Sesam™ 2011 DVD Release Release Notes - August 2011

DNV Software releases new versions of the Sesam product packages DeepC, GeniE and HydroD

The new versions of DeepC, GeniE and HydroD focus on providing more flexibility in performing design analyses and on giving our users more advanced analysis options to fine-tune the design. We have increased Sesam's coverage to also include design of umbilicals.

"The continuous investments in Sesam lead to new and improved products that help our customers become even more productive," says Ole Jan Nekstad, Sesam Product Manager.

Hereby, we thank you for your continuous support to Sesam. Your feedback is important to us. If you have any suggestions, questions or problems please send an email to: software.support@dnv.com or contact our local support.

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1 Release overview

The Sesam™ 2011 DVD is a major release of several Sesam applications. It contains many new features that will lead to improved efficiency and opens for additional analysis work that was not possible to do in previous versions of Sesam. Furthermore, Sesam now fully supports the operating system Windows 7 in addition to Windows XP (32 and 64 bit versions). As a consequence, we have made a new Application Version Manager (AVM) that controls the location of multiple Sesam installations. Since Microsoft has discontinued the database MSDE (a light version of SQL) on Windows 7 it was necessary for us to use a new database technology for Sesam Explorer (earlier known as Brix Explorer – Sesam Configuration) on Win 7 (SQL Express 2008).

All applications are now installed to version dependent folder names, thus making it possible to have parallel installations of the same product. The new installation may co-exist with an old Sesam 2008 DVD installation, since the files for this DVD release are installed to new locations. The new installation setup has been a prerequisite for smooth operation on the Windows 7 operative system, where the security regime prevents the user from manually copying files into the C:/Program files/… folder structure. The new structure will make it easier for the user to update individual programs in the time between major releases of the Sesam system.

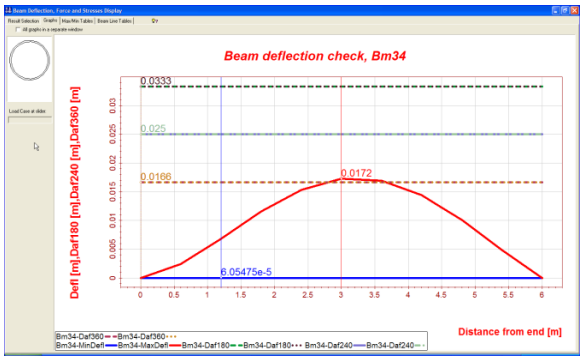
This means that you are required to install the new Application Version Manager (AVM) to control the path for each Sesam application – this is the default installation option. If you are using Win 7 you also need to install Sesam Explorer for Win 7. We have upgraded our licensing system to a new version of FlexLM 11.5 and the DVD installation set-up will by default replace the previous licensing system on your computer.

In the following you can read about the main new features, how to upgrade models and learn more about the AVM and the special version of Sesam Explorer for Win 7. Detailed update information for each Sesam application can be found from our new Customer Portal. A quick guide to find and use the Customer Portal is also part of these release notes.

The Sesam DVD (as well as the individual programs) can be downloaded from our website https://projects.dnv.com/sesam/download/windows/programs.html or the Customer Portal. We recommend you to install from the DVD set-up and not program by program because of the AVM and the updated license manager.

1.1 GeniE v5.3 main benefits

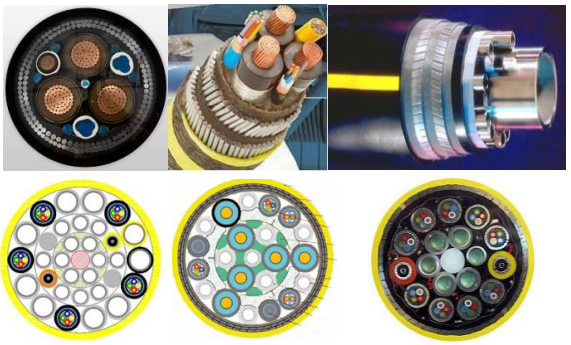
The main focus of this release has been to ease the work when doing beam deflection reporting and when modelling complex surfaces. Another main reason for the release has been to allow for import of old frame models and results to do result presentation and code checking in GeniE - a typical example of such is the import of data from existing SRS (structural reanalysis systems). Finally, we have made the code checking more flexible. To better support design requirements, users will now have the possibility of not strictly following the interpretations as given by the various statutory regulations, which can be over conservative.



1.2 DeepC v4.5 advantages

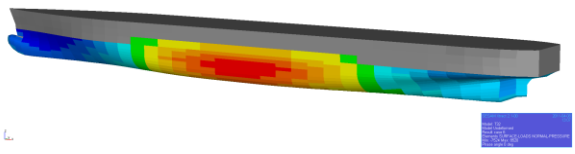
A major update of this release is the possibility to use regular waves in addition to irregular waves for fatigue analyses as well as for time domain coupled analyses. Compared with irregular wave fatigue used for detailed fatigue analysis, the new regular wave fatigue functionality let the user get the fatigue results much quicker in the initial design process. Other important benefits are the handling of direction dependent scatter diagrams and parallel execution to run an arbitrary number of analyses at the same time.

DeepC also supports cross-section drawings, cross-section analysis (capacity curves) and fatigue analysis of helix elements in umbilicals and flexible risers. DeepC has thus become a complete solution for all slender structures like risers, mooring lines and umbilicals.



1.3 HydroD v4.5 benefits

Hydrodynamic results like RAO's can be calculated based on user defined reference points in addition to the still water line. When sub-modelling techniques are used we have now made the sub-model independent of the compartments – this means that it is now possible to retrieve loads from the compartments even though only parts of the compartment is part of a sub-model. Flexibility in user specification of simulating pressure loading in a zone around the mean free surface has also been introduced. And for those who do hydrodynamic analysis of multibody systems, it is now possible to define an additional coupled damping matrix for the bodies. Finally, much larger time domain analysis can be carried out since the computational engine supports 64bit application technology.

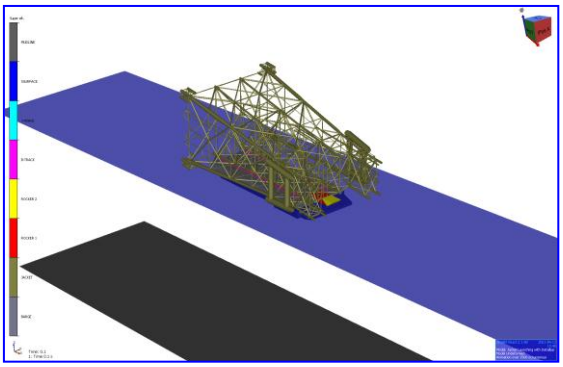


1.4 Continuing 40 years of success

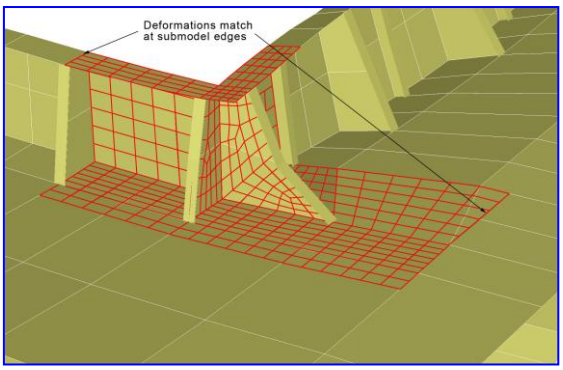
The Sesam family encompasses several software modules in addition to software packages. GeniE is an example of a software package using software modules like e.g. Sestra and Xtract as vital services. Another example is HydroD using Wadam and Wasim and DeepC addressing Simo and Riflex.

There is a continuation in maintaining the software modules and for some of them significant development has lead to new functionality for the benefits of all Sesam users. Examples of such may be the ability to run very large beam models with many time-steps in a wave load analysis for the purpose of performing a fatigue analysis based on the principles of the so-called "Rainflow Fatigue Counting" in the time domain. The limit has been lifted from 20.000 to 60.000 beams and an impressive factor of 32 for time steps in the wave load analysis (from 8.192 to 262.144 time steps).

Another example is the update of Installjac making it independent of finite element numbers and automatic re-using the flexible length of each member as defined in GeniE. This means that the buoyancy and mass can be automatically computed based on an imported model.



A third example may be the new feature in Xtract where users now can visualize that the deformations from a sub-model analysis are the same as the global analysis model. Seen from a quality assurance point of view it is a key to document that the basis for the sub-model (pre-scribed displacements) is the same as in the reference model.

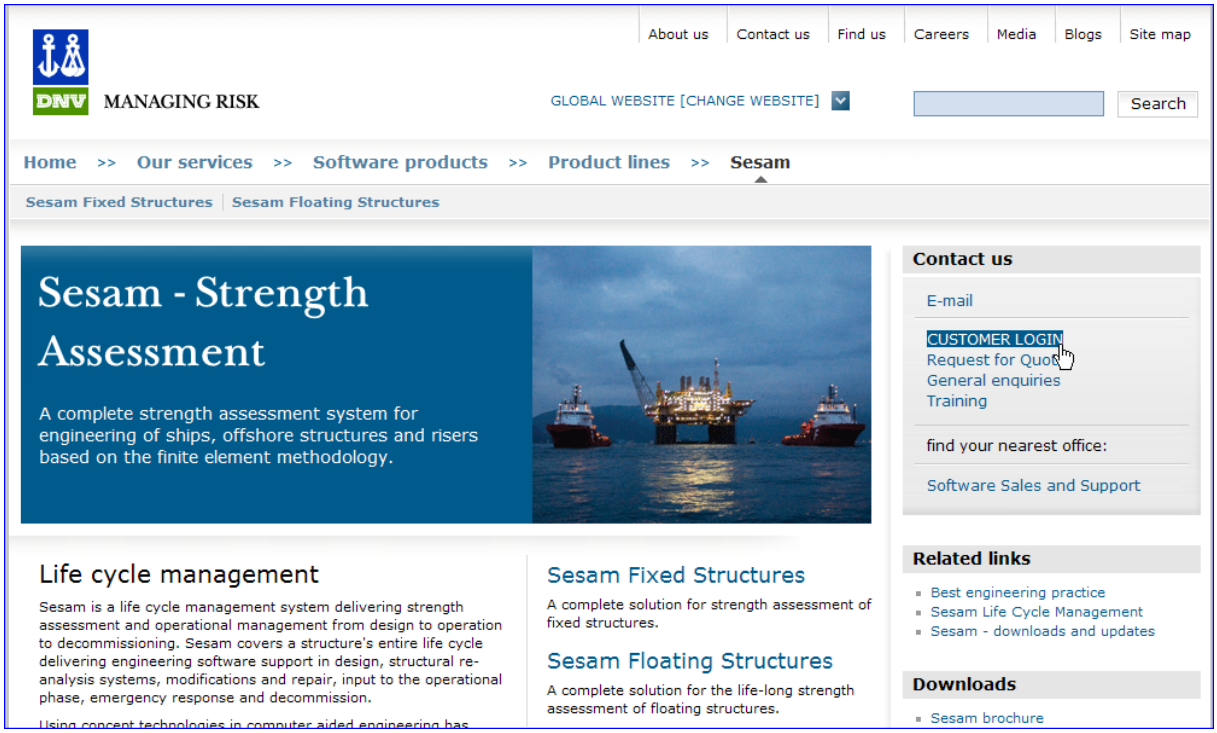


1.5 Summary

Based on feedback from our clients during development of the new possibilities in Sesam we are confident that they will help engineers be more productive within the design and operation of fixed and floating structures. At the same time new functionality in Sesam allows engineers to do riser design (traditional or based on coupled analysis results) as well as umbilical drafting and design (capacity curves and fatigue). Some of the new improvements are already part of our standard user courses – for more details see our http://www.dnv.com/services/software/training/sesamTrainingSchedule.asp.

Many of our users are already using the scripting functionality in GeniE to make parametric models, customized reporting or other user operations. To make these possibilities more available for all users, we have made a GeniE SnackPack with many examples to learn from. You find it on our download services (https://projects.dnv.com/sesam/Genie_utils/index.html).

We have also made it easier for you to find information (releases, status lists and user documentation) as well as to subscribe to information. This is done from the new Customer Portal that is located on our website (http://www.dnv.com/services/software). The new Customer Portal will also let you trace your own request as the portal requires personal identification for each user.



The Sesam 2011 DVD release marks an important milestone for DNV Software and we will continue our strong effort to enhance Sesam to the benefit of our loyal and new users. In the time to come the main focus will be on faster and editable meshing, easier to do complex jacket and topside analysis, free tank surface effects in hydrodynamic analysis and automated air-gap analysis for coupled analysis.

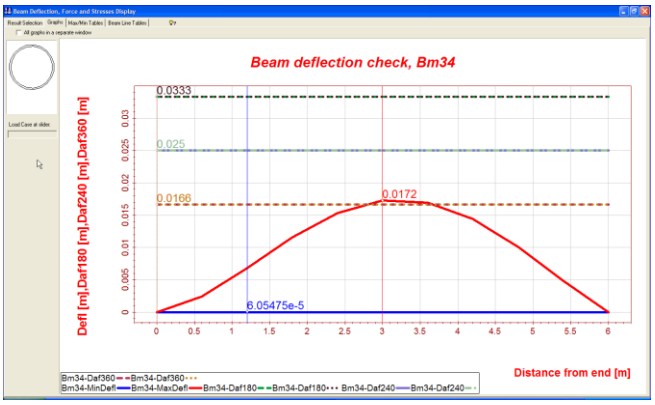
2 GeniE package for structural analysis

The GeniE package encompasses the following Sesam programs: GeniE, Wajac, Sestra, Splice, Installjac, Framework, Platework, Submod, Usfos, Cutres, Stofat, Presel and Xtract. The main updates for GeniE are described in the following. There is more information for each program in their respective release notes. Please consult the Sesam download site for details on each program - https://projects.dnv.com/sesam/status/status.html or from the Customer Portal.

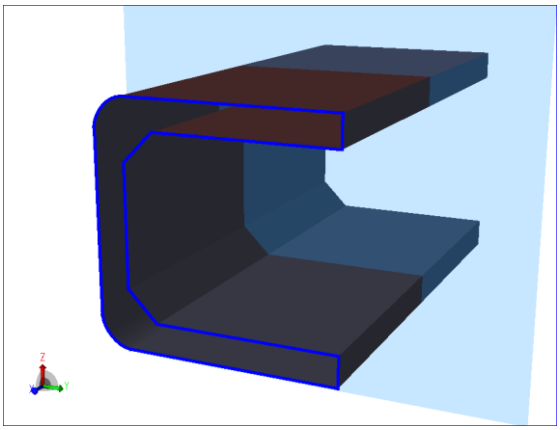
2.1 GeniE v5.3

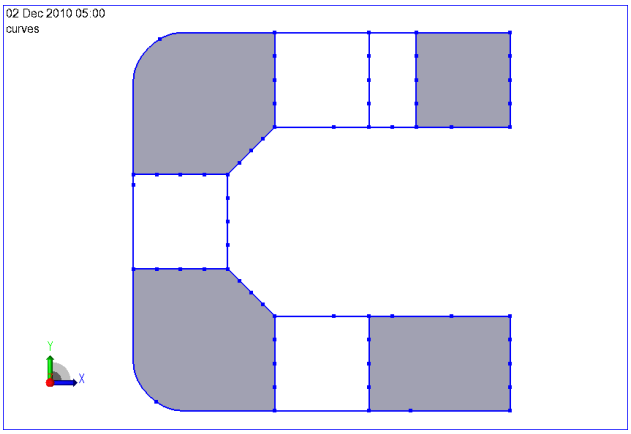
The main focus of this release has been to ease the work to do beam deflection reporting and to model complex surfaces. Another main reason for the release has also been to allow for import of old frame models and results to do result presentation and code checking in GeniE. Finally, we have made the code checking more flexible and not strictly following the most conservative interpretations as given by the various statutory regulations.

Beam deflection reporting is a requirement by e.g. the AISC code of practice. The new functionality related to beam deflection reporting significantly reduces the engineers' amount of work since we use cubic interpolation together with the effect of local loads and compare the deflection with AISC pre-defined thresholds (typically a 180, 240 or 360 classified member). Furthermore, it is possible to do scanning operations meaning that GeniE automatically will make an envelope listing the maximum and minimum result over all load cases (or selected load cases). The picture to the right shows an example of a member that is passing the 180 and 240 criteria, but not the 360 threshold.

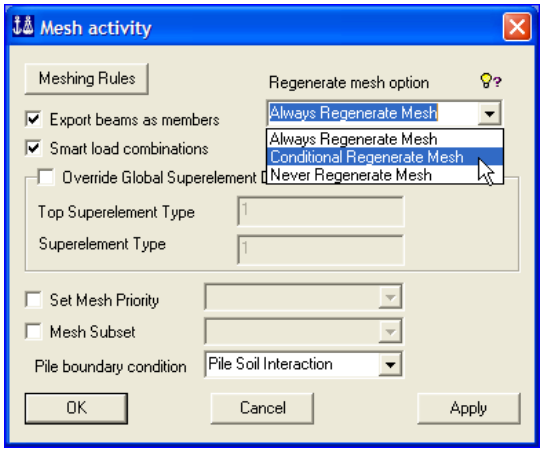


GeniE has been used for quite a while to model complex surfaces. Based on the feedback from users we have included new modelling capabilities that will speed up modelling – in some cases 3-5 user operations before is now replaced by 1 user operation. The new features include a much more powerful copy or move operation as a vector can be used directly together with a length specification. Furthermore, the ability to do both scaling and offsetting will help both quick modelling as well as better ways of controlling the mesh in critical parts. The most important functionalities are however a flat-region plate creation tool and an advanced cut-plane option. The new cut-plane option now includes a plane definition based on a point and a vector in addition to point and directions along global co-ordinate axis. The flat-region tool allows the user to easily insert plates between any surrounding structure like e.g. web-frames in a vessel. The example below shows the cut-plane inserted at a random position and the plates are inserted simply by graphic clicking. This used to be several user operations before, while it now is a matter of how many plates need to be inserted.

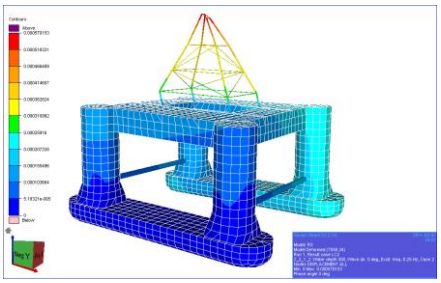


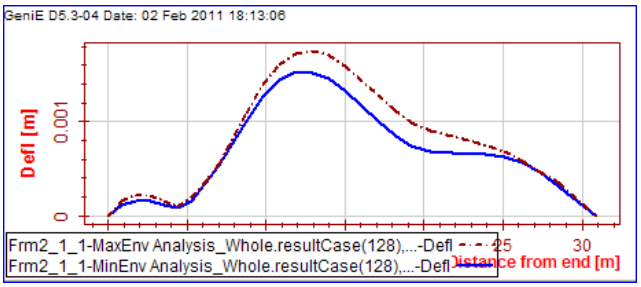


The creation of the finite element model (or analysis model) is fast for most of the cases. We have observed that in cases with large models it has taken too long time to recreate a new analysis model when the user has done minor changes like modifying section or material properties or even load intensities. The new mesh module in GeniE will detect if such minor changes have been performed and will only regenerate the modified parts of an analysis model. In other words, the meshing operation is greatly reduced – up to 80-90% of the time depending on complexity of model and how many minor changes have been done. The settings for re-generation of the mesh are controlled from the activity monitor.



There are many existing structural reanalysis systems (SRS) based on previous generation of Sesam. To ease the upgrade to the present version of Sesam, GeniE can now import a finite element model (frame models) and keep the numbering system. This means that it is possible to import the model and use it in GeniE to create either a model for super element analysis or to do a direct analysis where the finite element numbering system is identical to the original base model. It is even possible to do minor modifications to the model like changing beam section and material properties, beam eccentricities and plate thicknesses. Furthermore, it is also possible to import a result file meaning that the results from a super element analysis, a merge operation or even an old result file for a SRS can be imported into GeniE. GeniE also handles the import of a result file that has been converted from frequency domain (i.e. real and imaginary load cases) to deterministic domain (real load cases only). The obvious benefit is that results from complex or older analyses can be used as basis for result processing like beam deflection reporting and code checking of beams and plates using updated code check revisions. The pictures show results from a wave load analysis (frequency domain results in Xtract) and a typical deflection report of a beam in GeniE (the results have been converted to time domain prior to import in GeniE) scanning more than 250 load cases.





The code checking in GeniE has been available for quite some time and we have learnt from user experiences that they want first of all to have more flexibility as compared to the most conservative interpretations of the standards, but also to do screening studies by running a larger number of load cases. This version of GeniE includes more flexibility whereby the user can decide options for using

- Maximum or local buckling moments (relevant for compression buckling of members)
- Exclude torsion effects when computing vonMises stresses (AISC)
- Include plastic moment of inertia in formulae 6.2 (Eurocode)
- Compute code check forces when needed and store the worst code check results only. This option will allow code checking for a much larger number of load cases

In addition to the major enhancements as described above there are many minor, but useful improvements that will help engineers do their jobs faster. They are all listed in the release notes part of the installation and some of the examples are

- Import of soil data (import a so-called Gensod file). This will reduce the amount of manual input and make the model less prone to user input errors
- Design wave load condition for minimum base shear or overturning moment (in addition to maximum base shear). In other words – it is now possible to determine the range between maximum and minimum values
- A wave load analysis can now be run with up to 60.000 beams and shells in addition. This means that wave load analysis can be carried out with ease for jackets where a joint(s) has been modelled with shells for the purpose to carry out a stress analysis (requires Wajac version 6.2-01 or later)

- Position of hinges when using eccentric beams. This will give more accurate results since the position of the hinge can be at the end of the flexible member (requires Sestra version 8.4-04 or later)
- Explore the current workspace directly from GeniE instead of the need to open it in Windows Explorer
- The time to compute applied loads for compartments has been significantly improved. For a large (e.g. VLCC) 3 cargo hold model the time is reduced by an order of magnitude

2.1.1 Upgrading from previous GeniE version

Before you upgrade, please make sure you have relevant data of journal files or xml files to be used when regenerating your models in the new GeniE version.

There are three alternatives for migrating data from a previous version of GeniE. For a full description about data transfer capabilities and limitations, please consult Section 9.2 in Volume III of the User Manual. You can download the user manual from https://projects.dnv.com/sesam/manuals/manuals.html or from the Customer Portal before installing the programs.

- The first one is by using the journal file – make sure that it runs safely (File|Read Journal File) in the previous GeniE version before importing to the new version. The journal file is complete and may also contain analysis runs, the code checks and the report generation.
- The other alternative is by use of the condensed journal file (the so-called clean js-file). This file is complete for jackets and topsides where there are no curved structures. The environment as well as analysis set-up is also included, but please note that capacity checks are not part of the clean js-file.
- The final option is by use of the XML import and export feature. The XML file contains a neutral definition of the workspace – it is complete except for code check details and reporting. The functionality is available from File|Export XML and File|Import XML.

The license file for GeniE is the same as before. Notice that there are features in GeniE (typically code checking and modelling of curved structure) that require additional passwords in addition to the basic program versions.

2.2 Other applications than GeniE

For the other programs Wajac, Sestra, Splice, Installjac, Framework, Platework, Submod, Usfos, Cutres, Stofat, Presel and Xtract the update information is found from the Customer Portal or our previous download site.

The respective license files are the same as before.

2.2.1 Upgrading from previous version

None of the other programs are using database technologies, but input files in form of a typical “*.jnl” or “*.inp”. This means that previous input data can be used as is to regenerate the data.

3 DeepC package for SURF, mooring, marine operations

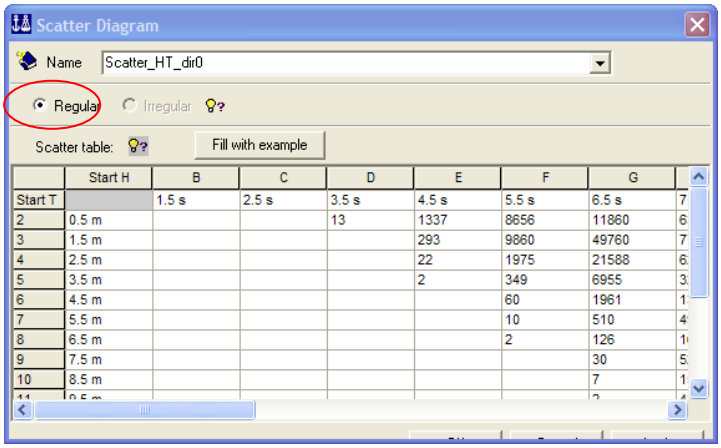
The DeepC package contains the following Sesam programs: DeepC, Simo, Riflex, UmbiliCAD, Helica, Mimosa, Vivana, FatFree, StableLines, PET (Pipeline Engineering Tool) and DNV OS-F101 Code compliance. The main updates for DeepC are described in the following. There is more information for each program in their respective release notes. Please consult the Sesam download site for details on each program - https://projects.dnv.com/sesam/status/status.html or from the Customer Portal.

3.1 DeepC v4.5

The main update of this release is the possibility to use regular waves in addition to irregular waves for fatigue analyses. Compared with irregular wave fatigue used for detailed fatigue analysis, the new regular wave fatigue functionality lets the user get the fatigue results much quicker in the initial design process. There are also new versions of the solvers Riflex (3.6.13) and Simo (3.6.13).

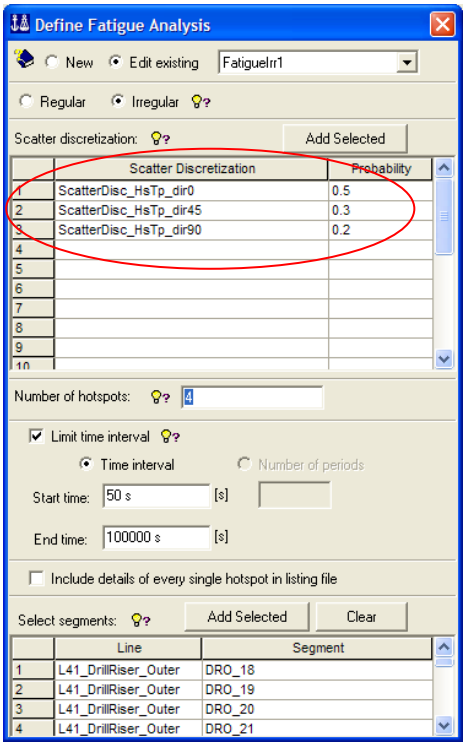
A typical regular wave fatigue analysis approach is similar to irregular wave fatigue analysis, which normally includes:

- Creating multiple regular waves and multiple regular time conditions based on a height/time scatter diagram
- Specifying a number of periods based on a predefined analysis template
- Running all the analyses and making a fatigue analysis

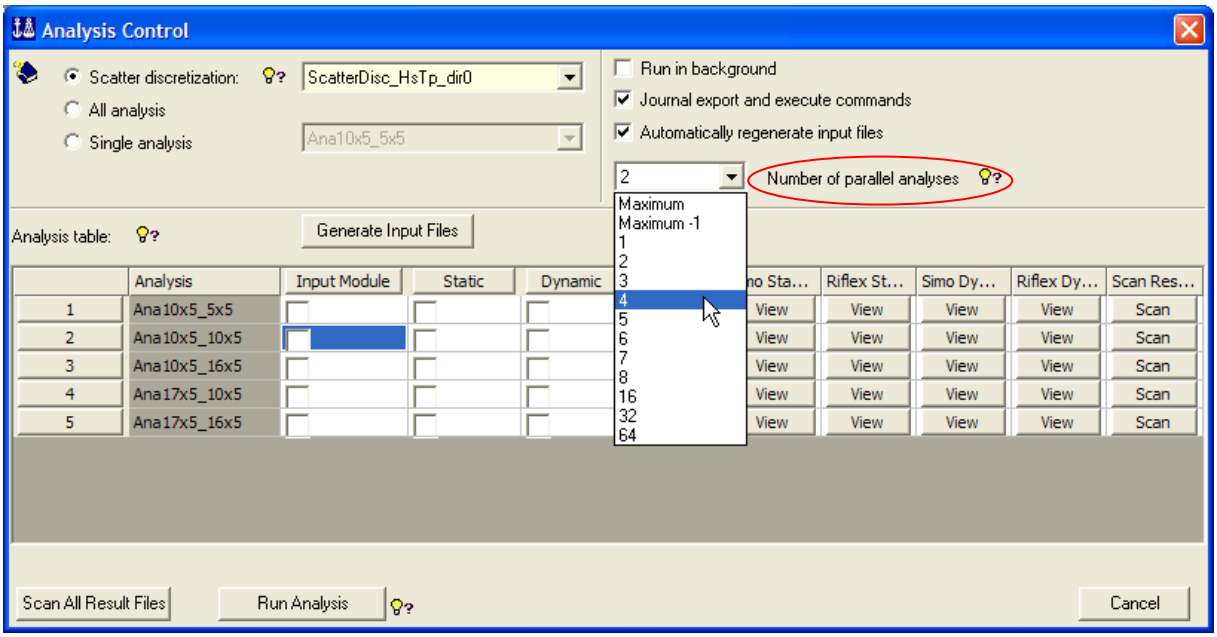


Regular wave conditions can also be used in a coupled analysis. A typical example is the validation of model test. Nowadays, regular wave conditions are normally included in a model test to get RAOs of floaters including mooring and riser systems. Traditional frequency domain analysis (de-coupled method) only includes slender structure effects which can be a significant simplification for deep water conditions. DeepC offers an efficient way of calculating the response under regular waves while considering coupling effects at the same time.

Another new feature in this release is the ability to include multiple scatter discretizations in one fatigue analysis. This functionality will make it much easier to handle direction dependent scatter diagrams. Users just need to specify the probabilities of each scatter discretization as shown in the figure to the right. The new functionality applies both to regular and irregular wave scatter diagrams.



Parallel execution is another important improvement in the latest release. This means that it is possible to run an arbitrary number of analyses in parallel, reducing the total elapsed analysis time.



Another benefit in the new release is the use of “Named Sets". Users can include a number of structural objects in a set, and use the set to display model, apply properties, moving, etc. Defined sets are shown in folder "Utilities/Sets".

The ability to see descriptions of objects in the browser is also a new and useful feature. It makes it much easier to see and get an overview of the parameter values as it is no longer needed to open a dialog for an object to see values.

Finally, together with UmbiliCAD and Helica, DeepC supports efficient fatigue analysis of helix elements in umbilicals and flexible risers. UmbiliCAD makes an engineer’s produce cross-section drawings and linear cross section analysis within hours increasing the precision level in the bidding process as well as in the detailed engineering phase.

Helica performs the non-linear cross section analysis and fatigue analysis faster than other systems without the need for a detailed finite element model. The input for short term fatigue comes from a DeepC time domain analysis (environmental data) while the cross section details comes from UmbiliCAD. The purpose of short-term fatigue analysis is to assess the fatigue damage in a stationary short-term environmental condition considering fatigue loading in terms of time-series of simultaneous bi-axial curvature and effective tension produced by global dynamic response analysis (DeepC). Long-term fatigue analysis can also be done by accumulation of all short-term conditions.

3.1.1 Upgrading from previous DeepC version

Before you upgrade, please make sure you have relevant data of journal files to be used when regenerating your models in the new DeepC version.

For DeepC you can import the journal file (js-file) created from your modelling sessions. Alternatively you can export a condensed journal file (the so-called clean journal file) and import in the new program version. These actions are available from File|Save Clean JS and File|Read Journal File. The data transfer is complete, but you need to re-run your analyses.

The license file for DeepC is the same as before.

3.2 Other applications than DeepC

For the other programs Simo, Riflex, UmbiliCAD, Helica, Mimosa and Vivana, the update information is found from the Customer Portal or our previous download site. Please notice that FatFree, StableLines, PET (Pipeline Engineering Tool) and DNV OS-F101 Code compliance are new tools and if you need information on these please contact us.

The respective license files are the same as before.

3.2.1 Upgrading from previous version

None of the other programs are using database technologies, but input files in form of a typical "*.jnl" or "*.inp". This means that previous input data can be used as it is to regenerate the data. Some of the tools are Excel based meaning that the previous data can be used in a new program version.

4 HydroD package for hydrostatics and dynamics

The HydroD package includes the following Sesam programs: HydroD, Wadam, Wasim, Waveship and Postresp. The main updates for HydroD are described in the following. There is more information for each program in their respective release notes. Please consult the Sesam download site for details on each program - https://projects.dnv.com/sesam/status/status.html or from the Customer Portal.

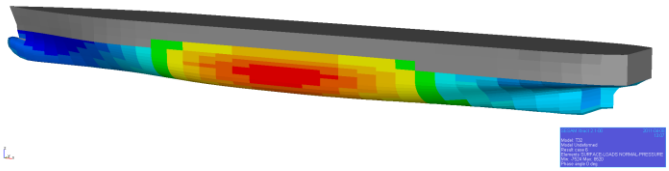
4.1 HydroD v4.5

The release of HydroD also includes new versions of Wadam (v8.2-02) and Wasim (v4.5-04). HydroD supports the definition of the new functionality in these hydrodynamic programs and we have made it easier to fill multiple compartments at the same time when they have the same content.

A strong benefit of the Sesam system is the ability to make a sub-model and analyse it independent of the global model. To make this even more flexible we have introduced the definition of acceleration and zero pressure reference points for compartments. This means that the sub-model is independent of the compartment; in earlier versions the sub-model had to include the complete compartment(s) for a proper load transfer. This applies to analysis both in frequency and time domain.

For multi-body analysis in frequency domain it is possible to run up to 15 different bodies. We have made such analysis even more powerful by allowing the user to specify an additional coupled damping matrix for the bodies. This will obviously produce more accurate results.

HydroD has supported DNV rules on how to simulate pressure loading in a region around the mean free surface in a frequency domain analysis. In addition, the program now allows the user to apply this functionality on a selected part of the vessel, since the method is only recommended on the part of the vessel which is wall-sided. This option is available for both Wadam and Wasim analysis. An example on pressure above the still water line of the mid-ship area is shown in the picture to the right.



For fixed large volume structures (e.g. a GBS) it is now possible to run a frequency domain analysis (Wadam) without the need for defining a mass model; in other words a more flexible solution than before.

When deriving hydrodynamic results like e.g. RAO (Response Amplitude Operators) these used be relative to the still water line. The new HydroD is much more flexible since the user can define reference points for calculation of results both from Wadam and Wasim.

To help users creating the hydro model from a section model, typically for a Wasim analysis (also known as the “pln file”), HydroD will set up an automatic proposal for the number of panels needed for an optimum analysis. This is based on the dimensions of the model and some mesh criteria.

For time domain analysis (Wasim), a new method for controlling the motion is introduced by automatically giving additional damping in the horizontal modes in the transient part of the simulation. If this function is not desired by the user it may be deactivated.

Finally, Wasim has been made a 64bit application, in addition to the 32bit application, meaning there is unlimited memory of the program. Much larger analyses can thus be carried out as compared with a 32bit application.

4.1.1 Upgrading from previous HydroD version

Before you upgrade, please make sure you have copies of HydroD journal files (js files) to be used when regenerating your models in the new HydroD version. Importing the data to a new version will be more efficient if you have used the feature to export a so-called clean journal file. HydroD can also import old Prewad input files in case you have not used HydroD before. Older versions of Wasim (Wasim Manager) did not have scripting – this means that for those who want to re-run such old Wasim models must convert manually to the new HydroD user interface.

The license file for HydroD is the same as before.

4.2 Other applications than HydroD

For the other programs Wadam, Wasim, Waveship and Postresp, the update information is found from the Customer Portal or our previous download site.

The respective license files are the same as before.

4.2.1 Upgrading from previous version

None of the other programs are using database technologies, but input files in form of a typical "*.jnl" or "*.inp". This means that previous input data can be used as is to regenerate the data.

5 License Manager

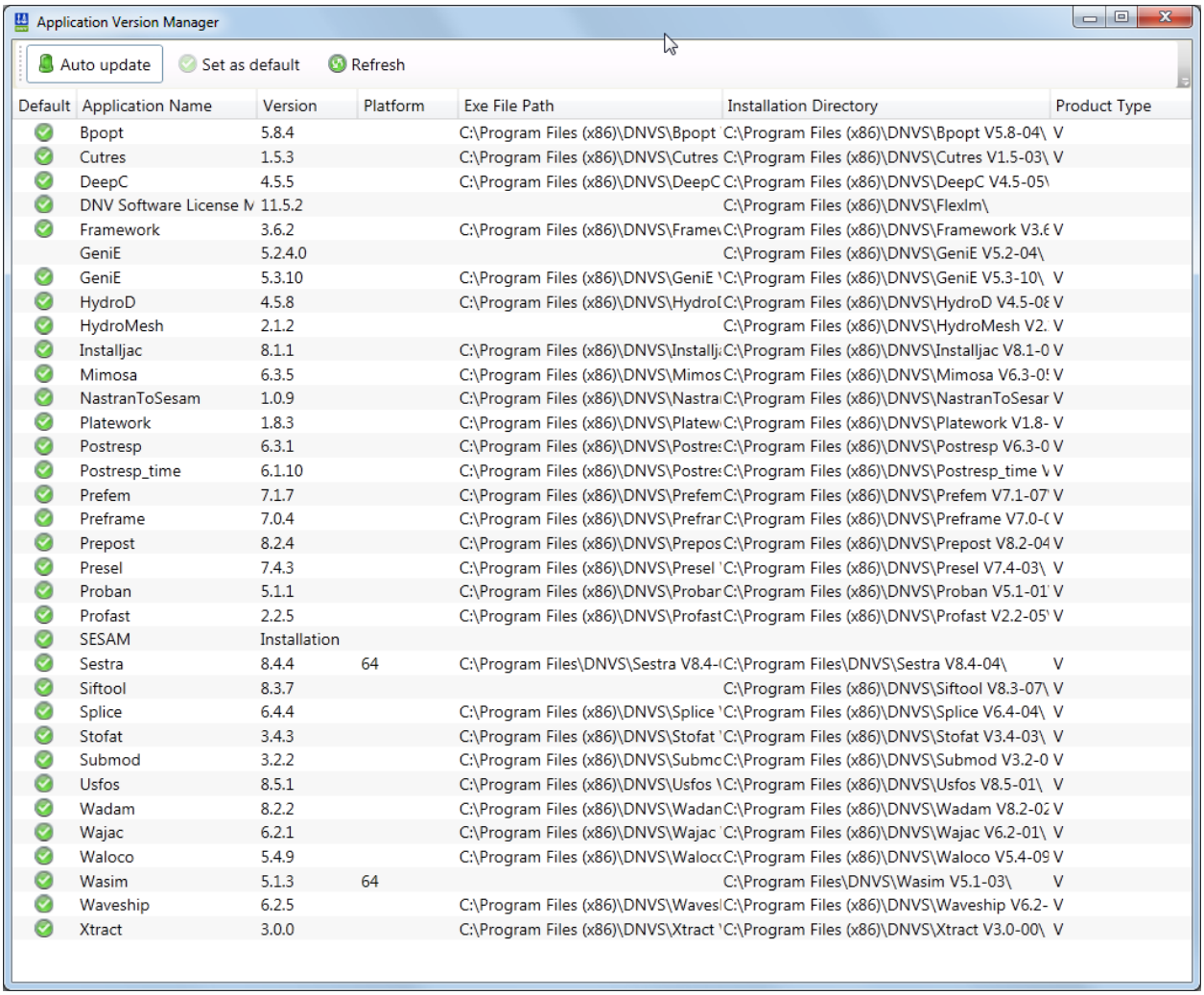
An updated version of the DNVS Software License Manager (11.5.2) is delivered with this DVD. This version is required in order to use dongle based license check on 64 bit platforms (Windows XP, Vista and 7).

6 Application Version Manager

New with this release is that the use of the Sesam.ini file is being phased out. Managing installations is instead done using a new program, the Application Version Manager (AVM).

After having installed the Sesam 2011 DVD, you can find the Application Version Manager in the Windows Start Menu, under DNV Software/Application Version Manager.

Here you can check that the latest program versions are set as default. If both 32 bit and 64 bit versions of an application are installed, the 64 bit version will be preferred. You can also set older versions to default (if you have older versions of the applications installed), but then you must disable Auto Update by clicking this button.



The new DVD releases of GeniE and HydroD uses the AVM to find the applications being started from these programs. For Sesam Explorer, the list of programs will be created by the AVM at the time of installing Sesam Explorer, but will not be continuously updated.

7 Sesam Explorer

Sesam Explorer (also known as BriX Explorer – Sesam configuration) comes in two versions, one for Win XP and one for Win 7 and Win Vista. The reason for the two versions is the database technologies for the different operating systems as supported by Microsoft.

The two versions are as follows:
- Version 4.0.2 for Windows XP 32 bit
- Version 4.0.3 for Windows 7/Vista and XP 64 bit

Sesam Explorer for Win XP is using the database MSDE while the Sesam Explorer for Win 7 and Win Vista is using SQL Express 2008. The functionalities for both versions are the same, but because of database incompatibilities a MSDE database cannot be opened by SQL Express 2008. Consequentially, an existing Sesam Explorer MSDE project file cannot be accessed by Sesam Explorer for Win 7 and Win Vista.

Clients who want to continue to use Win XP should thus not re-install Sesam Explorer, but continue to use the version already installed. Clients who want to migrate to Win 7 or Win Vista should install the new Sesam Explorer.

In case existing workflow data needs to be migrated from Win XP to Win7/Vista it will be necessary to export and import the workflow data (with or without project data) by using the various features as offered by Sesam Explorer. See Chapter 3.1 and 3.7 of the Sesam Explorer User Manual for more details.

See the Installation Guide on how to update and maintain the application paths to individual Sesam programs according to the program structure on the Sesam 2011 DVD. Notice that Sesam Explorer does not detect updates done by the AVM.

Furthermore, replacing the Sesam.ini with the AVM means that it is no longer possible to use the old Sesam Manager from the Sesam 2008 DVD on without special instructions. See the Installation Guide for details.

8 Supported operating systems

The Sesam™ 2011 DVD has been tested on the following operating systems:

- Windows XP, 32 and 64 bit operating systems, Service Pack 3 is required for XP 32bit.
- Windows Vista, 32 and 64 bit operating systems – notice that not all Sesam applications have been tested on both 32 and 64 bit.
- Windows 7, 32 and 64 bit operating systems

We recommend using the Windows 7 64bit as the platform of the future, in order to easier being able to utilize existing and future 64 bit versions of our products.

8.1 Recommended hardware configuration

8.1.1 Minimum hardware recommendation

This configuration is typical for tasks normally limited to beam jacket and topside design analyses including wave and pile/soil analysis. The configuration is also applicable when making super-elements built up of shell and beams. Furthermore, hydrostatic and hydrodynamic analysis (frequency domain) can also be carried out.

Graphic card: Open GL compatible. May be integrated with PC
Memory: 2 GB
Processor: 1.75 GHz
Storage: 100 GB
Display: 17” supporting 1280x1024, alternatively laptop 15” supporting 1280x1024

8.1.2 Preferred hardware recommendation

This configuration should be used for all other tasks than mentioned above.

Graphic card: Separate Open GL compatible graphics card (NVIDIA or ATI) with 512MB graphics memory
Memory: 4 GB
Processor: 3.0 GHz
Storage: 250 GB
Display: 24” supporting 1900x1200, alternatively laptop 17” supporting 1900x1200

For very large modelling tasks in GeniE and large number of finite elements in Sestra 64bit computers should be used with the same specification as above.

9 List of Sesam programs

The table below shows the revision numbers for each program part of the Sesam 2011 DVD.

Program	Version number	Note
Application Version Manager	1.0-11	
Sesam Explorer	4.0-02	For use on XP 32 bit only
Sesam Explorer	4.0-03	For XP 64 bit, Win 7 and Vista
License Manager	11.5-02	
GeniE	5.3-10	
Wajac	6.2-01	
Sestra	8.4-04	32 as well as 64 bit version
Splice	6.4-04	
Installjac	8.1-01	
Framework	3.6-02	
Platework	1.8-03	
Submod	3.2-02	
Usfos	8.5-01	
Cutres	1.5-03	
Stofat	3.4-03	
Presel	7.4-03	
Xtract	3.0-00	
NastranToSesam	1.0-09	
Bpopt	5.8-04	
Prefem	7.1-07	Non-maintained program
Preframe	7.0-04	Non-maintained program
DeepC	4.5-05	
Simo	3.6-13	Part of the DeepC installation
Riflex	3.6-13	Part of the DeepC installation
Mimosa	6.3-05	
Vivana	3.6-13	Not part of the Sesam 2011 DVD
UmbiliCAD		Not part of the Sesam 2011 DVD
Helica	2.3-04	Not part of the Sesam 2011 DVD
FatFree	10.6	Not part of the Sesam 2011 DVD
StableLines	1.2	Not part of the Sesam 2011 DVD
PET	3.0	Not part of the Sesam 2011 DVD
DNV OS-F101 code compliance	3.1	Not part of the Sesam 2011 DVD
HydroD	4.5-08	
Wadam	8.2-02	
Wasim	5.1-03	32 as well as 64 bit version
Waveship	6.2-05	
Postresp	6.3-01	
Postresp_time	6.1-10	
Waloco	5.4-09	
Proban	5.1-01	
Profast	2.2-05	
Siftool	8.3-07	
Prepost	8.2-04	

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