

## Project Based Time Domain Simulation Software for Offshore Operations

### aNySIM<sup>pro</sup>



#### A new way of sharing hydrodynamic software

For our hydrodynamic toolbox “aNySim”, MARIN decided to come up with a completely new concept. It allows clients to use the latest version of the validated aNySIM program for a specific project with MARIN’s dedicated support and advice but without paying full licence fees, named “aNySimpro”: it is the professional aNySim code for your specific project.

MARIN has been developing, using and selling hydrodynamic simulation software for many years. Specialised tools were developed for specific areas: coupled mooring analysis, Dynamic Positioning, multiple-body lifting operations, riser dynamics, offloading operations, etc. Developments in the offshore industry in recent years showed the need for more integrated and flexible tools. Therefore, we decided to develop the new modular ‘aNySim’ code. It brings together the capabilities of the different software packages and has become MARIN’s main hydrodynamic toolbox. Various modules can be coupled to the central N-body time domain simulation module. This, for example, makes it possible to study a DP heading controlled moored FPSO with a shuttle tanker behind it, including all the hydrodynamic and mechanical interactions.


Until now, aNySim has been an in-house MARIN code used for clients. aNySim was often used in combination with model tests, so that the tool was validated step by step. Clients regularly asked MARIN whether they could buy or lease aNySim, but it does not have a Graphical User Interface (GUI). MARIN prefers to invest in the hydrodynamic quality of the tool and have the flexibility to modify or extend it when needed. Within MARIN, aNySim is often used on batch processes or coupled to Matlab or Excel applications. As a consequence, aNySim can only be run by experienced people or with direct support from MARIN.

Based on these considerations, MARIN decided to come up with a new way of sharing our hydrodynamic software. Clients can now use MARIN’s professional aNySim code for a specific project: aNySimpro. Instead of buying or leasing the general program, a project-specific version of the program can now be shared. This allows clients to use the latest version, together with dedicated MARIN support and advice. Instead of buying or leasing a general code, clients pay a project licence fee for the use of the program and for the actual support and training clients expect from MARIN at that moment.

#### How does it work?

At the moment clients have a project and consider using aNySimpro:

- They contact MARIN and indicate for what kind of project they want to use it.
- A set-up is made for preparation of the executable aNySim<sup>pro</sup> code and the necessary hydrodynamic (HYD) input files based on the vessel or structures. Specific modifications and additions can be made in the client’s aNySim<sup>pro</sup> version when needed for an optimum use in their project.
- The required support and training for this project is agreed and planned. MARIN can train the personnel that clients want to involve in the project. Of course the required support depends on the experience they may already have with aNySim<sup>pro</sup> from previous projects.
- MARIN prepares HYD-files and includes them into the project version of aNySim<sup>pro</sup>. There is also the option of clients preparing HYD-files themselves, which will then be included in their aNySim<sup>pro</sup> version.

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- MARIN can also assist in the preparation of further input (mooring or DP systems), in a joint QA check and in the first runs. In combination with model tests, a tuned version of aNySim*pro* can also be provided. In principle, the further input (such as mooring systems and DP systems) and use is open: clients can perform their own design optimisation.
  - Clients receive the executable version of aNySim*pro*, which is a perpetual project version (licences will be extended if the project is still running after 1 year) which can be used by an unlimited number of users within their company. The scope of the project is defined beforehand and that determines the fee paid for the program. This approach allows clients to use the tool for the project they are working on and they can also check or modify things in the future.

#### What are the advantages of the new approach?

- Being MARIN's main tool for client and research projects, aNySim*pro* is continuously validated with model tests, so clients always get the latest version of the validated program. *You work with the same tools as we do!*
- As MARIN knows both the client's project and the aNySim program, MARIN can offer advice about the applicability of the tool for their project or problem. Modifications can be provided for the specific project. If clients are close to the limitations of its application or validation, MARIN can let them know. *You're always sure that aNySim*pro* is fit for purpose!*
- Instead of buying or leasing a general code for a large sum, clients only pay the project fee when they have a project and need the program. They do not pay for each new user licence as the number of project users is unlimited. They do not pay for general support but only for the support and training needed for this project. *You only pay for what you need!*

In summary, you do not only get our aNySim*pro* tool but also our advice!

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