



SUPER SMART TUGS

Bunker & Emission challenge

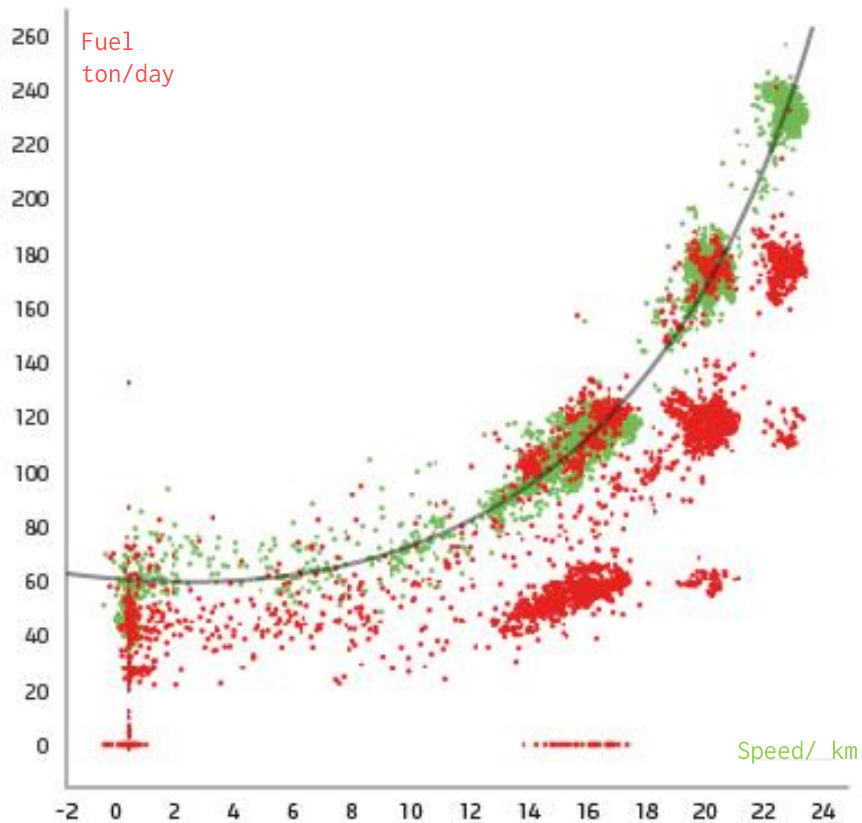
searoutes

TUGBOAT

Tug has certain speed.
8 knots is fast enough



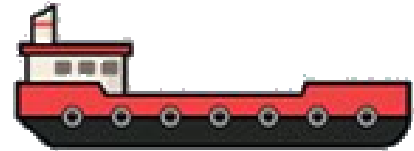
Why you sail faster,
when there is no rush?



PROBLEM

Emission & Money waste
because of overspeed tug

I want to be fast!
Then in can chill out



ROTTERDAM'S AVERAGE TUG JOB



Average job 1,5 hour



675 litre



1556 kg CO2 emission



265 trees



276 USD

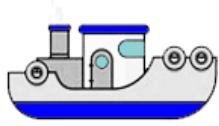


*based on AIS Data

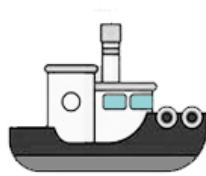
BUNKER COST



kotugsmit



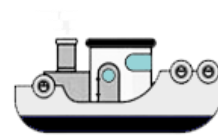
fairplay



bugsier



multraship



iskes

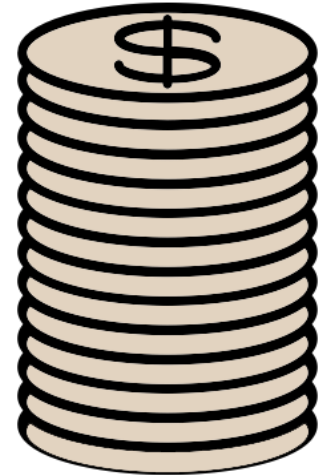
31 Tugs

5 company

51 job/day

465 USD/ MGO/Mt

5,2 Million\$



*1 hour = 450 litre

5,1 Million
Tree

CO2 EMISSION



GOAL

How can we increase and intensify tugboat's master cooperation for slower-steaming mobility?

SOLUTION

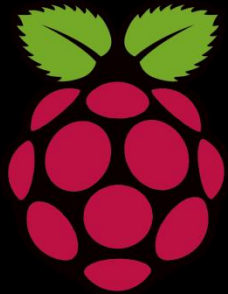


SUPER SMART TUGS

A platform that put tugboat master in competition to save fuel emission

MODULES

IoT Device



Rasp Pi
AIS Receiver

Algorithms

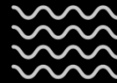
Tugboat matching



Fuel Consumption



Tidal Stream



SUPER SMART TUGS

Gamification interface

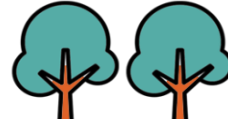
**LIVE
DEMO**

SAVING POTENTIAL TUGS IN ROTTERDAM



10-20%

SAVING



2 KM OF

FOREST

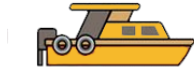


1 MILLION EURO

MORE POTENTIAL



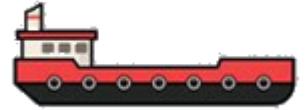
Harbour ferries



Water taxi



Pilot boat



Bunker barges

And more...

NEXT LEVEL?



Searoutes.com



Casten
IoT



Pierre
Tech



Lara
Designer