Kontaktfrie operasjoner

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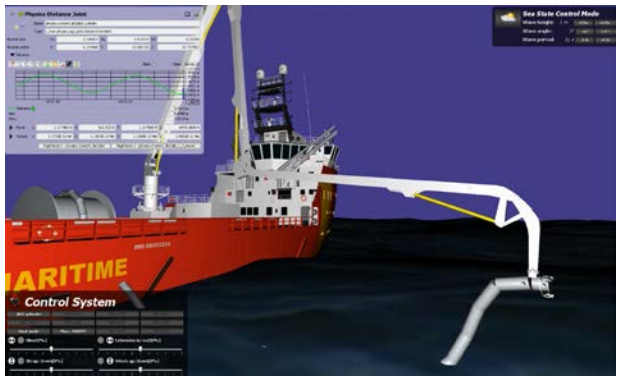
Kontaktfrie operasjoner ved bruk av robotarm ombord

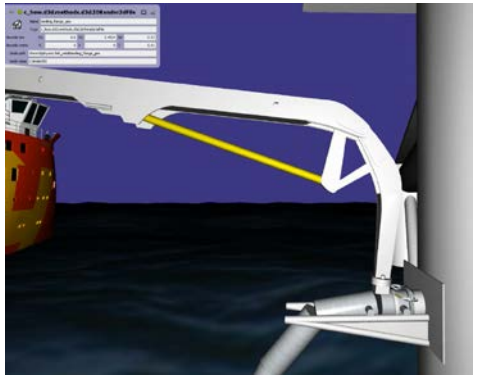
Hvorfor?

- Større fartøy gjør det farlig å legge til ved merd
- Forankring er tidkrevende

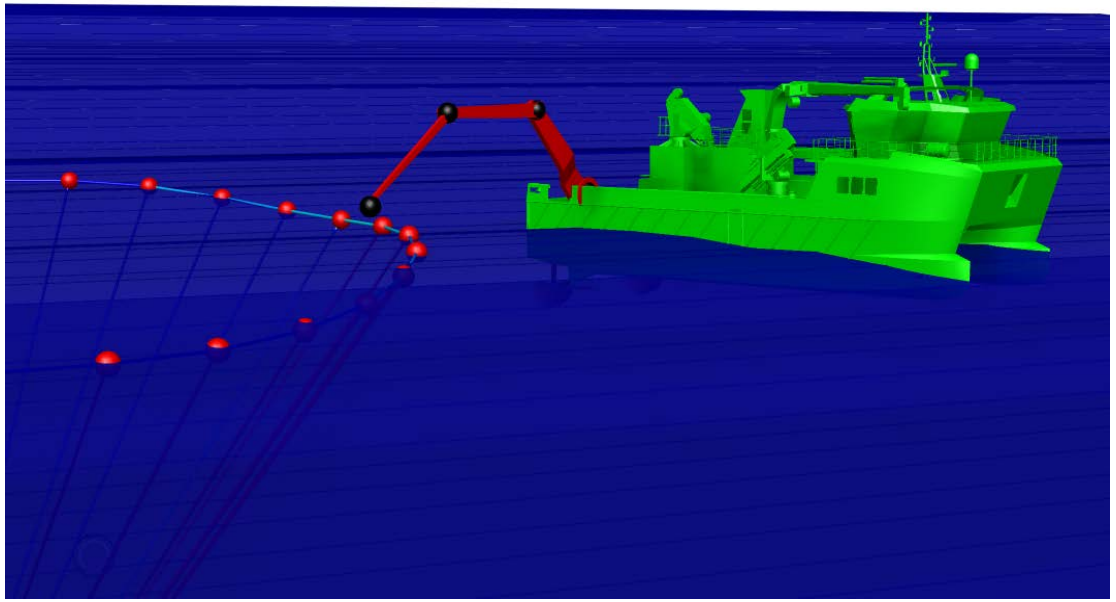
Hva har vi gjort?

- Sett på potensielle applikasjoner for robotarm om bord på servicefartøy
- Simulert hvordan servicefartøy og robotarm blir påvirket ved ulike værforhold, og hvordan de kan utføre operasjoner på akvakulturvirksomhet
- Laget regulatoralgoritmer for å styre robotarm
- Skalerte tester i laboratoriet med robotarm montert på en hexapod som emulerer bølgebevegelser

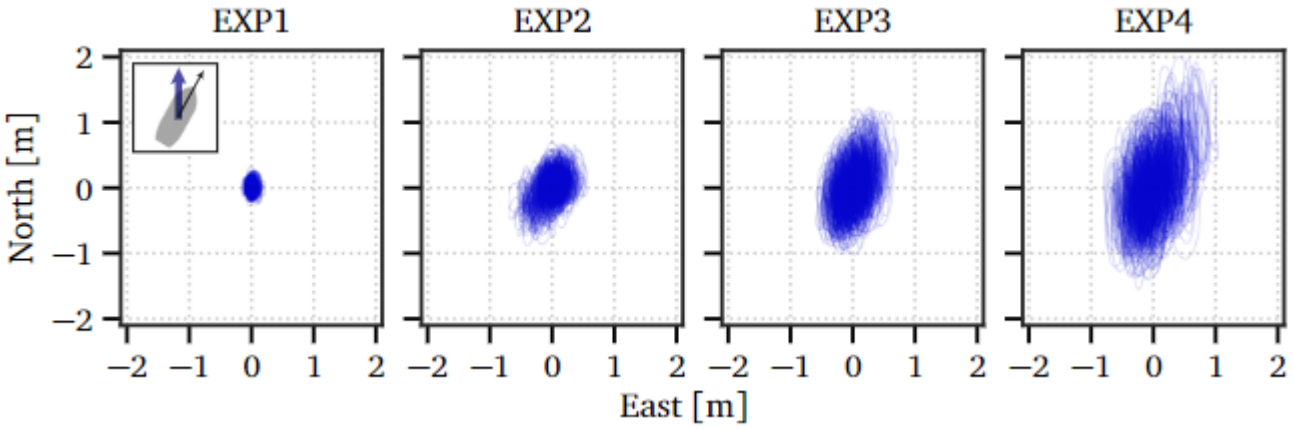




Illustrasjon: MacGregor



Resultater



Towards autonomous contact-free operations in aquaculture

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ABSTRACT

As offshore fish farms are established further away from the shore, increased exposure to the elements prevents regular operations from being performed safely with vessels moored alongside the flexible fish cage and personnel performing tasks standing on the collar. Due to the higher environmental impact at more exposed locations, new concepts and solutions for automating daily aquaculture operations need to be developed. One solution that has been proposed is to carry out operations using a robotic arm mounted on the main deck of a service vessel while it does stationkeeping next to the cage. The purpose of this article is to summarise our research on the viability of this concept. Vessel motions are simulated for a representative vessel model and realistic sea states, and a robotic arm does motion-compensated trajectory tracking while mounted on a hexapod platform moving according to the simulated vessel motions. Relevant challenges in marine aquaculture operations are summarised, the method used to obtain realistic simulated vessel motions is documented, the results of the experiments are presented, and the remaining open questions to evaluate the potential of the proposed system are discussed.

Kontaktfrie operasjoner

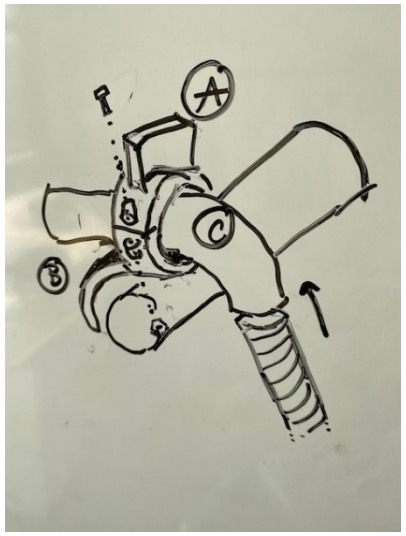
- ROV utsetting og innhenting
- Henting av dødfisk
- Kobling av overføringslange for fisk

Illustrasjon: LiftUp

Foto: Rostein AS

EXPOSED

Henting av dødfisk



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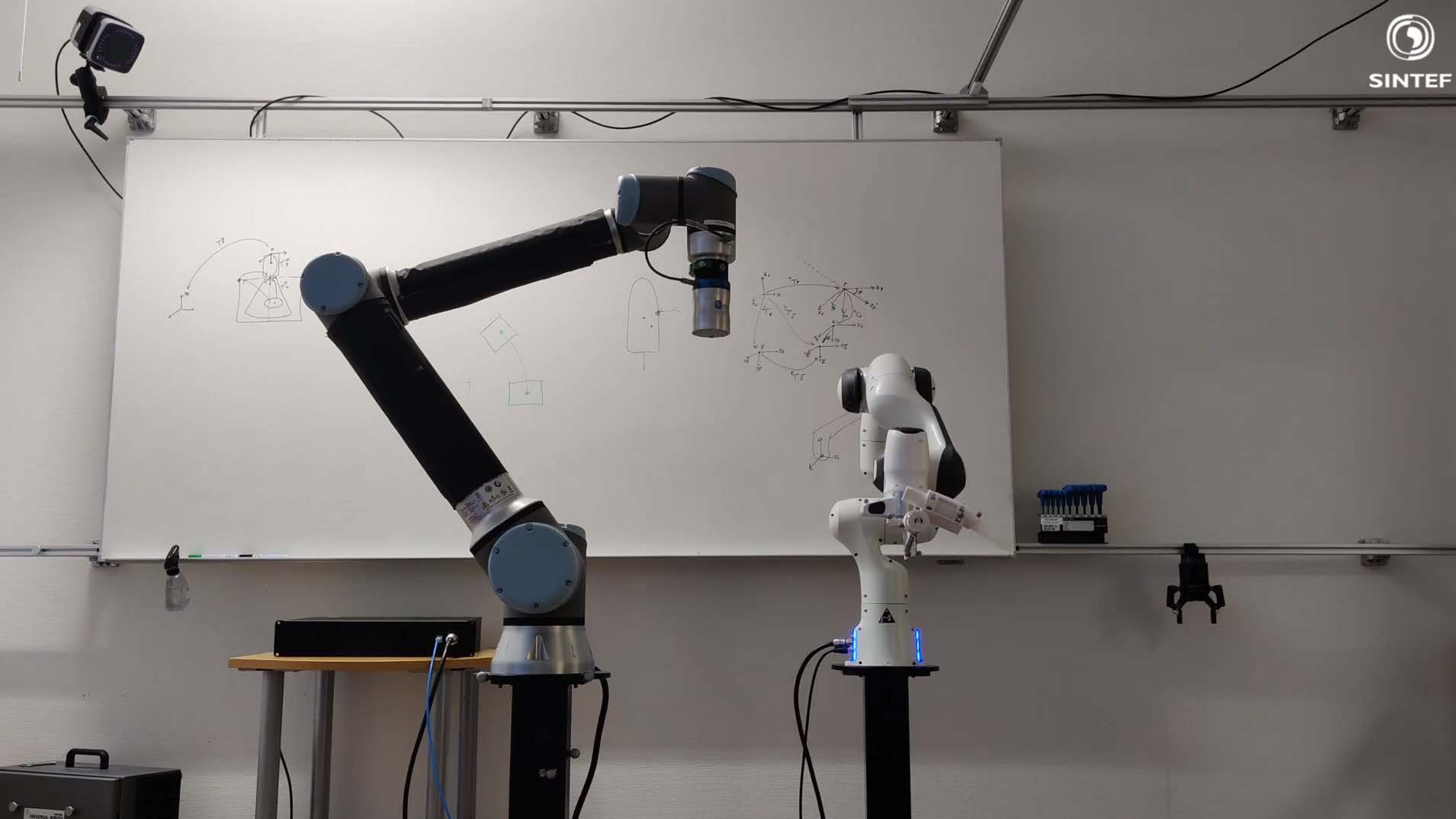
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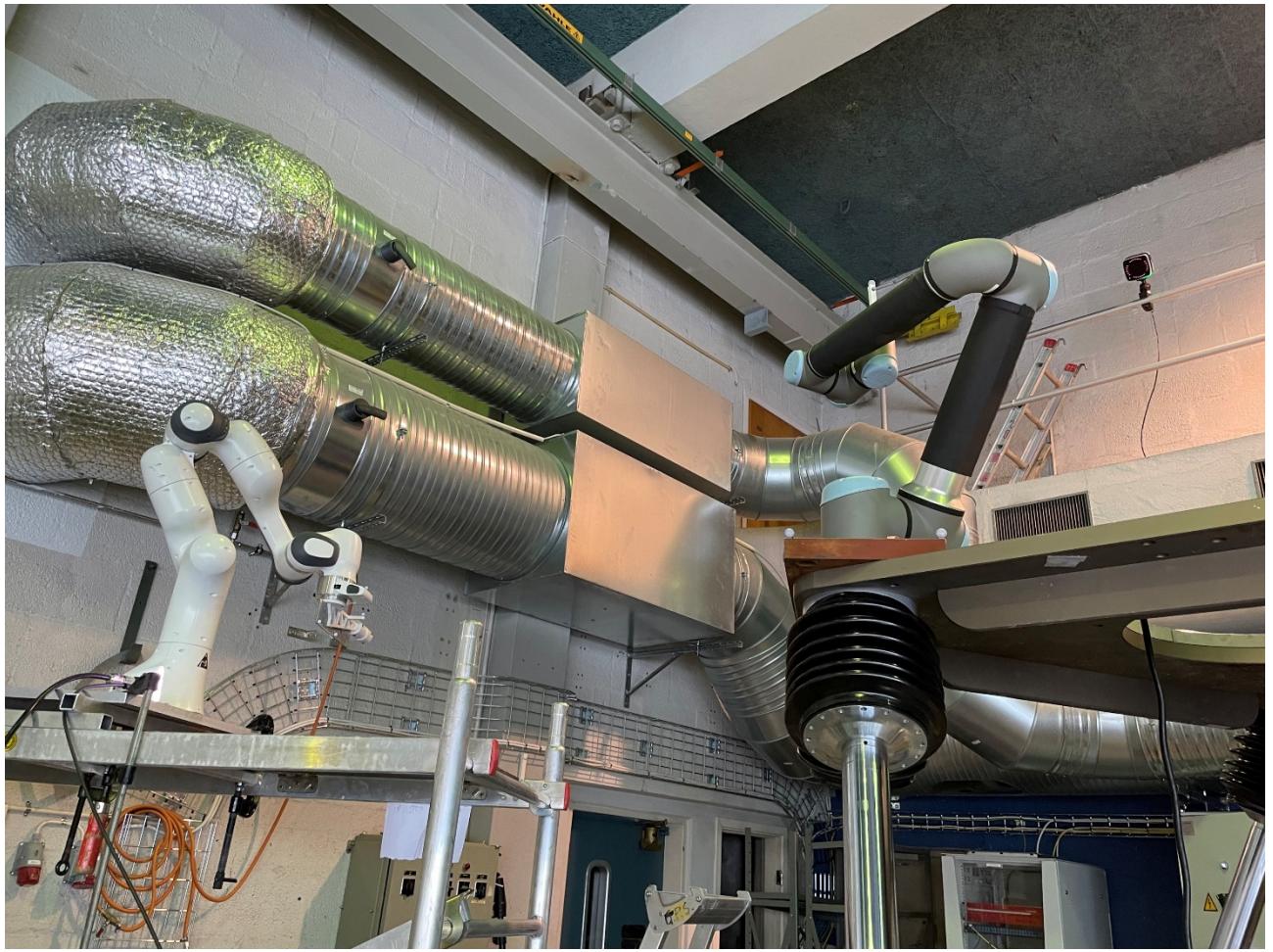
Neste steg



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