

## LAURA – JIP LAUNCH AND RECOVERY OF ANY SMALL NAVY CRAFTS

### Background

Navy operations are more and more dominated by operation with small craft from larger platforms. Interceptions and boarding's are done with fast manned RHIB's. Minesweeping gear is more and more carried by relatively small unmanned surface craft, while unmanned subsurface craft are already a dominant factor for some years for mine hunting systems. Unmanned (sub)surface vehicles are also foreseen in the Anti Submarine Warfare scene and for the gathering of intelligence. These trends has consequences for the larger naval platforms as they become more and more craft carrying ships, where *modularity* is the most important keyword. A good example of such a platform is the US Lital Combat Ship (LCS).

This new role poses new challenges and demands to the design and operation of the naval platforms. One of these new challenges is the launch and recovery (L&R) of the smaller craft in a dynamic environment. For RHIB type craft the solution is often sought in some form of stern ramp (or slipway), while other craft are normally launched with a crane or davit system, which are often dedicated to the specific craft. The modular concept of the new platforms means that they must be able to operate with a wide range of these smaller craft. Continuing the current practice of dedicated L&R systems would mean that these platforms have to be fitted with a large number of dedicated L&R systems. This is expensive, space consuming, requires a lot of training of the crew and conflicts with RCS requirement.

So overall a need for having a standard launch and recovery system, which is easy to handle in a large environmental envelope, becomes clearly visible. Having a standard for a launch and recovery system will give the benefit, that ships of various nations can exchange craft with each other in operations and that the developers of new small craft can design to this standard interface. Overall this will extend the operational envelope of a single platform (being able to deploy several crafts without needing several launch systems) as well as operations with two

or more vessels cooperating in a (international) mission. In addition, cost savings are expected from the standardization.



This project will more specifically focus on the development of a reliable concept design for a single launch and recovery system, which can be utilized for a wide range of variety of small craft, and which can be operated in a severe hydrodynamic environment.



## Objective

The aim is 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. Such a system should comply with the following:

- The system should be flexible enough to handle a wide variety of small craft (50 kg – 12 ton).
- The system should be operational up to moderate sea states (4-5, possible up to 6).
- The system should preferably be used at low to moderate ship speeds.
- The system should be able for relatively quick L&R operations ( 5 min, targeting at launching every two minutes).
- The system should be operable with a limited number of crew.

The full chain will be regarded for a launch and recovery operation, so including handling and stowing. The focus will be on critical operational issues in relation to the environmental hydrodynamic conditions. The goal is to set a high operational limit and safety enhancement proven by analysis and testing in a relevant environment. It is aimed to obtain a feasible modular design.

## Scope

A two track project is proposed for the first **one year phase 1**. The first track A is aimed on systematically identifying the current and planned systems, describing their limits and deducing a general requirements specification. Based on this specification several possible solutions will be elaborated and compared. Critical parameters will be identified.

The second track B simultaneously focuses directly on critical design issues for several concepts on subsystem/component level, which are already known. The hydrodynamic test will be performed to elaborate solutions. The set-up will be such, that it will address the most interesting issues within the project organisation restrictions.

In the second **two year phase 2** of the project the results of both tracks will be used to generate, if possible one, complying solution, which

will be matured and verified by model testing and operational simulation, and which may be put forward as international standard.

## Organisation

LAURA will be conducted as a 3-year JIP in close co-operation with Navies, yards and suppliers. MARIN will act as JIP manager, sign participation agreements with all members and issue subcontracts. All participating companies will be represented in the LAURA JIP Steering Group with meetings hosted by one of the members every 6 months. Presentations, reports and other relevant info will be posted on the confidential project website.

## Deliverables

- Overview on launch and recovery systems for navy application.
- Insight into the operational chain of launch and recovery.
- Feasibility and operational limits of systems based on analysis and model tests.
- A modular Launch and recovery system design.

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