

INTERNSHIP ASSIGNMENT- Alpatron Marine BV

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Motivation

“WAGENINGEN, 26 JUNE 2020 - On the night of January 1st 2019, the large containership MSC Zoe sails on southerly route along the Dutch Wadden Islands during a northwesterly storm. The storm causes the ship to lose 345 containers, leading to large-scale pollution of the sea and Wadden Islands. The Dutch Safety Board asked the Deltares research institute and the Maritime Research Institute Netherlands, MARIN, to assist in an investigation.”

The Dutch Safety Board has conducted research to address above question. This was reported in the document ‘*Safe container transport north of the Wadden Islands Lessons learned following the loss of containers from MSC ZOE*’ published on the governments website.

Objective, research and approach

“To develop a method to visualize the safety margin of the container cargo on container ships from 9000 TEU using real-time INS, wave radar, and GNSS sensor data”

The following tasks are expected to be completed:

- Research of the safety envelope of sailing container ships
- Research how to calculate safety based on a set route of a container ship
- Design and program a visualization (OpenBridge) to aid the captain to manually increase the safety (Heading and / or speed change of the vessel)
- Propose a method on implementing the safety optimization to automated routing systems

Sources of information:

The Marin report and related documents show detailed information on the theoretical background of the conditions in which container loss can occur. Alpatron has a dedicated GNSS sensor in current development (electronics and (embedded) software) that could aid in the technical solution. Secondly, Alpatron/JRC has a radar with wave detection capabilities which may be needed in the safe route advise.