

# Autonomous Harbour Cleaning

# Digital Cities



## Technology at work, serving the sea

Today's harbours and waterways are often dirty with trash and plastic in the water. RanMarine presents autonomous aquadrones that remove unwanted material from water, and collect data about the environment.

Trash that is left in our waterways either drifts out to sea or must be fished out (this is costly and disruptive). The autonomous harbour cleaning solution will autonomously collect trash; will not disrupt marine life or traffic; will support recycling and the circular economy.

The WasteShark™ by RanMarine Technology is an aquadron that aims to provide low-cost, low-effort, high-intelligence, round-the-clock autonomous waste collection.

Leading to:

1. less marine litter
2. cleaner cities and improved well-being
3. improved operational efficiency of ports and harbours (less waste induced down-time)
4. better allocation of public funds (less public money required for waste management).



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## Competitive Advantages

- Marine waste management is a pressing global concern, with many varied approaches being tested
- Collecting waste in deep ocean water is extremely difficult; our approach prevents waste from reaching deep water; more than 80% of marine litter comes from land; we catch waste before it is carried out to sea
- Autonomous vessels are an emerging hot topic; the technology we are developing can be exported to many other fields of endeavor

## Target Markets

- The system we plan to create is intended for first deployment in the Port of Rotterdam. We also have strong expressions of interest from other ports and water authorities around the world (e.g. Thames River Authority in the UK, Port of Durban in South Africa) and from a Dutch waste management enterprise.

## Status and Traction

- WasteShark™ development completed till TRL8. Several pilots running globally. Leading to good traction and customer inputs
- A receptacle to store the collected trash (The SharkPod™) development started.
- Led and initiated by RanMarine as Business Champion With technology partners Nobleo Technology and DFKI

## Road Map

2017

- Development of WasteShark (autonomous swimming drone)

2018

- Further improvements on WasteShark plus development and verification of SharkPod to enable total system solution for autonomous harbour cleaning

2019

- Fieldtesting leading to more customer insights and further improvements on SharkPod

## Connect



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