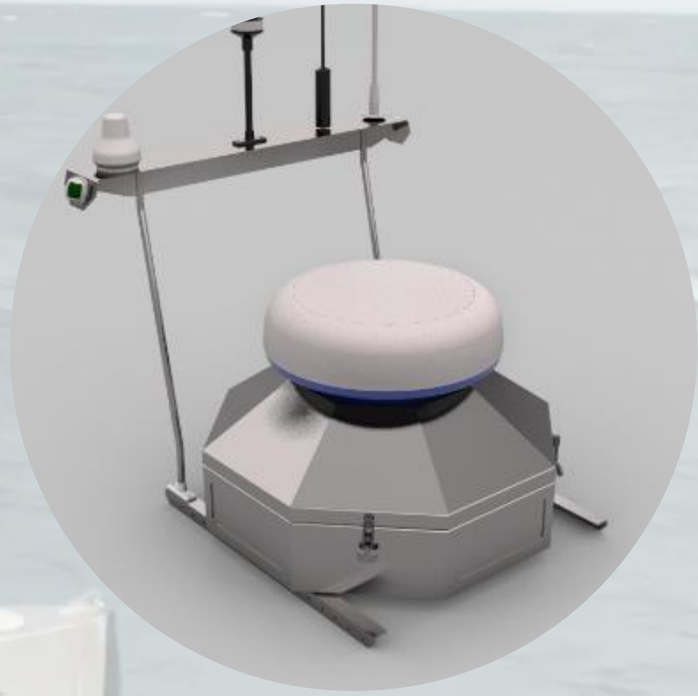
Mind for Ship

Never send a man to do a machine’s work



www.mindchip.ee

MindChip

ARTIFICIAL CAPTAIN

MINDCHIP in brief

MindChip is a deep tech company developing and producing the modular Artificial Captain (AC) unit enabling the autonomous navigation of both manned and unmanned surface vessels.

The story of MindChip began in 2018 in Kuressaare, Estonia, as a result of a collaborative project between TalTech Marine Competence Centre MARTE and MEC Engineering Solutions.

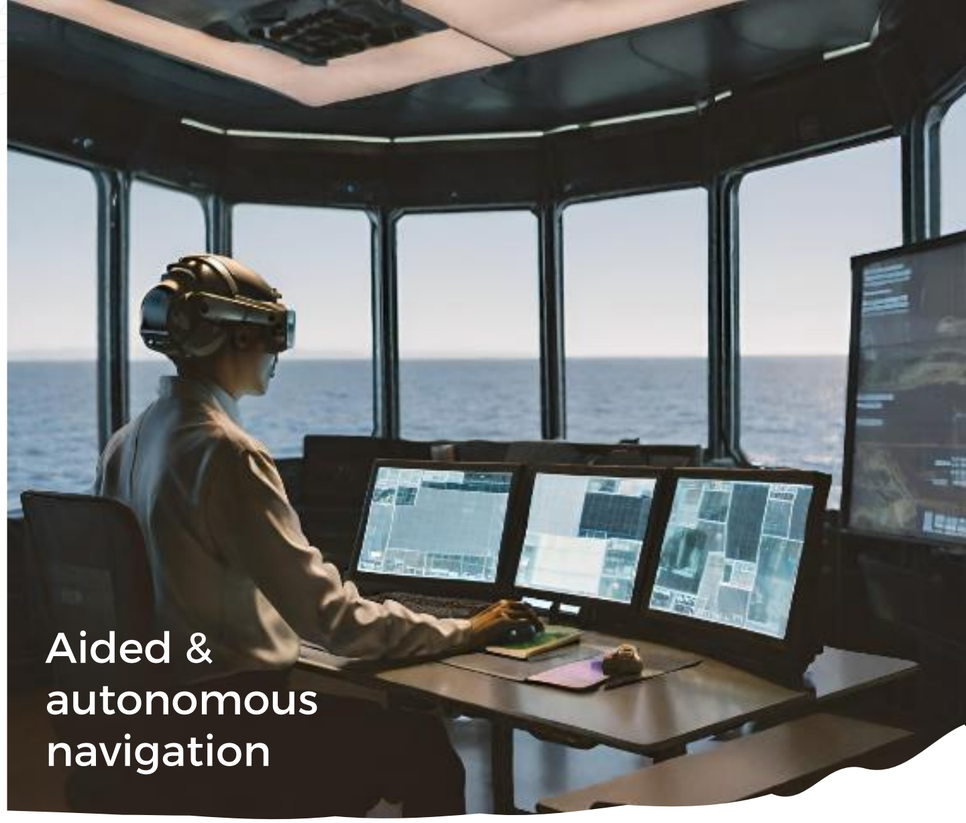
Since 2021, the outcomes of this collaboration, as well as the IP's of later R&D projects, have been consolidated into the MindChip. Until now, about 1.3 MEUR has been invested into the product development.

In 2023, MindChip delivered its first AC-equipped autonomous vessel to the client and has its own smaller autonomous vessel for demonstration and testing purpose.

New cooperation projects with border guards, naval and civil sector are under evaluation by funding bodies.

The company has succeeded in developing a market ready AC and is ready to expand its sales to the European markets and beyond.



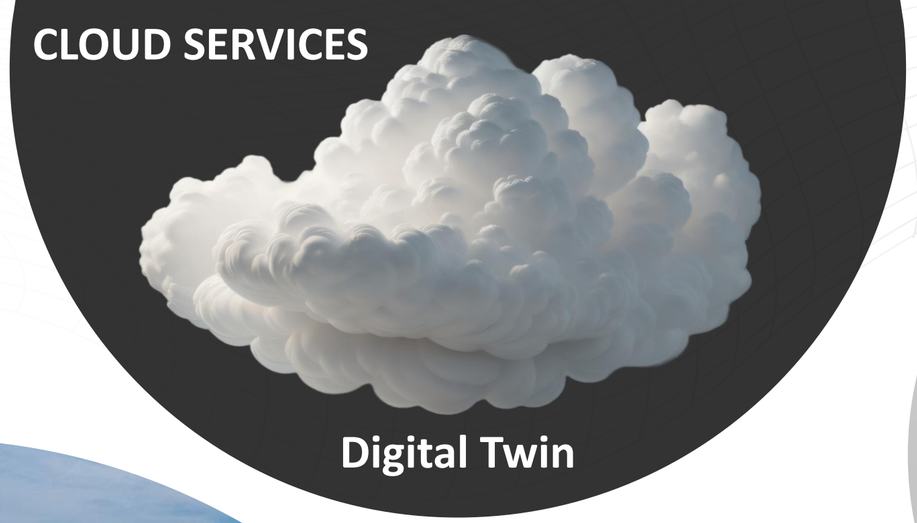


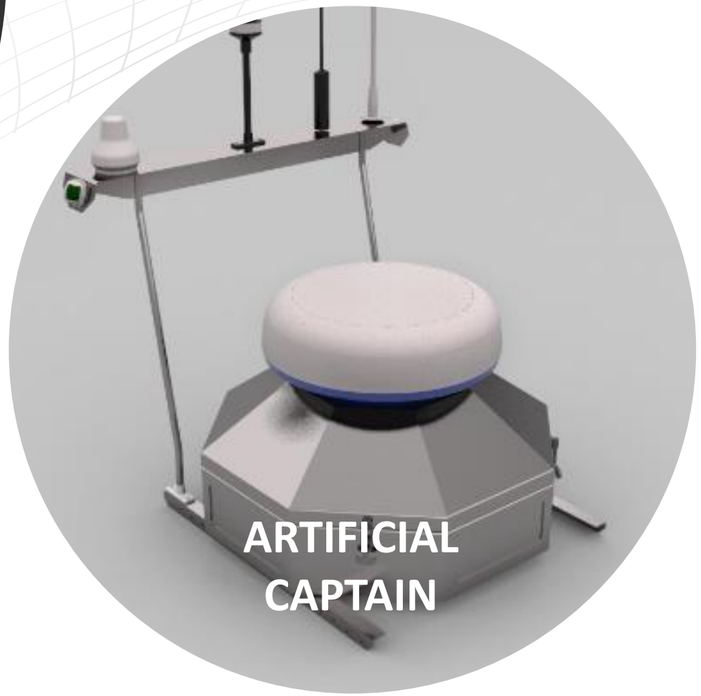


PROBLEM

A HUMAN IS NOT OPTIMAL FOR ROUTINE MARINE OPERATIONS

MindChip









VISION

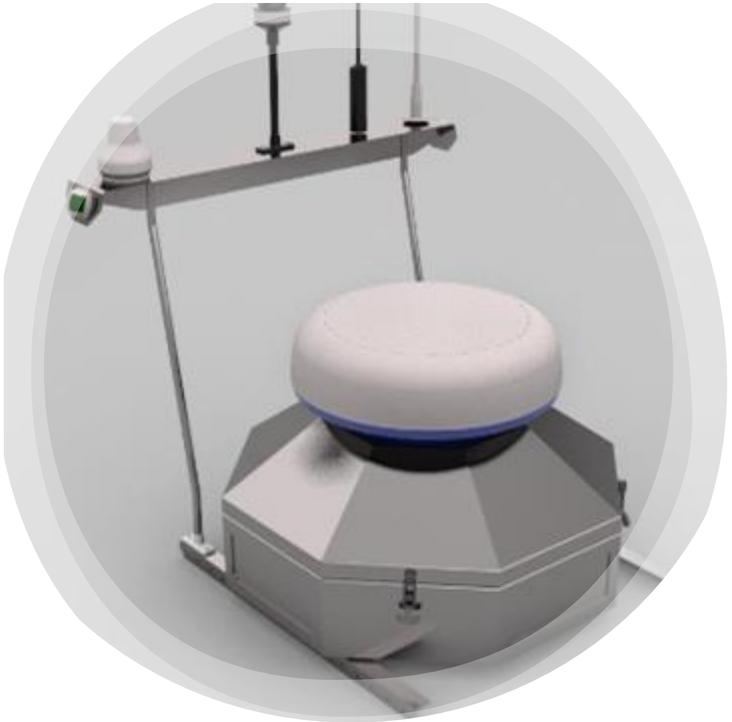
Replace a human with machine-driven situational awareness & navigation capabilities

provided by MindChip's

Artificial Captain



PRODUCTS



SITUATIONAL AWARENESS & NAVIGATION

ARTIFICIAL CAPTAIN

- AIS (class B)
- X-band maritime Radar
- mmRadar (up 100 m visibility)
- GPS
- Machine vision cameras
- Distance measurement cameras
- PTZ camera
- 4G, WiFi, satellite



OPEN SEA

MC-6000

- LxBxT 6.2x2.5x0.4
- Payload 500 kg
- Diesel-electric
- Range 500 km
- Max speed 7 kn
- Sonar launcher

VIDEO: https://youtu.be/koKxkKHzH5E



HARBOURS AND SHELTERED WATERS

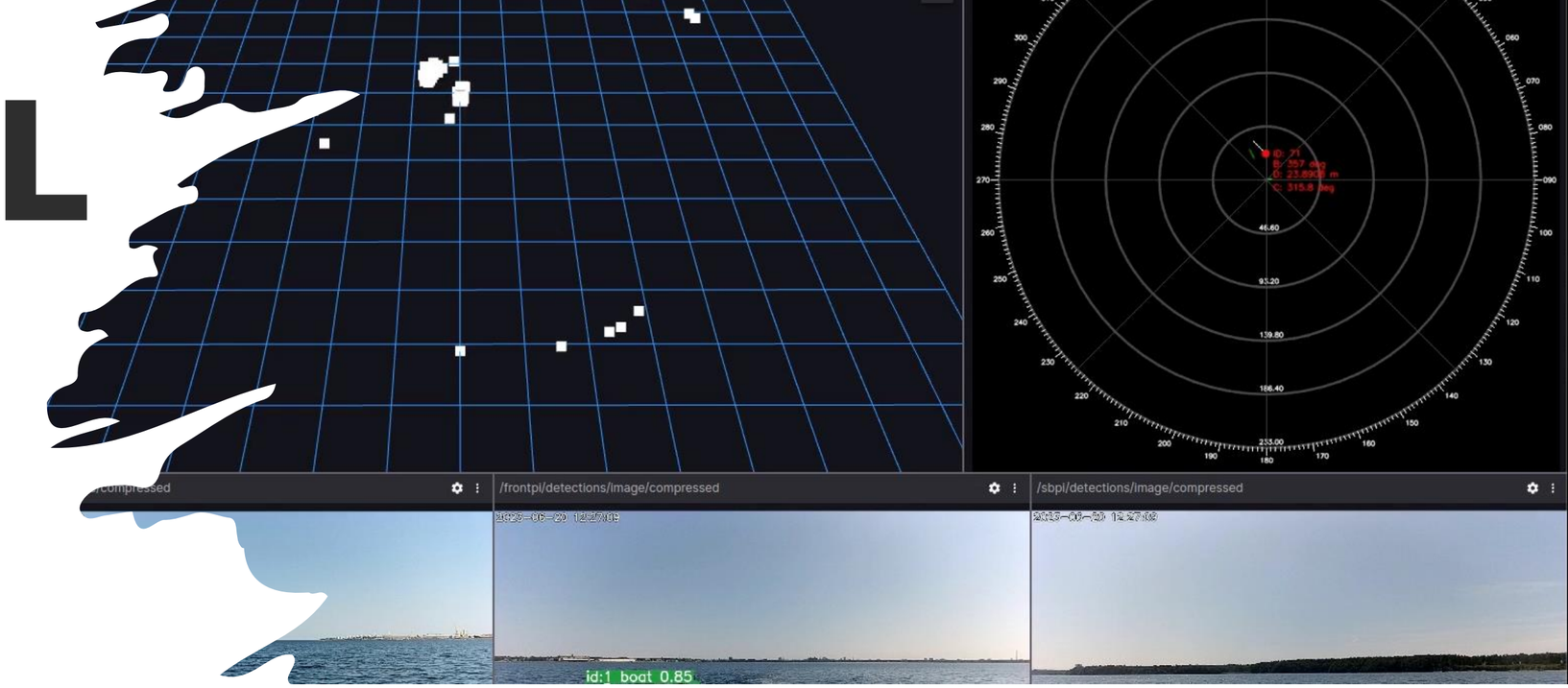
MC-2500

- LxBxT 2.6x1.1x0.2
- Fully electric
- Payload 100 kg
- Range 100 km
- Max speed 6 kn
- Autonomous docking station

MindChip

ARTIFICIAL CAPTAIN

Maritime Situational Awareness & Autonomous Navigation Solution

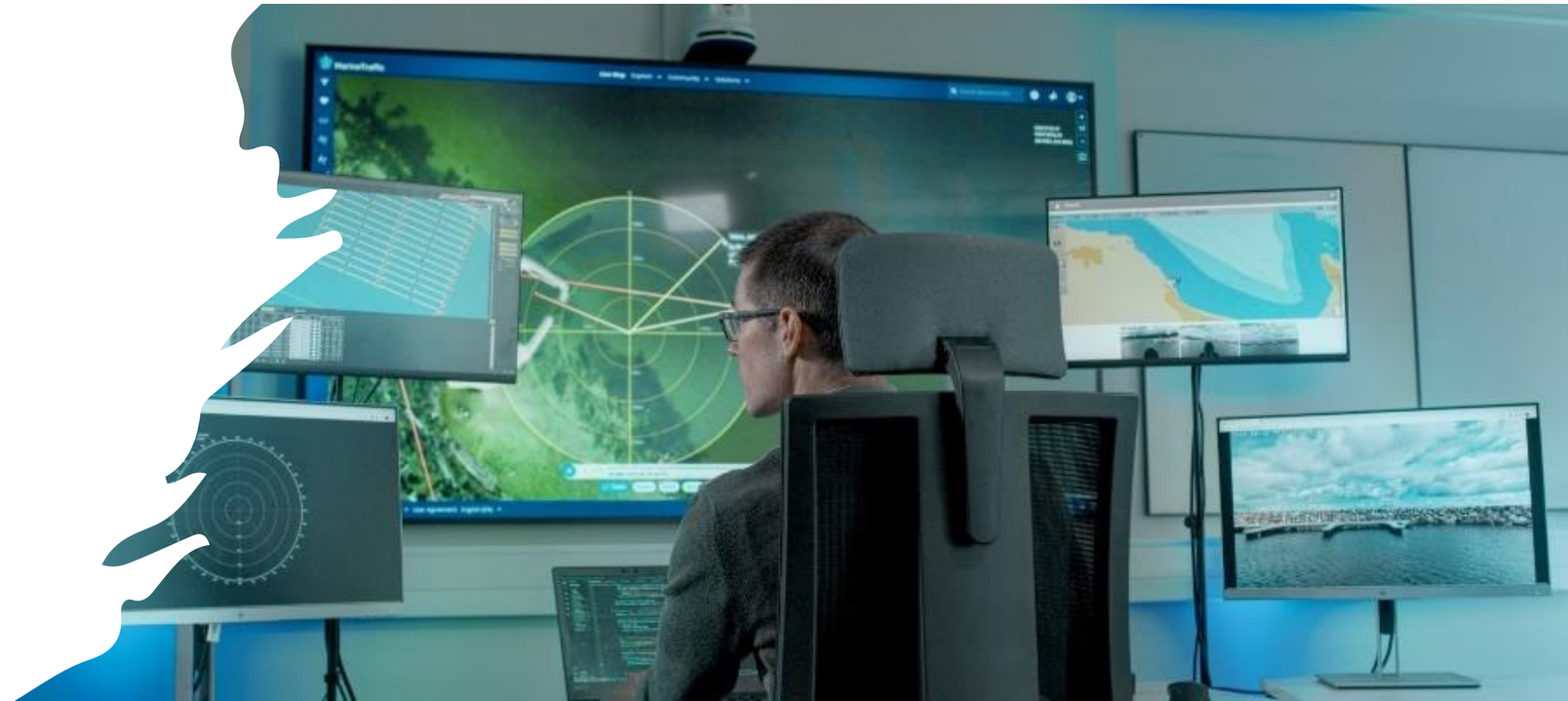


SITUATIONAL AWARENESS

- AIS (class B)
- X-band maritime Radar (up to 36 nm range)
- 4x mmRadar (up 100 m range)
- GPS module
- 4x Machine vision cameras
- 8x distance measurement cameras
- 1x PTZ camera (360º vision)

REMOTE CONTROL & COMMUNICATIONS

- Land-based Control Station
- Radar & video stream
- Telemetry
- Full remote control
- 4G, WiFi, satellite



Most shipbuilding companies are looking towards autonomous systems



There are about **25,000 ships** in Europe, the average age of which is about 15 years

Maritime infrastructure is booming!



There are **100+ offshore** wind projects EUROPE slated for the coming years with a total value of **~ 200 B EUR**

Clean and safe harbors



There are over **500 ports** in Europe with the need for underwater monitoring

MARKET

MindChip

TRACTION OF CLIENTS

COMPLETED

OPERATIONAL PROTOTYPE (completed)



PORT OF TALLINN

COMPLETED

SITUAT. AWARENESS & NAVIGATION FOR MANNED VESSEL (completed)



Baltic Workboats shipyard

COMPLETED

ASV FOR FISH STOCK MONITORING (delivered)



TARTU ÜLIKOOL 1632

LOI

WINDFARM PLANNING AND MAINTANANCE



UTILITAS

LOI

ASV HARBOUR MONITORING VESSEL



PORT OF TALLINN

PIPELINE

RIIGILAEVASTIK

SAARTE LIINID

BLRT GRUPP

elering

Enefit Green

ESTONIAN NAVY · EESTI MEREVÄGI

KESKKONNAAMET

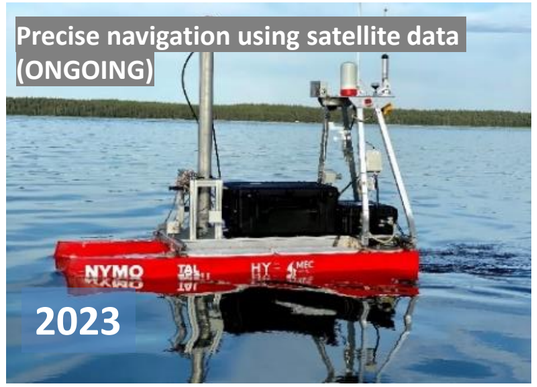
MindChip

ONGOING & NEAR-TERM PROJECT

AIRE



ESA BIC



Horizon Europe: CERTIFY



Port of Tallinn



BLRT



Estonian State Fleet



EDF FEMMICOS

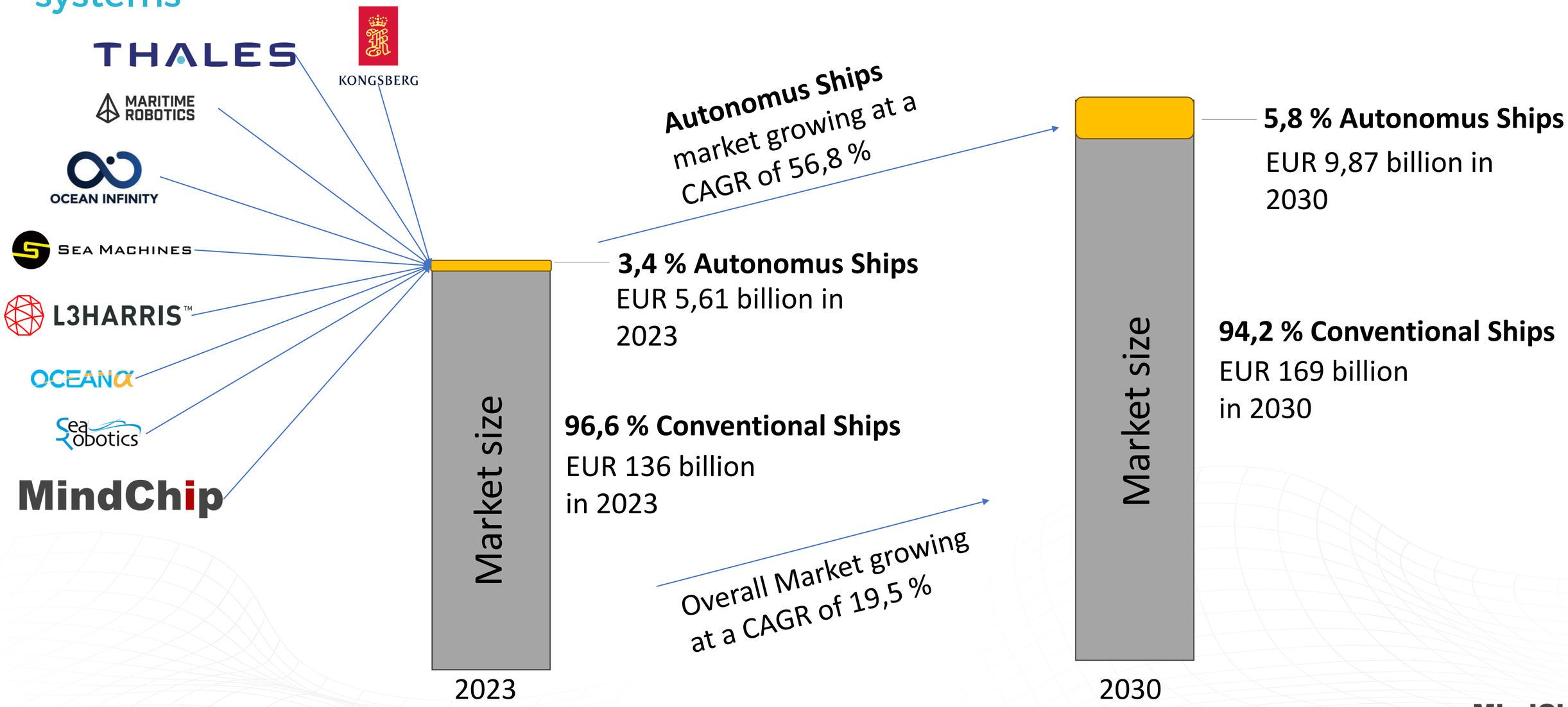


Horizon Europe: SEA-SAB



COMPETITION

Key developers of autonomous ships and systems



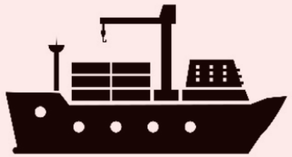
https://www.fortunebusinessinsights.com/industry-reports/autonomous-ship-market-101797#:~:text=The%20global%20autonomous%20ships%20market,Hardware

USECASE

Autonomous ship for bathymetry

CONVENTIONAL VESSEL

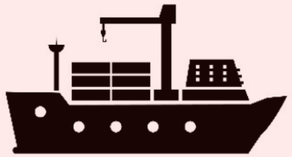
Transport and waiting time



€€€

+

Conventional ship cost



3…5 MEUR

+

Staff in two shifts



4…8 FTE

+

Accommodation



€€€

=

€€€

AUTONOMOUS VESSEL

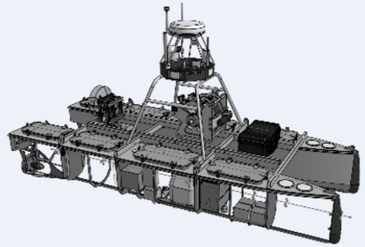
Transport



€€€

+

Autonomous ship costs



0,5 MEUR

+

ASV operator

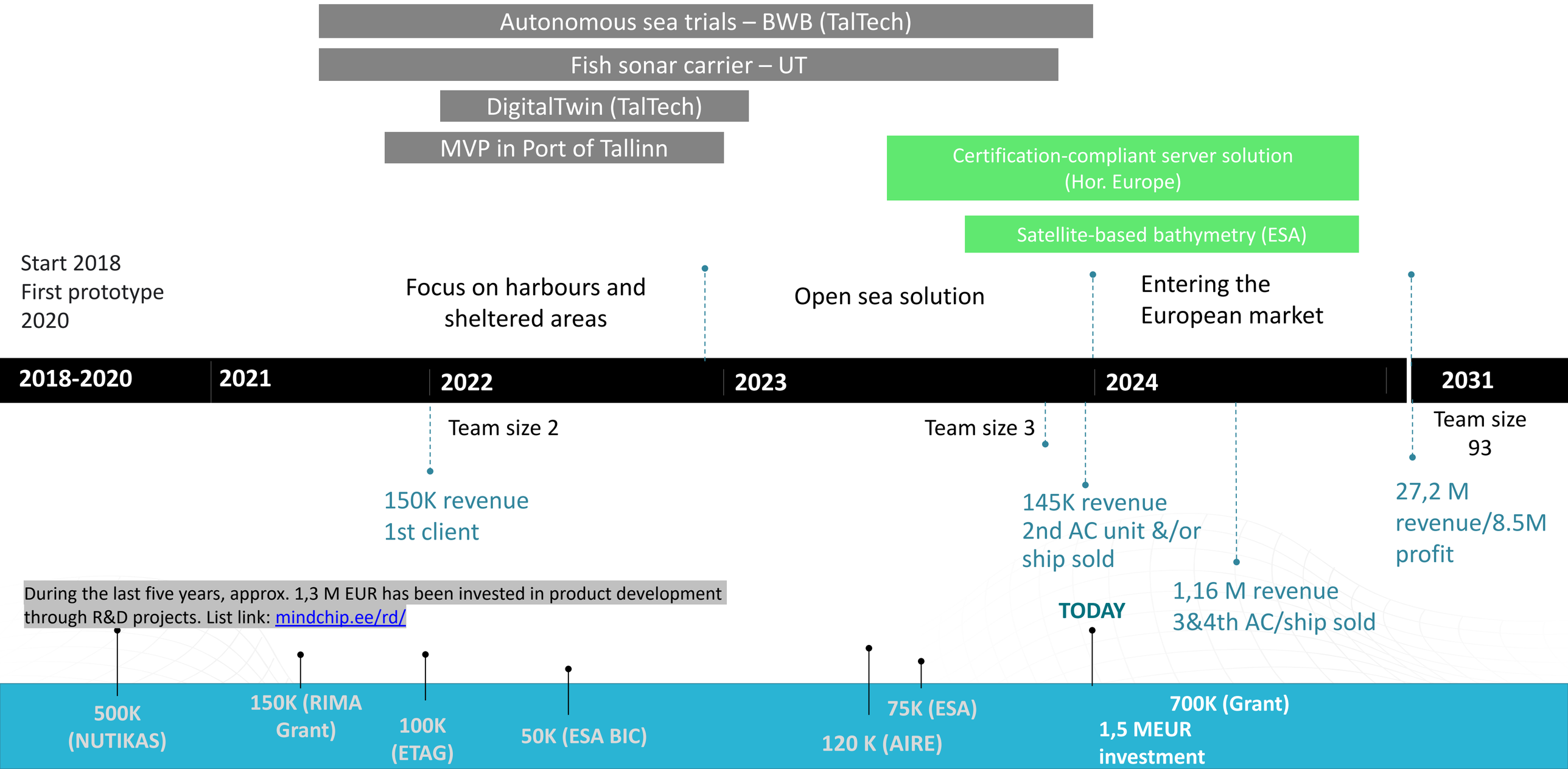


0.5 FTE

=

5 x cost reduction

ROADMAP & INVESTMENT



During the last five years, approx. 1,3 M EUR has been invested in product development through R&D projects. List link: mindchip.ee/rd/

TEAM



HEIGO MÕLDER
PhD
CEO



MART ENOK
MSc
CTO



KRISTJAN TABRI
PhD
Marine Engineering



PIRKO KONSA
BA
Business developer



INDREK ROASTO
PhD

Embedded systems developer



KARL JANSON
PhD

Machine learning



TANEL KERSTNA
MSc

Machine learning
Cloud services



TAAVI MÖLLER
MSc

Web applications, SQL database systems,



TANEL JALAKAS
PhD

Mechatronic systems
Embedded systems

Partners

MEC MARINE ENGINEERING

TAL TECH

FINANCIAL FORECAST

- The company is launching sales activities for AC units and AC-powered autonomous vessels in 2024
- The sales price of the AC-unit is estimated to be around 100 000 EUR, plus maintenance and provision of SaaS.
- The sales price of a newbuild sea-capable AC-powered monitoring vessel starts from around 500 000 EUR.
- In addition, the company is developing its own rental fleet, which is estimated to be rented at a daily rate of 2,000 - €2,500€, which is significantly more affordable than the rental cost of a manned vessel with similar capabilities (estimated from 6,000€/day).
- By 2031, 17 fully autonomous robot ships and 118 ACs will be sold annually. The company's direct sales revenue in 2031 is estimated to be 27 million euros.

	2023	**2024**	**2025**	**2026**	**2027**	***2028***	***2029***	***2030***	***2031***
Sales of autonomous ships	0	1	4	7	9	11	13	15	17
Sales of Artifical Captain	0	2	8	12	20	35	53	79	118
Clients Fleet size	0	3	15	34	63	109	175	268	404
MC own Fleet size	0	1	2	2	2	2	2	2	3
TOTAL FLEET		4	17	36	65	111	177	270	407

Total income	**100**	**1 158**	**3 916**	**6 629**	**9 770**	**12 021**	**15 567**	**20 424**	**27 164**
Total operating costs (incl. staff)	43	2 185	3 563	5 903	6 895	9 745	12 009	14 893	18 595
total of staff costs	12	621	1 330	2 295	2 936	3 687	4 484	5 466	6 681
Operating profit	**57**	**- 1 027**	**353**	**726**	**2 875**	**2 275**	**3 558**	**5 531**	**8 569**

Team	2	12	21	35	38	48	59	74	93

THANK YOU!

info@mindchip.ee
www.mindchip.ee

