 3.8.1	Oct. 24, 2004	Not Available	Not Available	Not Available
WLEx (GeoFrame) 4.0.2	Feb. 1, 2006	Not Available	Not Available	Not Available
WLEx (GeoFrame) 4.04	Feb. 1, 2006	Not Available	Not Available	Not Available
WLEX (GeoFrame) 4.2	Feb. 1, 2006	Not Available	Feb. 1, 2006	Not Available
OpenSpirit Version Supported	2.5, 2.6 & 2.7	Not Available	2.5, 2.6 & 2.7	2.6 & 2.7
OpenSpirit Version Compiled (Hampson-Russell client side)	2.7	Not Available	2.4	2.7
FlexLM Applications (geoview, avo, etc.)	8.1b	8.1b	9.5	8.1b
FlexLM License Manager (Hamp-Russ, and lmgrd package)	8.1b	8.1b	9.5 Red Hat only	8.1b
	Solaris	IRIX	Linux	Windows
Adobe (Arcobat) Reader is no longer included.				

Disclaimer for SeisLoader and View3D:

SeisLoader is one of the many new features added to the Hampson-Russell suite of software for the CE8R1 release. However, we specifically limit the licensing of SeisLoader to the CE8 release only due to the nature of this product. Although we think you will find SeisLoader to be an excellent addition to our product line, allowing for simplified data loading, viewing, and interpretation, SeisLoader is currently a prototype for the new seismic interpretation interface for all of our products.

We hope that you will use, enjoy and provide feedback on the interface over the coming months, providing us with the information to refine the design and incorporate your ideas. The new seismic interpretation interface will be incorporated into our main product lines and SeisLoader as a stand-alone utility will be removed in the CE9 release.

Similarly, View3D is a visualization tool and will be incorporated into all the products gradually over time.