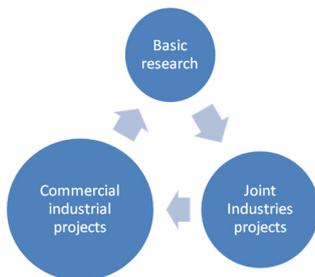


Sharing experience and building knowledge

Joint Industry Projects (JIPs)

MARIN is world-famous for providing commercial hydrodynamic design and verification services to industry and governments. Development, sharing and application of knowledge also takes place through Joint Industry Project (JIPs). These Joint Industry Projects are organised by MARIN to develop and transfer knowledge with several partners in the project.



The JIP cycle consists of three steps:

- It starts with the development of fundamental knowledge and scientific research in cooperation with universities.
- JIPs promote the transfer of theoretical knowledge to concrete applications in industry, and combines customer contact, market-driven research and the development of practical tools.
- Developed knowledge will then find its way into commercial industrial projects, carried out for customers usually in a one-to-one relation. In these frequent projects, MARIN obtains ideas for future fundamental research work.

Keywords in a JIP are:

- pooling resources at a pre-competitive level
- sharing cost and benefit of research they could not afford alone
- Being involved in new technological development, based on fundamental research programmes.
- Good mix between operational experience and technology development
- Join the relevant JIP network

Know-how flows in two directions. For instance, full-scale monitoring provides information on the behaviour of ships and offshore floating platforms which sometimes leads to new information that then ignites new hydrodynamic R&D at MARIN and universities. On the other hand, new physical models for hydrodynamic phenomena, developed at MARIN can be implemented in design tools and validated in Joint Industry Projects. This is an ideal way for the industry to learn about the technology, to trust the results and work with the new tools. Today, Joint Industry Projects form a significant part of MARIN's business. Joint Industry Projects constitute 25-30% of MARIN's turnover. On average about 50 JIPs are in various stages of realisation, while some 20 ideas and initiatives are in preparation.

This is very much the result of a co-ordinated and long-lasting effort from MARIN's business units and R&D department.

In this leaflet a selection of our actual JIPs is given. Interested? Please, contact MARIN.



ROPES

Research on passing effects on ships

To provide insight into the effects of passing ships and to validate and develop methodologies for the evaluation of such effects on ships moored in a port in order to provide solutions for existing and new port and terminal developments.



REFIT2Save

Refit energy saving devices to reduce ship fuel consumption

The REFIT JIP intends to quantify the effect of various commercial available refits on fuel consumption on ships in service. At the same time the project will provide insight into the physics of these selected refits.



OWME

On board wave and motion estimator

To develop, test and demonstrate a practical system to predict quiescent periods of ship and platform motions some 60 seconds in advance.



TRUST

Thrust hydrodynamics

To better understand thruster-interaction effects, to develop analysis methods and to apply these tools in the design process and in the analysis of the DP vessel's stationkeeping capabilities in operational conditions.



HELIOS

Helicopter operations for offshore ships

Improving safety and workability of helicopters on FPSOs, installation, work-over and other offshore vessels.



MOONPOOL

To provide more insight into the excitation mechanism and prove the feasibility of using non-stationary CFD calculations. The study should result in a design methodology for moonpools and damping devices.



LAURA

Launch and recovery system for any small navy crafts

The development of a design for a common system that can launch and recover a wide variety of small craft, and which can be operated in a wide environmental regime.



Offloading Operations JIP

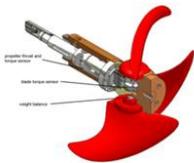
To improve uptime and safety of offloading, with a comprehensive monitoring campaign that includes operations. This JIP will provide feedback into the design and guidance into the operation.



Current Affairs

Current-induced loads and motions of offshore structures

To develop tools and guidelines to assist engineers in the assessment of current effects in the different design stages.



WAGENINGEN Propeller C- and D-Series JIP

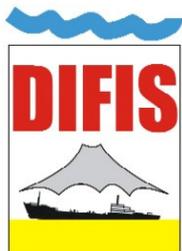
To provide open water characteristics in complete two quadrants for modern CPP designs, including blade spindle torque. A large systematic series of both open and ducted CPPs are tested.



SHARES

Shaft Dynamic Loads and Responses

Research into the shaft dynamic response of thruster systems to loads due to ventilation or interactions during manoeuvring or DP operations, in order to enable a more rational design of thrusters.

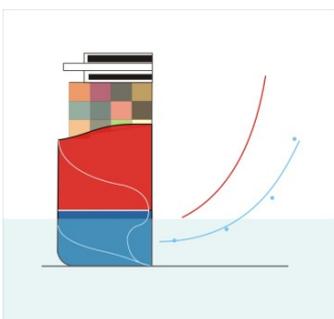


DIFIS

Double inverted funnel for the intervention on ship wrecks

The study, design and validation of an EU reference method for the prompt and cost-effective intervention on ship wrecks.

The developed system should be able to deal with oil leaking from wrecks even in very large water depths.



SPA

Ship service performance analysis

- Develop a method for speed-power performance analysis for service conditions, based on available data & sensors; Specify standard for performance monitoring.
- Reduce data & present meaningful results to crew in order to assist in fuel reduction.
- Connect to existing ship-shore communication to relay data to ship owner offices for fleet comparison.



Leading Edge

Control of ship vibrations through the calculation of propeller tip vortices

The required code will be developed and the results will be verified at model scale for a series of modern propeller types: highly skewed and tip plated propellers. Calculations at high Reynolds number will be made and validated by measurements at full scale.



ShorTCresT JIP

Effect of Shortcrestedness on extreme wave impact

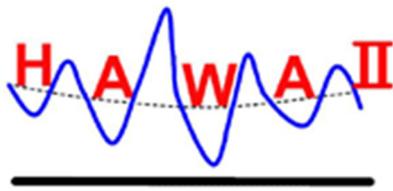
To take into account short-crestedness in the design of offshore structures against extreme waves based on a good description of their spectral characteristics, statistics, kinematics and loading.



CREATING

Inland navigation

Creating aims at stimulating waterborne transport in an economical way, by giving new impulses to inland navigation.



HAWAII - shallow water

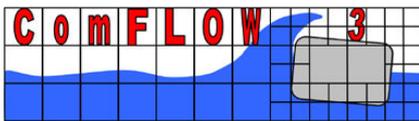
To develop a consistent design methodology for offshore terminals in a nearshore wave climate.



VALID

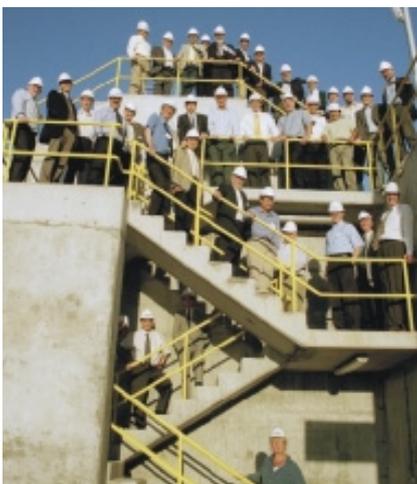
Ship integrity challenged by waves

To forecast structural maintenance needs of USCG Cutters, further improve the understanding of wave loading leading to fatigue damage, and increase the confidence level in predicting wave loading leading to fatigue damage.



Comflow 3

To improve, develop and validate the ComFLOW program for complex free-surface flows in the offshore industry and make it useable for advanced engineering applications by improved functionality and speed-up of the algorithms.

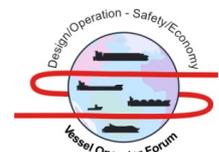


MARIN

organised networks

MARIN organises the following networks:

- Cooperative Research Ships
- FPSO Research Forum
- Cooperative Research Navies - Dynamic stability Vessel Operator Forum



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