UC-SDRL Research Software: Frequently Asked Questions (FAQs)

What is X-Modal?

X-Modal is a collection of Matlab based scripts that represents the evolution of over thirty five years of development at the UC-SDRL, starting with Fortran and machine language software in 1975. The X-Modal software has two primary components: 1) Modal analysis software based upon frequency response functions (FRFs), transient decay or power spectra (PS) utilizing measured data in universal file format(UFF). 2) Data acqusition software based upon a limited set of hardware from HP, Agilent and VTI Instruments.

The software is currently distributed as a standalone "EXE" module with an embedded Matlab computational engine in the Windows (64 bit) environments. Software (without data acquisition capabilities) is currently available in both Linux and Apple environments.

Information concerning the modal analysis portion of the X-Modal software can be found in some detail on the UC-SDRL web site. On the internet, go to the UC-SDRL Homepage (http://www.sdrl.uc.edu). From there, use the navigation drop-down menu (Research Software -> X-Modal Software Project). At this location, you will have access to the video tutorials and most information that you might need. If you have specific questions, you can always email to sdrl-software@uc.edu. You should be contacted via email in 24-48 hours during the business week.

Right now, limited information about the data acquisition module has been added to the web site. The web site does have initial video tutorials that give a relatively complete picture of the capabilities. At present, the software supports impact FRF, MIMO FRF shaker excitation, power spectra and time capture operational modes, all storing the results in UFF format. Currently, the older HP-356x hardware is supported under GPIB-USB interface, the current HP/Agilent/VTI Instruments 143x hardware is supported under both Firewire and internet interface. New hardware from the VTI Instrument's Sentinel family of hardware is in early release, supporting data streaming and multiple mainframe synchronization along with large channel counts. Other hardware may be supported in the future based upon user interest and support through the UC-SDRL Consortium User Program.

How can I get the software?

The software is available under a license and an annual Maintenance/Distribution Fee.

What is the license situation?

There is now only one license that must be accepted to run any software from UC-SDRL (In the past, there was a separate license for X-Modal and X-Acquisition). This license is the UC-SDRL Research Software License.

What does the license cover?

The license basically says you can use the software for any purpose but cannot pass it on to anyone else, reverse engineer it, etc. The license also limits our liability to the cost of the license (which is the common liability limit for all software sold just about anywhere in the world).

What does the license cost?

The license does not cost anything. However, the license must be accepted before any software will be distributed.

How do I agree to the license?

On the internet, go to the UC-SDRL Homepage (http://www.sdrl.uc.edu). From there, use the navigation drop-down menu (Research Software -> Software Licences). The Software License page will give more details and allow you to download a PDF form of any license agreement. If you are interested in a Single User License, you can click on a hot link to go to that page, accept the terms and conditions and fill out an information form that will initiate the process. You should be contacted via email in 24-48 hours during the business week.

If you want any other license (Multiple User (up to 16 users), Educational User (up to 32 users per license) or Enterprise (unlimited number of users at one site, access to source and local license control, etc.) License), you must download the license from the UC-SDRL web site in PDF form. Two PAPER copies of this license must be printed, filled out and signed by whatever legal authority your organization requires. The two copies (yes both of them) must be mailed to us. Both copies will then be signed by our legal authority and one copy will be returned to you. These licenses cover your organization and any violation of the terms of the license goes back to your organization.

If you are interested in becoming a Consortium Member (software development contributor with software benefits), please review the UC-SDRL Research Software Consortium agreement on the UC-SDRL website. You can always send email to sdrl-license@uc.edu or sdrl-consortium@uc.edu to get specific questions answered. You should receive a reply within 24-48 hours during the business week.

OK but how do I get the software?

To get the software, there is a cost which is in the form of an annual Maintenance/Distribution Fee. This Fee varies with the License but gives you the access to download the software and use the software indefinitely. For the period of one year, you will be notified via email and be able to download any new release of the software, change the PC that runs the software, etc. The software will be periodically updated to fix bugs and to add new features. We will try to answer questions via email or telephone. If you need further assistance, you may want to consider hiring a graduate student as a tutor to get you started. At the end of one year, we hope you will add another year of the Maintenance/Distribution Fee so that you will continue to have access to these support activities.

However, there is no requirement to pay the Fee continuously. If you are happy with what you have, you are free to continue to use it forever, as is. When you need an update of the software, or a change to a new computer, you will need to pay the Fee to get back on "support". There will not be any back payment or penalty involved with restarting the support. The Maintenance/Distribution Fees may change in the future but the business model is to keep the fees relatively low. Multi-year fees may be paid to lock in the current fee structure. If you want or need access to Matlab source software (scripts), this requires the Enterprise License with a significantly higher Maintenance/Distribution Fee.

What is included in the software?

The software download includes an executable (64 bit) of the latest version of X-Modal together with an execute only version of Matlab. Therefore, you do not need to have a separate version of Matlab to run X-Modal. The latest version of X-Modal is Version 3.4 which includes embedded data acquisition capability (the old X-Acquisition). Data acquisition is supported on the older HP-3565X hardware via a GP-IB interface, on the Agilent/VTI VXI 143X hardware via Fire-Wire or internet, on ADC Throughput data taken with DAC Express, or with the new VTI Instruments Sentinel hardware. Other hardware may be supported in the future based upon user interest. In the past, additional hardware support has originated through Consortium Users and the UC-SDRL Consortium.

How is access to the software controlled?

As part of the License and Maintenance/Distribution Fee submission, you will need to supply the MAC address for each user via an Excel Information File, available from the web site. This MAC address will be used to generate a password for the software in the form of a text file ('codeword.sec'). The user is prompted to load this file during software installation.

What is in the X-Modal software package?

The easiest way to see what is available is to go to the UC-SDRL web site and view the video tutorials. Each tutorial is a 10-15 minute video tutorial of some aspect of the program and shows how to use that capability. Right now, video tutorials are only available for the data organization, data presentation (FRFs, wireframe geometry and animated mode shapes) and experimental modal analysis parameter estimation. Video tutorials for the data acquisition as well as updates to the other videos are available. A completely new set of video tutorials will be provided in the near future. In general, the software includes everything that is needed to estimate modal parameters from experimental data along with the ability to estimate the required experimental FRF data using impact testing with multiple references and/or MIMO shaker excitation on a limited set of hardware choices. The software also includes the ability to capture general power spectra data and long time records. Long time records can be post-processed using the data acquisition module as well.

OK, what does the Maintenance/Distribution Fee cost?

The current structure of the Maintenance/Distribution Fees are as follows: Single User $1,250 (US$) per year, Educational User License at $1250 (US$) per year, Multiple User Licenses at $3,750 (US$) per year and Consortium Memberbership at $7,500 (US$) per year.

Why is the software embedded as an executable with Matlab?

Most users don't really use the source version that we provided in the past. Some users do not want a version in their organization that can be altered by accident or via malicious intent. The embedded Matlab provides a degree of software security for us and makes sure that the correct version of Matlab is utilized and has been properly checked for version problems. This also provides a cost savings to the end user, particularly if a number of licenses are involved. We will work with any user to provide customized scripts that can interface to the X-Modal software. If you really need source, there is the Enterprise User License. With the demise of some software providers, we can understand the need for source by end users. This does create a version compatibility problem with Matlab if Maintenance/Distribution Fees are not current and the user updates their version of Matlab.

I have Matlab, does that benefit me in any way?

Yes, you will be able to use your copy of Matlab on data exported in Matlab format rather than UFF data format to develop scripts that are specialized to your needs. This can include data processing and analysis, modal parameter estimation, data presentation, etc. Much of the common data (FRFs, power spectra, time data, modal parameters, geometry and wireframe connectivity, etc.) can be exported directly to a Matlab format. Recently we have added further data export that includes internal data from the modal parameter estimation algorithms that can be used to evaluate your own modal parameter estimation development. These features are used by graduate students at the University to enable them to work on special research activities. Some of these research projects eventually become modules in the distributable X-Modal software package.

How do I find the MAC Address needed for the software password?

To generate the password (code word) file, we will need the wired MAC address of the PC where you plan to run the software (even if the wired internet is not connected). To get this information for each computer:

The MAC address can be retrieved using the 'ipconfig' or ipconfig /all' command from the Command Prompt window. The MAC Address of hard wired Ethernet connection (12 digit hex number returned by the "ipconfig /all" command in a Command Prompt window is what we use to lock the software to a specific computer. You need the physical address for the 'Ethernet adapter Local Area Connection', i.e. xx-xx-xx-xx-xx-xx) .

Can I upgrade or change my license?

Yes you can change between licenses if the proper license agreement is in place. If you start with a Single User license with the "Click-Through" agreement, once you file the signed paper copies of the licenses, we can change the license and, once you pay the difference in the Maintenance/Distribution Fee if different, you can add/change users accordingly. Note the original start date of the Maintenance/Distribution Fee will not change.

Can I upgrade the computer where I run X-Modal?

Yes but only if you have a current Maintenance/Distribution Fee. If you are outside the 12 month period of your support, you must pay for a new Maintenance/Distribution Fee to be able to change to a new computer.

Can I get a Trial Copy of the software?

Trial copies are available for a short time period (typically 45 days), subject to a license agreement, to users that have a realistic need. Trial copies are a courtesy but are not automatic. Trial copies require a certain amount of time commitment on our part and you will need to make a good case in your request.

For More Information:

For more information and/or details concerning UC-SDRL research software, please contact:

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