1) **The Sesam GeniE software** is a software tool for designing and analyzing offshore and maritime structures made of beams and plates. Modelling, analysis and results processing are performed in the same graphical user interface. The use of concept technology makes the Sesam GeniE software highly efficient for integrating stability, loading, strength assessment and CAD exchange. All data are persistent enabling the engineers to do efficient iterative re-design of a structure.

2) **The Sesam HydroD software** is a tool for hydrostatic and hydrodynamic analysis. By integrating these tasks, significant cost savings may be achieved in the engineering phase since the same panel model may be used by one tool. Sesam HydroD software will perform compliance checks against statutory rules for stability including the importance of integrity of the deck tanks. Floating positions may be determined as a result of actual mass and buoyancy or from an automatic compartment filling to satisfy specified position.

3) **The Sesam DeepC software** is a tool for mooring and riser design as well marine operations of offshore floating structures. It will perform mooring analysis separately or when including the coupled effects from risers and vessels. Furthermore, Sesam DeepC software may be used for riser design where the risers are analyzed separately or when considering coupling effects. Marine operations may be simulated in the time domain for a study of motions and station keeping of multibody systems.

4) **The Sesam Marine software** has the ability to visualise the operations in 3D and run multiple ‘what-if’ scenarios showing the results of all known factors, including dynamic positioning, reduces risk significantly for transportation, installation and lifting of fixed and floating structures and installation of subsea equipment. The simulations in Sesam Marine can be used during real-time execution of marine operations, including installation of SURF structures such as templates, flexible risers, umbilicals and pipelines. The coupled and multi-body analysis is performed in time domain and is among others based on 3rd-order Runge-Kutta and Newmark-β methods.

Sesam Marine’s benefits are crucial for successful completion of offshore installations.

**With Sesam Marine it is possible to view the simulated operations in actual time.**

- At what speed is it feasible to perform the operations?
- How quickly can a loaded crane rotate in various weather conditions?
- How should the crane be positioned for most stable procedures?
- Is the operation feasible only up to a certain wave height?

Seeing the operation through realistic computer simulation offers unequalled decision support. Technicians will see ahead of time how the components will react to the
forces needed, what motion will be incurred, for example swing movements of
equipment or the heeling force on a vessel or offshore structure. When the actual
marine operations begins, the confidence of having seen the simulation will support
operators in making the right decisions.

**With Sesam Marine software you can:**

- Manage risk of marine operations
- Perform ‘what-if’ analyses
- Improve HSE performance
- Benefit from cross-disciplinary communication
- Evaluate feasibility
- Gain better understanding of main challenges
- Prepare for actual operation through familiarisation
- Support decision-making during actual operation
- Understand through visualisation

Sesam Marine includes the modules Sima, Simo and Reflex. Sima is the graphical
front end of Simo and Riflex for marine operations.

**What is included in Sesam Marine?**

- Modelling
  - Graphical user interface
- Analysis
  - Time domain
  - Interactivity
- Result presentation
  - Integrated post-processor
  - 3D visualisation

**Sesam Marine simulation software of marine operations can be used for:**

- Lifting of topsides and modules
- Lifting and installation of SURF structures (templates, pipelines, flexible risers)
- Floatover installation/removal of topsides
- Load-out from quay to barge
- Offloading (tankers in tandem or side-by-side)
- Offshore crane operations
- Jacket lift installation and removal
- Transportation of offshore floaters (e.g. TLP, Semi, Spar)
- Up-ending of SPAR
- Towing by tugs (e.g. GBS)
5) **The Pipeline Engineering Tool** is a calculation tool for early phase pipeline assessment covering different aspects of pipeline design. The tool is a VBA (Visual Basic for Applications) based on program with a user-friendly interface.

**StableLines Software for pipeline on-bottom stability**
An engineering analysis software for pipelines, based on DNV Recommended Practice DNV-RP-F109.

**FatFree: Advanced free span analysis software**
A professional software for engineering analysis of free spanning pipelines according to the DNV Recommended Practice, RP-F105.

**DNV-OS-F101 Code Compliance**
**Submarine Pipeline systems Code Compliance program**
Related to the re-issue of the DNV Offshore Standard for Submarine Pipeline Systems, DNV has updated the program for doing code check. DNV-OS-F101 Code Compliance is a VBA (Visual Basic for Applications) based program with a user-friendly Microsoft Excel spreadsheet interface.

6) **The Sesam Wind software** offers a tailor-made solution for structural strength analysis of offshore wind turbine structures addressing the industry’s need to account for the combined effect of wind and hydrodynamic loads. The analysis functionality offered is in accordance with international standards like IEC61400-3 and the DNV Offshore Standard DNV-OS-J101 Design of Offshore Wind Turbines.

7) **The Sesam Probability software** (Proban) is a general purpose program for probabilistic, reliability and sensitivity analysis. By complementing the hydrodynamic and structural analysis features, the Sesam Probability software (Proban) module forms a part of the powerful suite of Sesam programs for maritime and offshore engineering analysis.