

The Dutch Underwater Knowledge Centre (DUKC) is a network of Dutch knowledge providers on submarine technology.

# Retaining and developing submarine knowledge



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DUKC was established in 2004 to maintain, develop and position the existing Dutch underwater industry and related research institutes, both within the Netherlands and across the borders. This is done by a constant involvement in the mid-life upgrade of the existing Dutch navy submarines, as well as the early phases of the programme to replace the Walrus Class submarine. Keeping the knowledge alive and further developing it with time is important for all parties, particularly the Dutch navy, as the construction and building of the current submarines dates back from the eighties and early nineties.

Over the years companies like Nevesbu and RH Marine (the former Imtech Marine) have been closely involved in the life extension programme of the Walrus, ensuring its availability beyond 2025. Updating platform equipment, electronic instrumentation, sonar equipment and modernising consoles are just

small examples of what has been achieved already.

MARIN is also playing an important role to make sure submarine knowledge is maintained and further developed. Over the years a completely free-running model of the Walrus was developed, which is largely automated (see previous page). This model was especially useful for determining the limits and boundaries of brown water operations needed for the new type of missions required after the Cold War. Having the model available also enabled the Dutch navy to take decisions on some modifications to the outer part of the submarine that were needed for special operations. These model tests could be performed at short notice to ensure the feasibility of the modifications.

In the upcoming period the replacement activities on the Walrus will become a focus

point for DUKC by actively promoting good cooperation between the government, industry and R&D institutes within the so-called 'triple helix'.

An innovative approach to cooperation in the early conceptual design phase is necessary to examine aspects such as manning concepts, energy systems, data handling and life cycle costs. In the end this will benefit all parties involved, as besides a modern successor for the Walrus, the resulting new underwater knowledge can be applied to future projects. ▮

