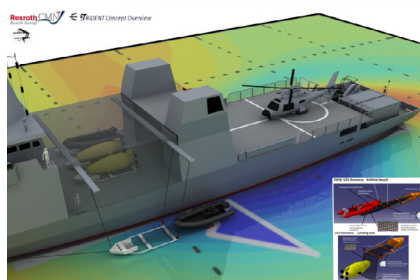


LAURA III – JIP

LAUnch and Recovery of Any small navy craft

Navy operations are seeing increasing use of smaller craft being deployed from larger platforms. Interceptions and boarding are conducted with fast manned RHIBs. In the mine countermeasures area, the trend is for minesweeping equipment to be carried by relatively small unmanned surface craft, while unmanned subsurface craft are already a dominant platform for mine hunting systems. Unmanned (sub-)surface vehicles are also seeing increasing use in the areas of Anti Submarine Warfare and for the gathering of intelligence to name a few.



These trends have consequences for the larger naval platforms as they increasingly become craft carrying ships, where flexibility is the key parameter. A good example of such a platform is the US Littoral Combat Ship (LCS). This new role poses challenges and demands on both the design and operation of naval platforms. One such challenge is the launch and recovery (L&R) of the smaller craft in a dynamic seagoing environment. For RHIB type craft, the solution is often found 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 flexible concept for these new platforms means that they must be able to operate with as wide a range of these smaller craft as practicable. Taking due account of these trends, continuing the current practice of bespoke L&R systems would mean that these platforms would need to be fitted with a large number of dedicated L&R systems. This is expensive, space consuming, inflexible, limits interoperability and requires considerable crew training. There is thus a clear requirement for a standard launch and recovery system, which is easy to handle in as wide a range of environmental envelopes as practicable.

Having a standard for a launch and recovery system will provide many advantages, not least 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. This will extend the operational envelope of a single platform (being able to deploy several craft 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 standardisation. To address this clear requirement, JIP LAURA was instigated in early 2011.





Organisation

LAURA is currently implemented as a JIP with Navies, Research Institutes and Industry members comprising both shipyards and equipment suppliers. MARIN acts as JIP manager, signing the necessary participation agreements with all members, and issuing subcontracts. LAURA is managed in a democratic manner by a Navy chaired Steering Committee, and meets on a regular basis. Studies are conducted in partnership with all participating companies, with all members having full access to reports and other relevant information via the confidential project website.

Find out more and get involved

JIP LAURA would welcome the active participation of new members, including navies, UXV suppliers and others, in the progress of the Phase III studies. To find out more and get involved:

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Objective

The aim of the JIP is the development of a design standard 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 as a minimum:

The system should be flexible enough to handle a wide variety of small craft (50 kg – 12 tonne).

The system should be operational up to moderate sea states (4-5, possibly up to 6).

The system should be able to be used at low to moderate ship speeds.

The system should be capable of achieving relatively quick L&R operations (5 minutes, targeting at launching every 2 minutes).

The system should be operable with a limited number of crew.

The full sequence of evolutions is being addressed by the JIP for the launch and recovery operation, thus including handling and stowing. The focus is on the critical operational issues in relation to the environmental hydrodynamic conditions. The goal is to set a high operational limit and provide safety enhancement proven by analysis and testing in a relevant environment, thus resulting in a robust and comprehensive interface standard.

Scope

To achieve the aims of the JIP a phased approach has been developed. Phase I, with an approximate 1 year duration, has produced:

- A coherent and comprehensive set of requirements.
- Fundamental and physical hydrodynamic tests of the seakeeping environment in the immediate vicinity of a range of mother platforms.
- The development and down selection of a range of concept design L&R, movement, handling and stowage systems.
- A draft interface specification for an L&R system.

Phase II, with an approximate 2 year duration focused on:

- Further develop the preferred L&R concepts to ensure a clear understanding of interface requirements for the range of required craft.
- Complete a detailed analysis of the environmental regime to ensure that operational issues and mechanical requirements are fully understood.
- Mature the drafting of the interface specification ensuring full engagement of the necessary stakeholders.

Phase III, a 3 year program which started 2015, is currently underway:

- Maturing the promising concepts (use of a cradle, extension of a davit system to unmanned crafts, use of planers and a lobsterpot concept for zero craft speed recovery).
- Developing enhanced simulations methods.
- Performing verification and validation by both model and full scale testing.
- Assure specifications for standardisation are flowing into the NATO Seaway and Mobility Group, drafting an ANEP on this topic.