



Welcome to the world of CMT

Circular Maritime Technologies

Presentation for the Network of stakeholders on end-of-life recreational boats and composites

Brussels, 11 October 2024



THE TOXIC TIDE

Shipbreaking

Ships from Europe, the US and Asia end up on beaches in India, Pakistan and Bangladesh.

They are taken apart by hand at great cost to people and the environment.

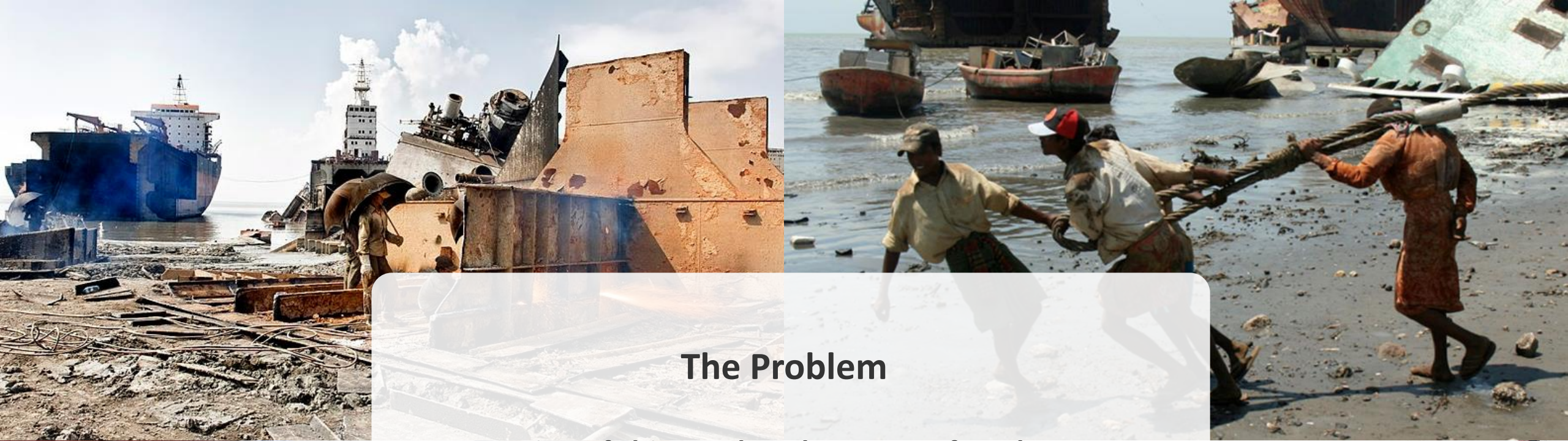
SINCE 2009:

7751
SHIPS BEACHED

436
DEATHS

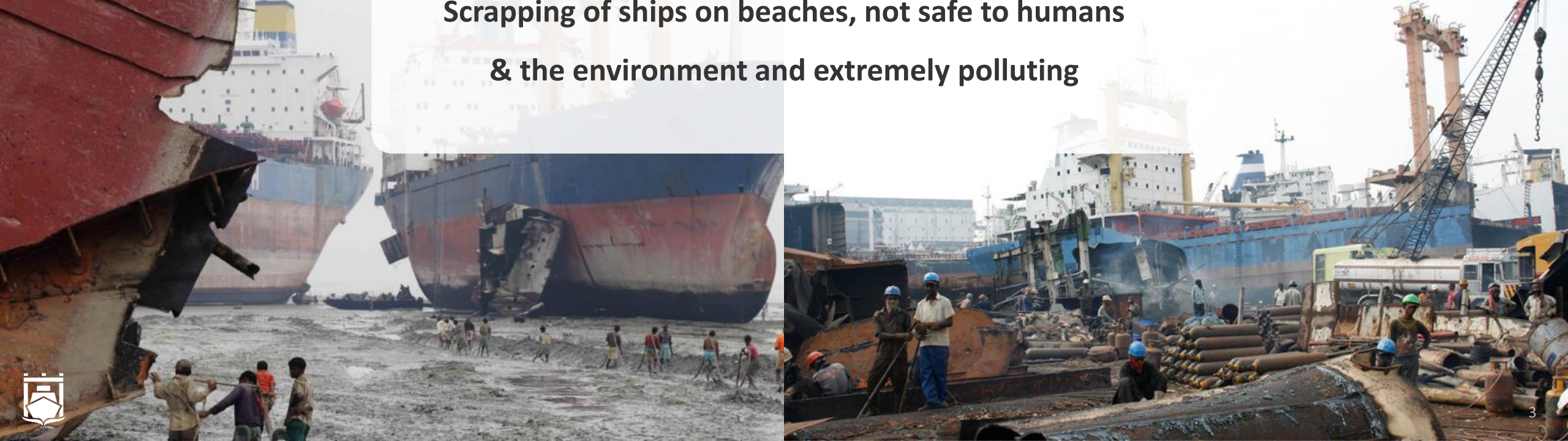
384
INJURIES



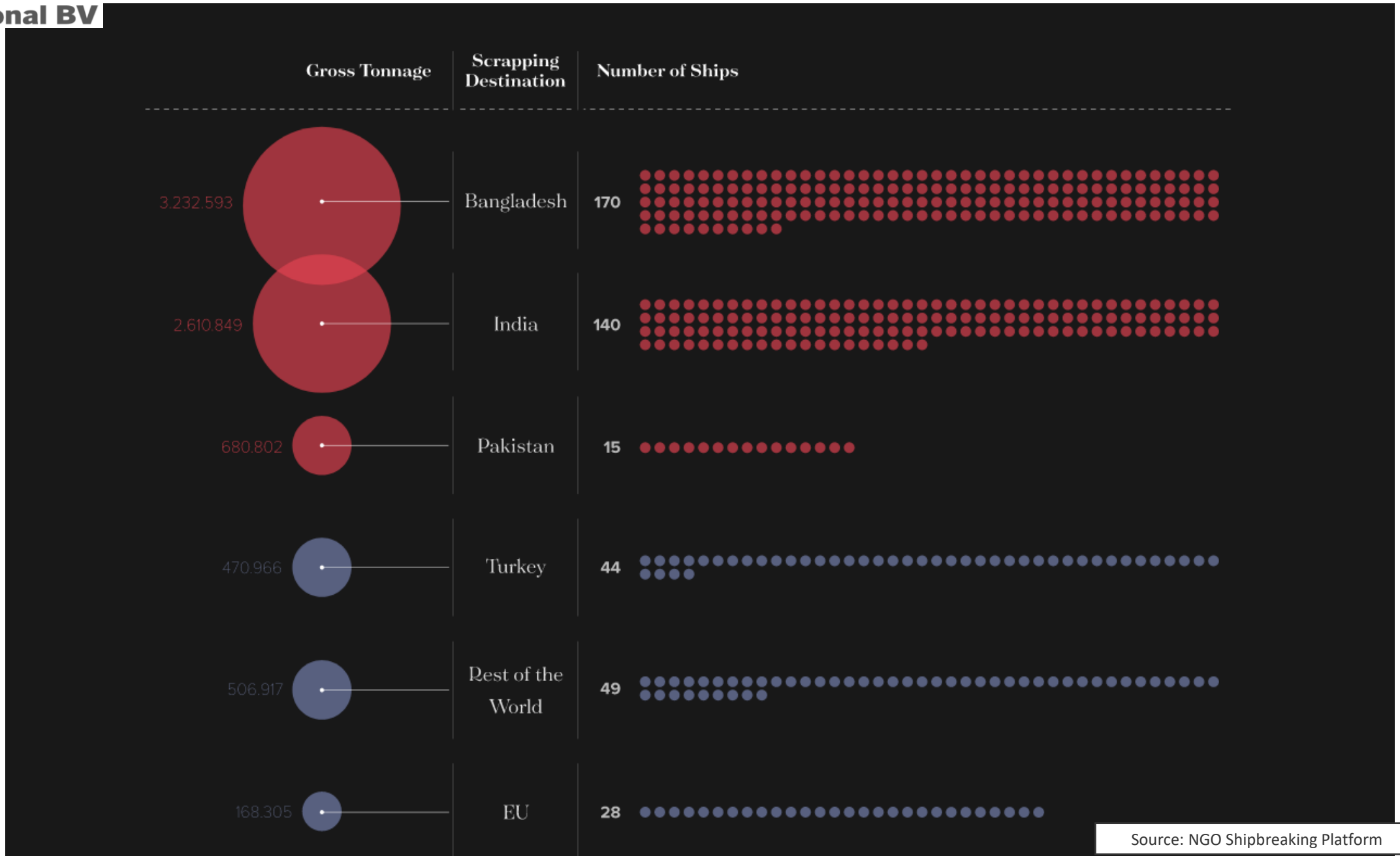


The Problem

**Scrapping of ships on beaches, not safe to humans
& the environment and extremely polluting**

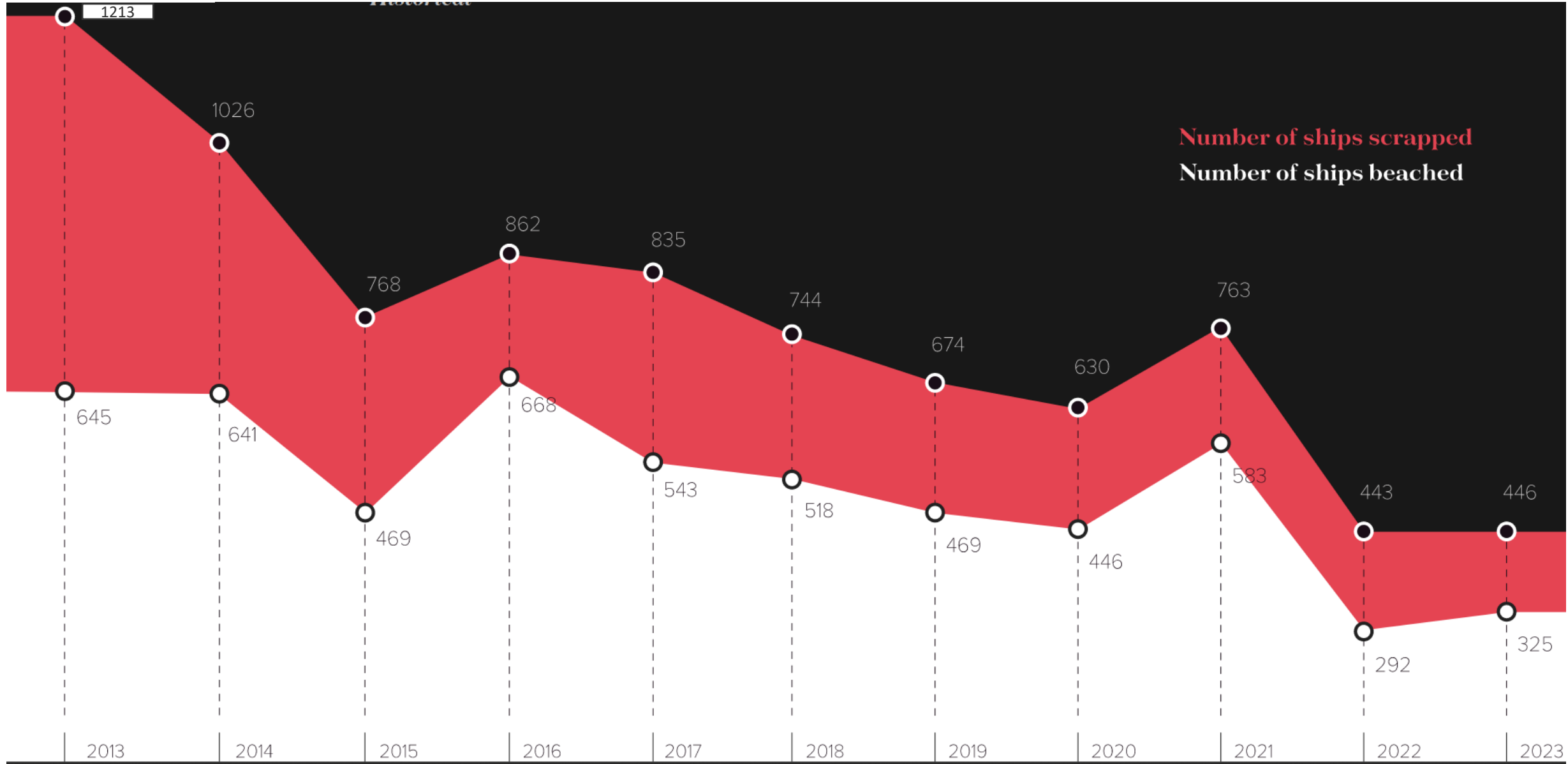


The ship scrapping nations



Source: NGO Shipbreaking Platform

The ship scrapping nations



The solution: the CMT yard



The CMT consortium of partners and suppliers



Global provider of world changing technical solutions.
Supplier of ship cutting technique and equipment.



Innovative company mechanical systems design and automation. Supplier of Automated Block Processing.



Leading global shipbuilding company with 35 yards world wide. Provider of Test and Demo location.



Pioneers and engineers in renewables, oil & gas and equipment solution. Lead engineer for CMT.



Pioneers in the recycling industry, giving previously burned waste a second life. Provider of pyrolysis unit.

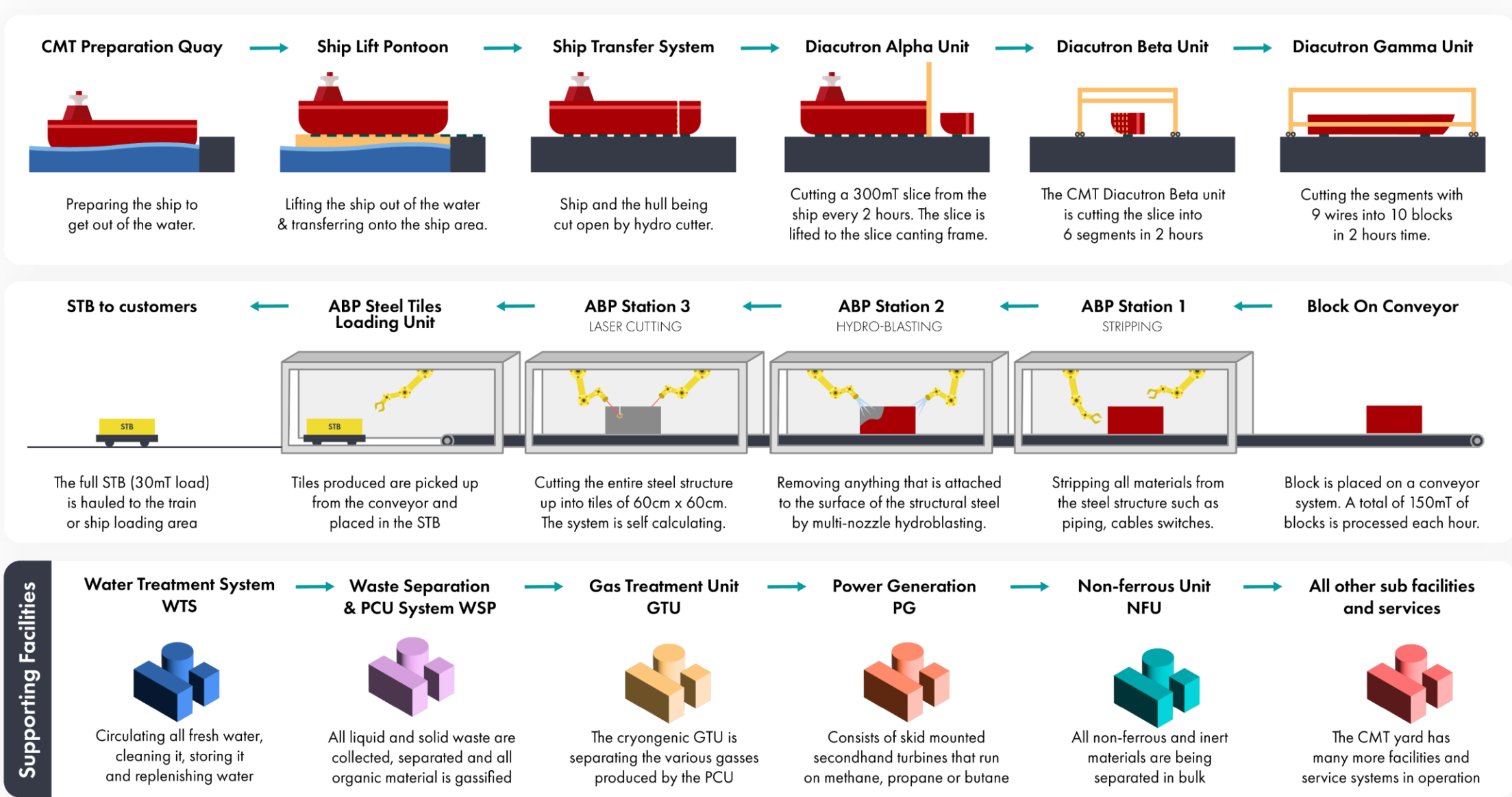


Experts in industrial automation in many sectors. Supplies the automation and operating system.

Funding partners



CMT Yard Process Sequence



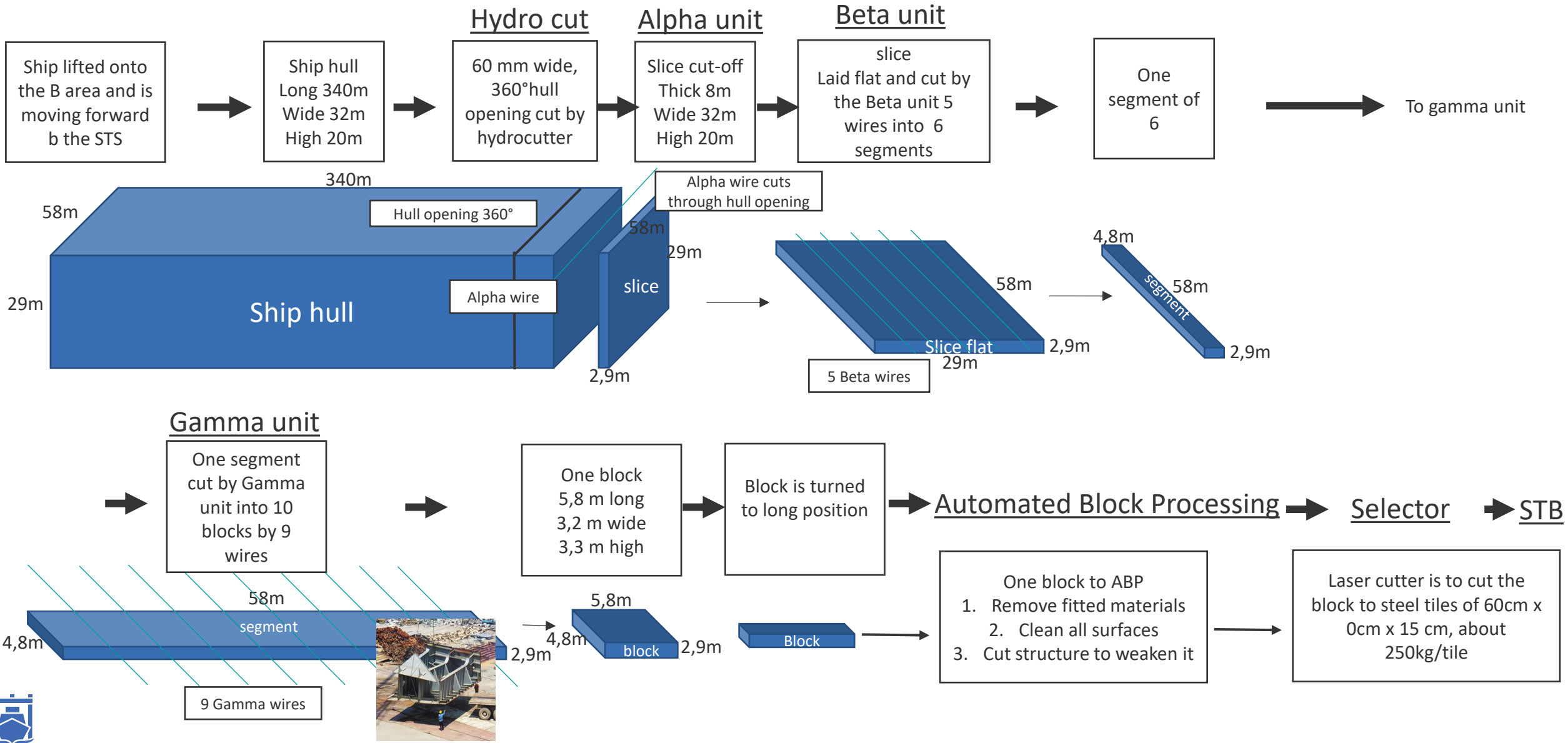
The CMT Diacutron Alpha wire

Diameter steel core cable	: \varnothing 20 mm
Outer diameter Alpha wire	: \varnothing 50mm
Number of pearls per meter	: 8-12
Length of the Alpha wire in the Alpha unit	: \pm 245m
Cutting speed capacity through 25mm steel	: \geq 1,6 mm/sec
Ship hull 20m high vertical cutting time	: \leq 90minutes
Rotational speed	: 8m/s – 30km/hr
Lasting time Alpha wire, true cutting hours	: \geq 100 hours

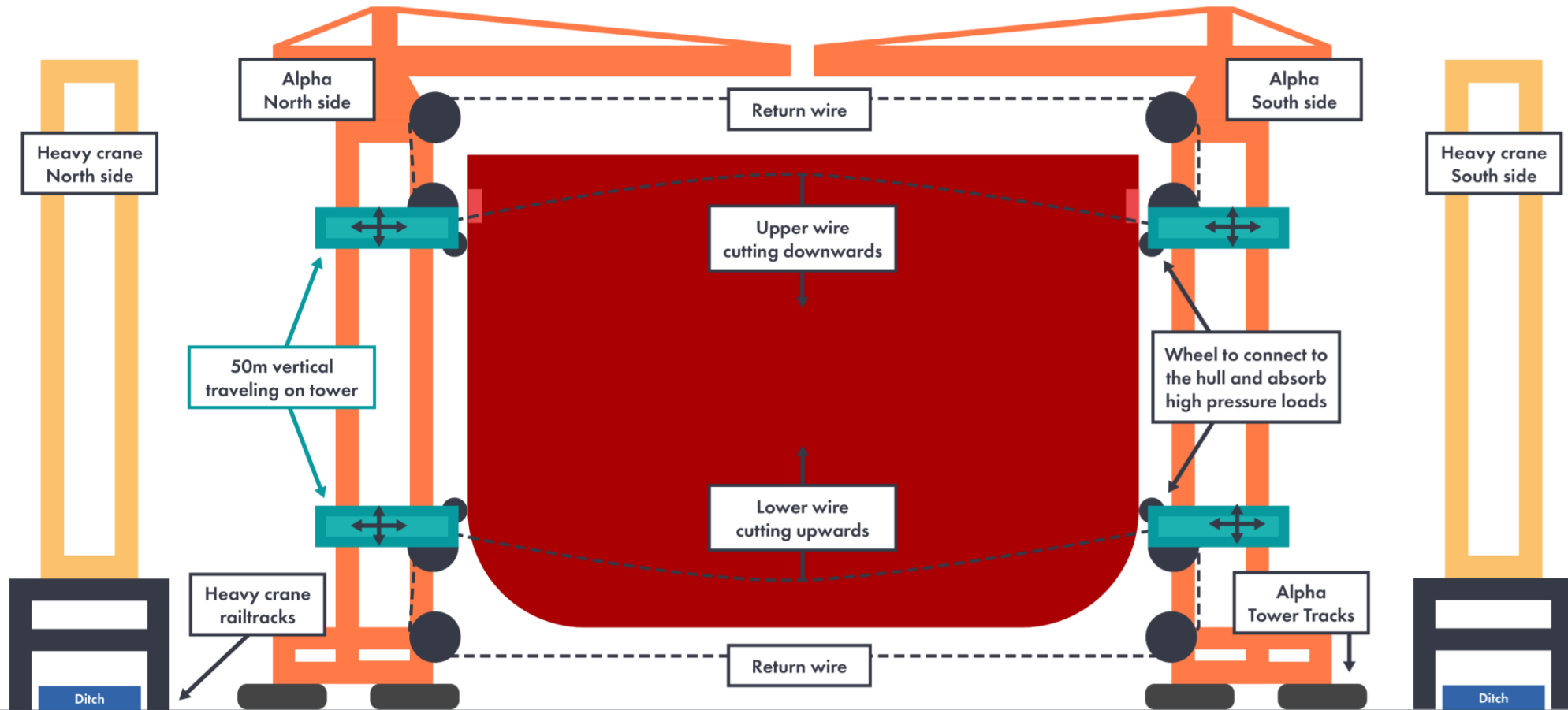


CMT Diacutron cutting a very large ship hull

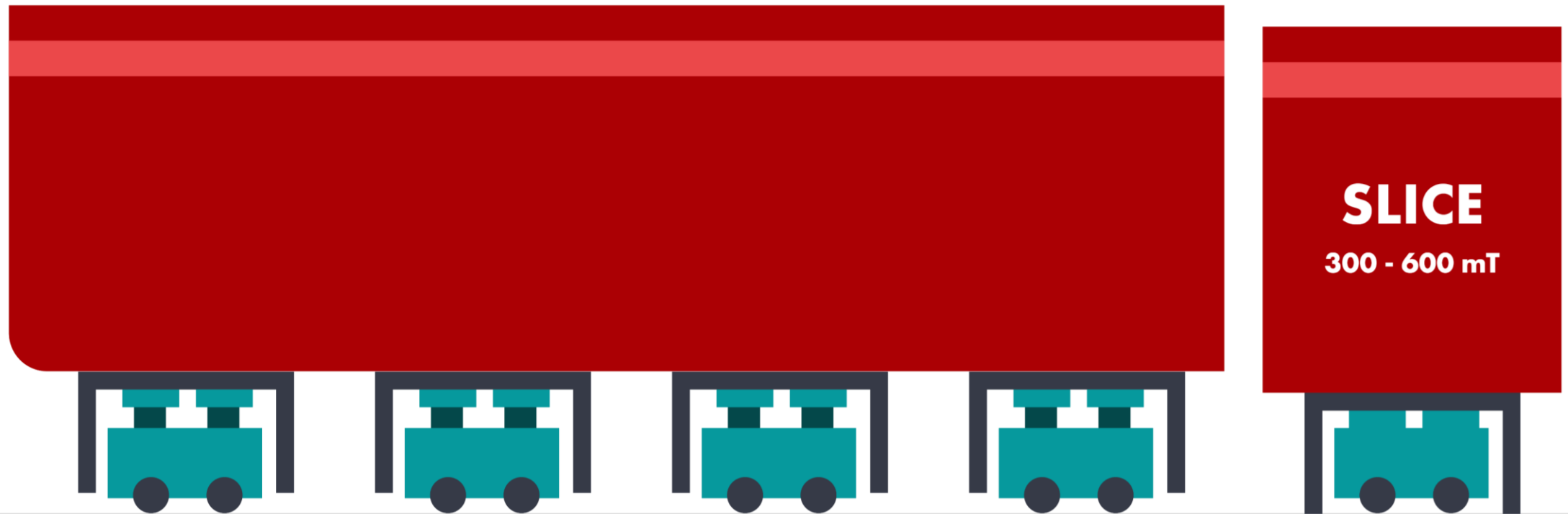
340m long, 58m wide, 29 high (VLCC)



CMT Diacutron Alpha Unit Cutting a ship in high speed



Cutting of the 300mT slice from the ship and moving it away, every 2 hours



Cutting of the 300mT slice from the ship and moving it away, every 2 hours



CMT Beta unit concept design

Concept design

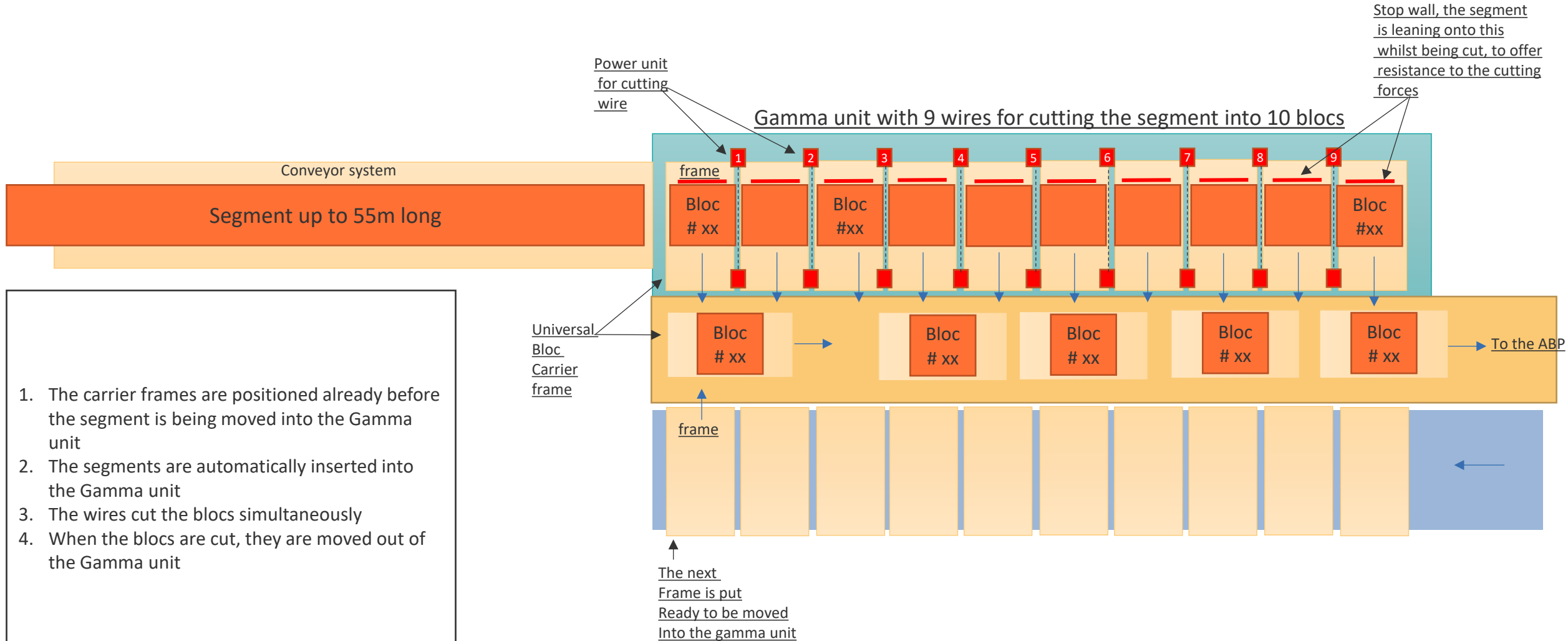
Indicatory sketch of the Beta unit. Roof and side panels are not shown.



Cutting of the 300mT slice from the ship and moving it away, every 2 hours



Top view



1. The carrier frames are positioned already before the segment is being moved into the Gamma unit
2. The segments are automatically inserted into the Gamma unit
3. The wires cut the blocs simultaneously
4. When the blocs are cut, they are moved out of the Gamma unit

CMT teaser very limited information: further information at +31646828400 or

CMT Automated Block Processing

In the car manufacturing, robotics is a standard for decades already

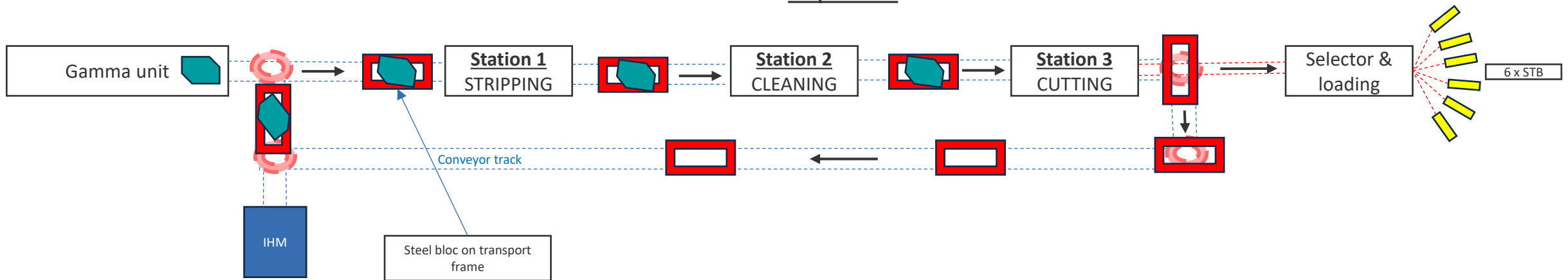


CMT Automated Block Processing

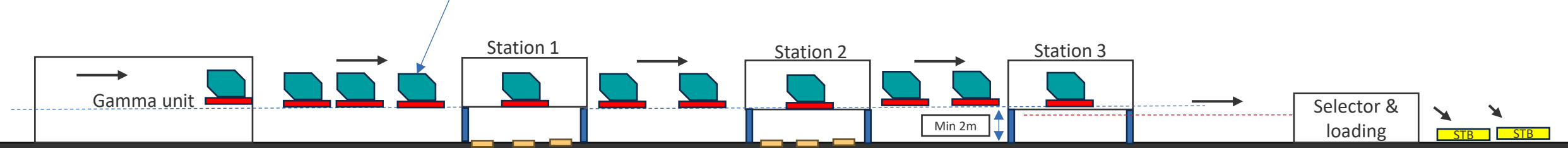
Fully mechanized, automated stripping, cleaning and cutting of the block

CMT ABP Block & Frame transport system

Top view

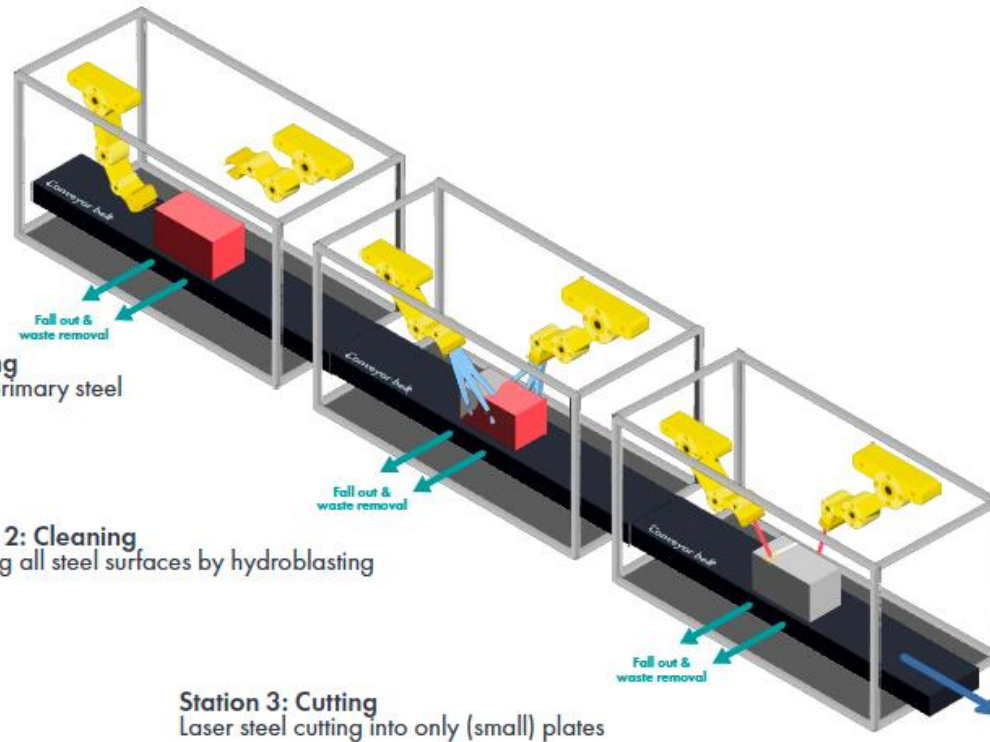


Side view



CMT Automated Block Processing

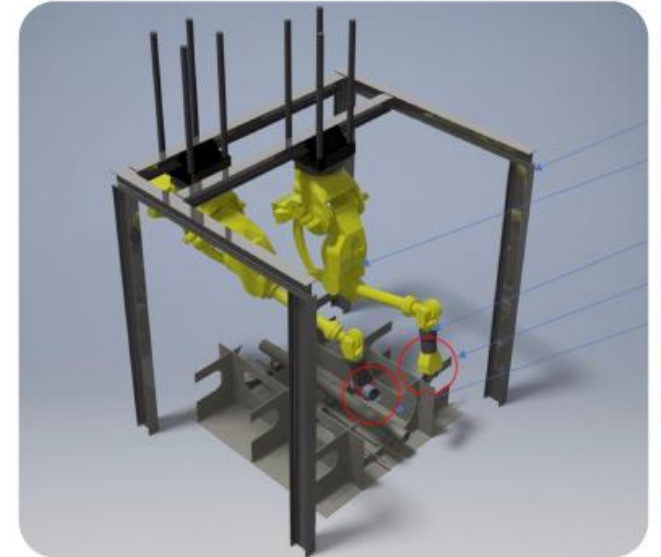
Fully mechanized, automated stripping, cleaning and cutting of the block



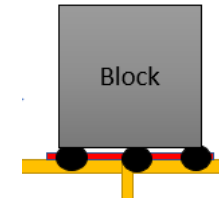
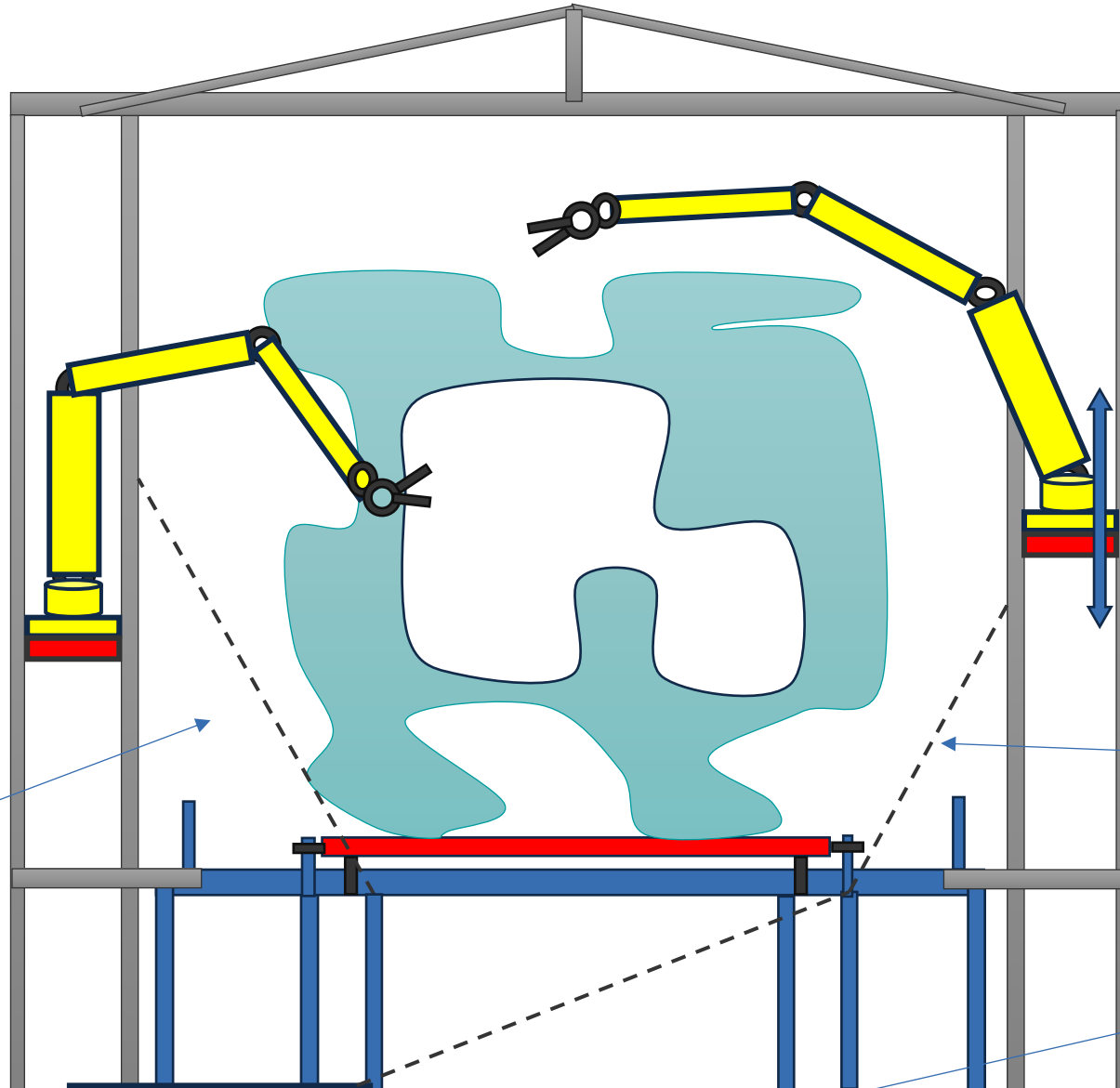
Station 1: Stripping
Raw block > dirty primary steel

Station 2: Cleaning
Cleaning all steel surfaces by hydroblasting

Station 3: Cutting
Laser steel cutting into only (small) plates



CMT ABP bloc stripping Station 1



The robotic arm with the laser head will move vertically plus left and right in a major vertical steel structure grid. Simultaneous movement of the arm and the actuator is speeding up the cutting process.

This is a corrugated steel plate, allowing liquids to seep through the slot like openings of this plate. Liquids should be separated as much as possible before the solids enter the STB. Gravity alone must allow for all solids to find the STB

This is the liquid collection sump. This black water is pumped out and by pipes pumped to the liquid processing facility for distraction of water, oily material and solids.

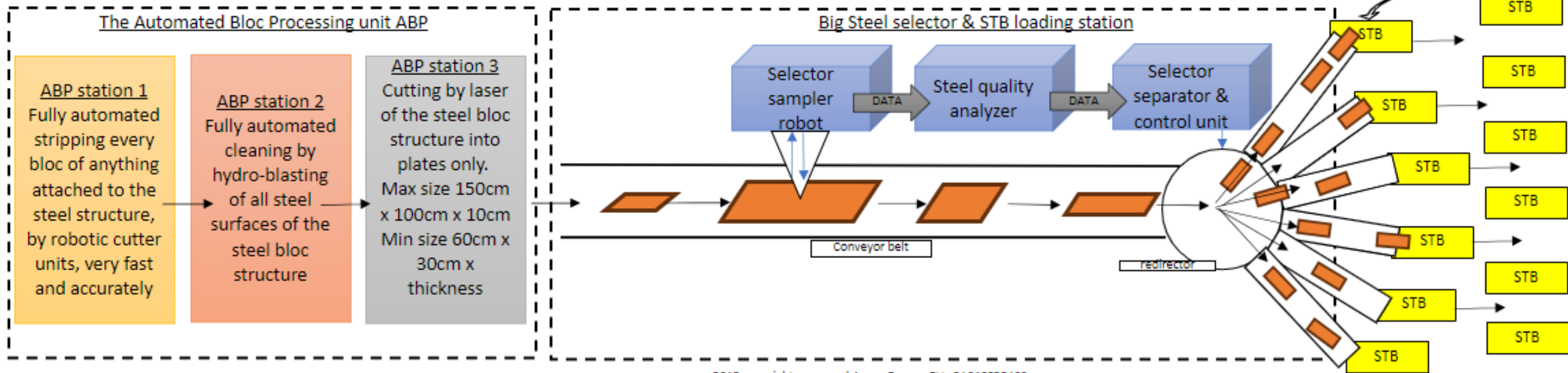
This is a steel plate, guiding the cut-off/ripped-off solid material to drop in to the awaiting Grey STB. This STB is in a pit, allowing all liquids to be collected here. Forward these mixed solid materials by the STB towards the selector/seperator facility

STB

Process details sampling and selection

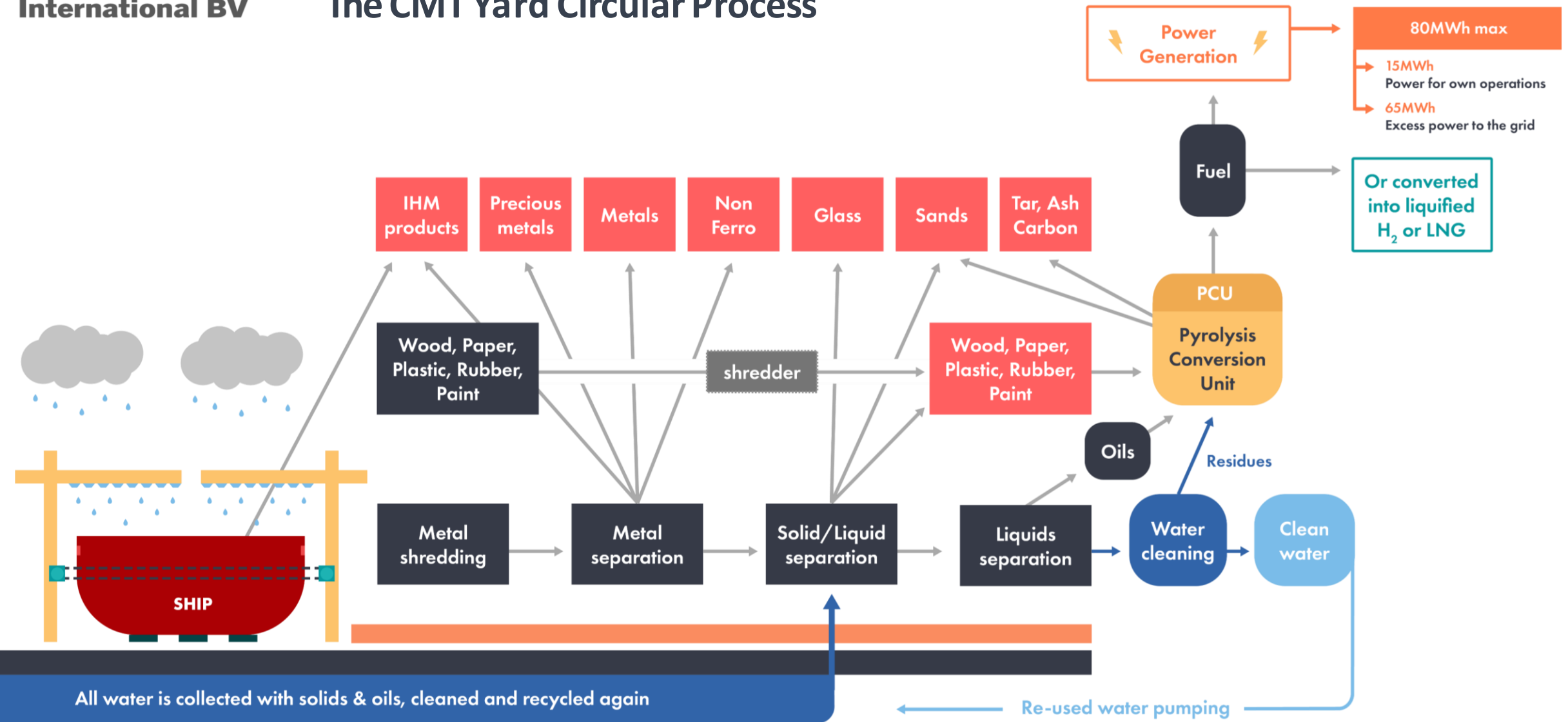
Selection of a singular quality of steel as the last step of the ABP

The Standard Transport Box (STB) is always to be loaded with 30mT of one quality of steel. About 4 STB every hour are exchanged for an empty one

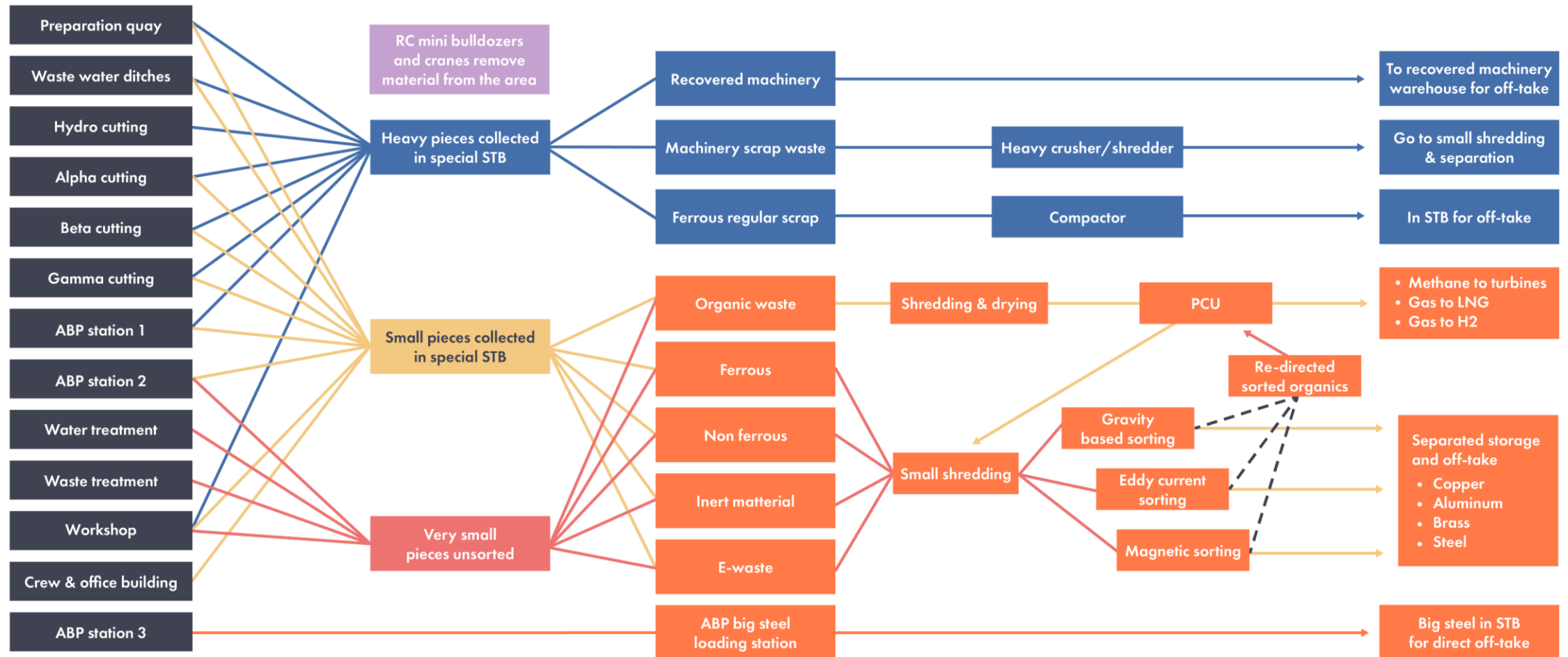


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The CMT Yard Circular Process

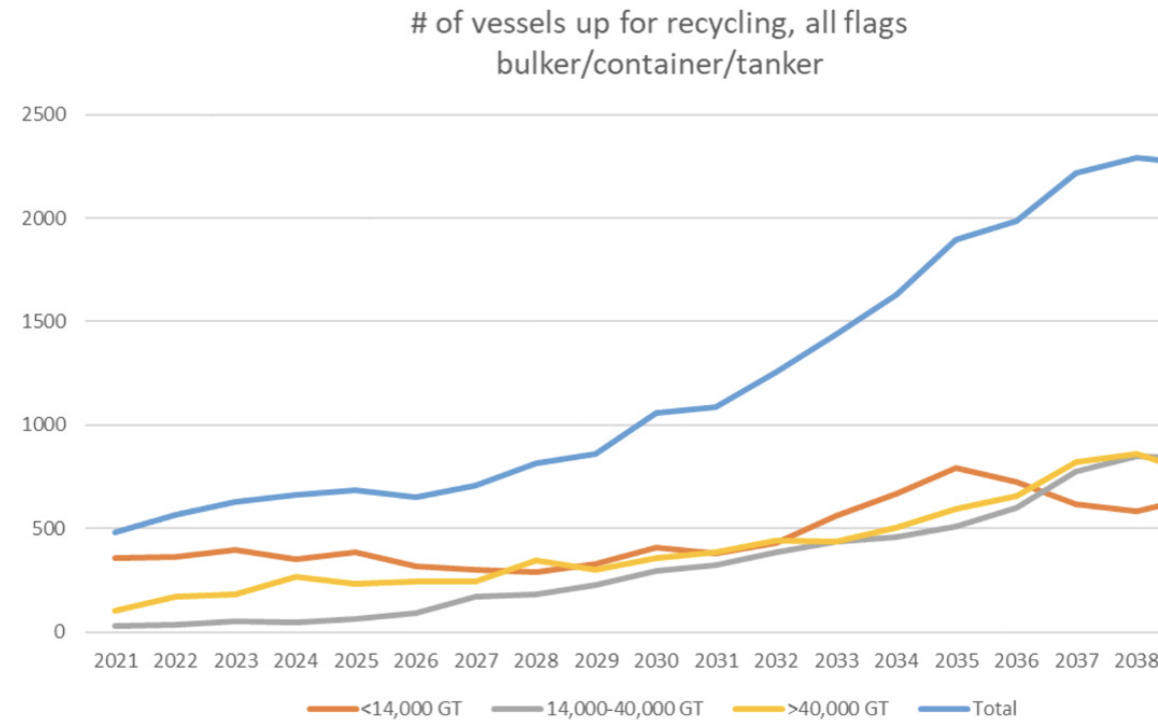


The solid material and waste separation process at the CMT yard



The Opportunity

Worldwide a sharp increase of largest vessels up for recycling



CMT Yard will offer an attractive solution: the highest prices & the cleanest process



CMT Yard owners have an excellent business case: clean, superior AND profitable*

Results

Annual Revenue : €700
(€ 450mm Big steel & € 250mm of other mat/Energy)

EBITDA: € 90m

Project IRR (pre-tax) : 12%

Key figures

- Investment approximately: €350 mm
60 ships annually per yard
- Avg. tons Big Steel per ship: 18,000
- Avg. purchase price per ship: €9.0m
(can be – 10% CMT premium)

CMT Contribution

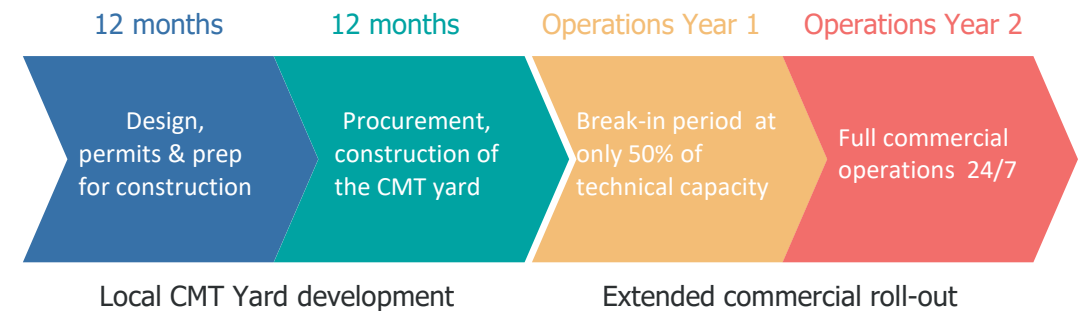
Services:

- Technology & Equipment
- Engineering
- Build & Construct
- Improvement & Performance
- Licenses
- Maintenance & Operation

The CMT Yard produces highest quality steel scrap (CMT Big Steel)

- 1.100.000mT of Big steel per year
 - 100% clean, 100% homogeneous & density $\geq 4000\text{kg/m}^3$
 - Specific steel types available up on order
- Over $\geq 35,000\text{mT}$ of non-ferrous recovered & traded each year
- Other valuable basic materials & energy sold to neighbouring industries
- Hydrogen or electricity used on the yard and surplus sold to industry

Typical CMT Yard realisation planning



The Opportunity

CMT – The spillover effect

- Broad application of CMT, not only to large sea-going vessels, but also for recreational boats - „What we can do with large vessels, we can also do with small boats“
- Composite dismantling is a challenge we can tackle well given the vast materials knowledge CMT has

CMT – The policy fit

- Direct link to 2024 mission letter of EU Commissioner-Designate for sustainable transport and tourism Tzitzikostas, to create **an industrial maritime strategy in order to enhance “the competitiveness, sustainability and resilience of Europe’s maritime manufacturing sector”**
- Direct link to the 2024 mission letter of Commissioner-Designate for Environment, Water Resilience and a Competitive Circular Economy Jessika Roswall, to lead on a **“Circular Economy Act with measures to create market demand for secondary materials and establish a single market for waste, notably in relation to critical raw materials”**

CMT – Challenges to overcome for EU funding and fresh capital

- Create an environment conducive to innovative companies by making funding and capital available for innovative, sustainable and circular business like CMT
- Example: Successful application to Bue Invest in 2020, but no funding due to too small funding pots



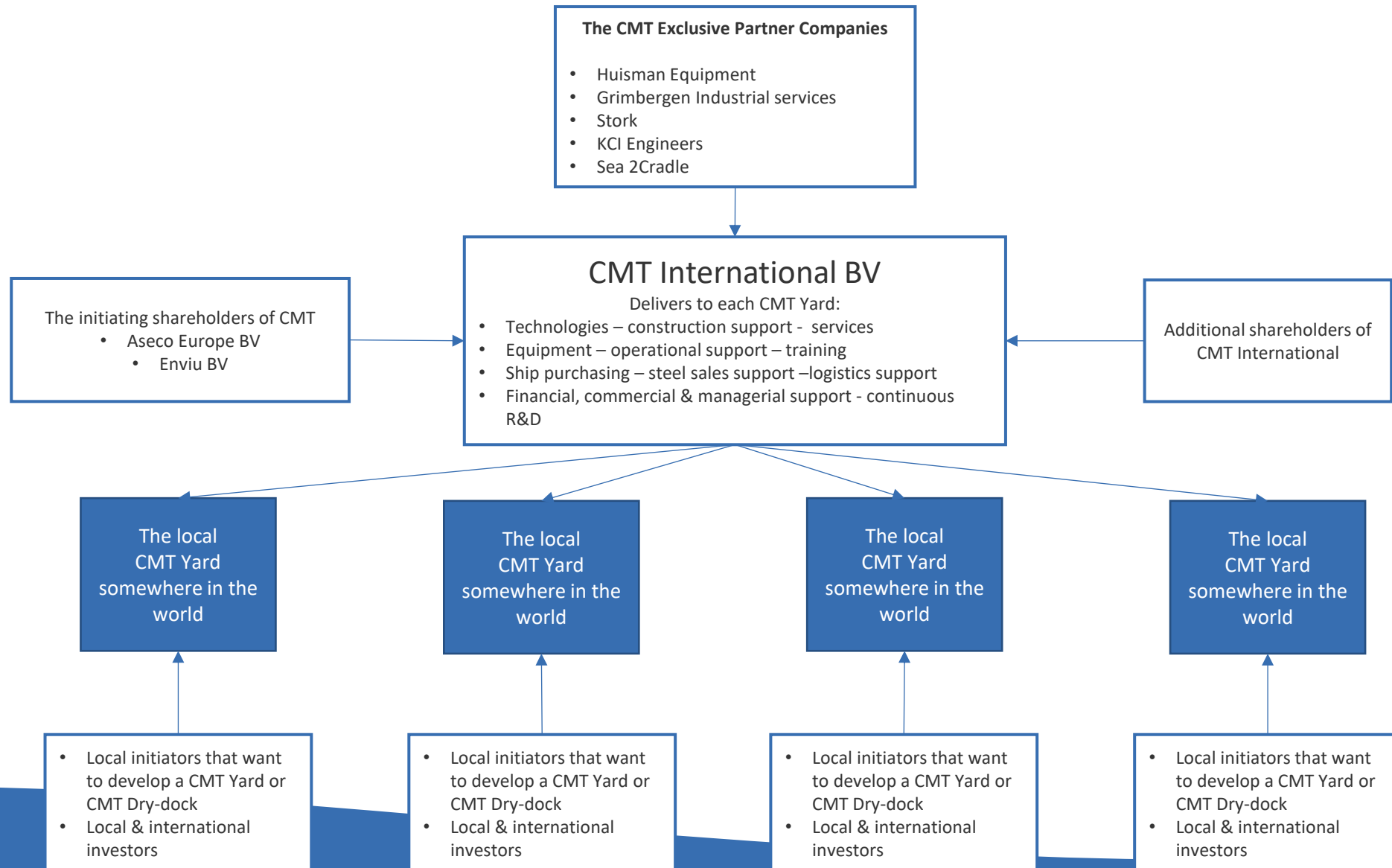
“The proposal convincingly aims at integrating and scaling up several technologies in an innovative way. The proposed solutions have the potential to significantly impact the global ship dismantling and recycling market.

The targeted price and size of vessels are expected to make the proposed solutions very competitive in the market. In addition, the proposed solutions have the potential to achieve huge environmental and social impacts, in a very polluting and unsafe sector.

The timing is right for the market and the need to comply with the new EU legislative framework for ship recycling”

EC expert Jury outcome Blue Invest application

The CMT International Business Model Structure



The CMT International team



Frank Geerdink

Founder & CEO

Frank is a skilled entrepreneur with a long track record of setting up succesful companies in different sectors.

Micke Magnusson

Finance Director

Micke is a serial entrepreneur, skilled dealmaker, has a sharp financial mind and is an activist for circularity

Daniël Moolenburgh

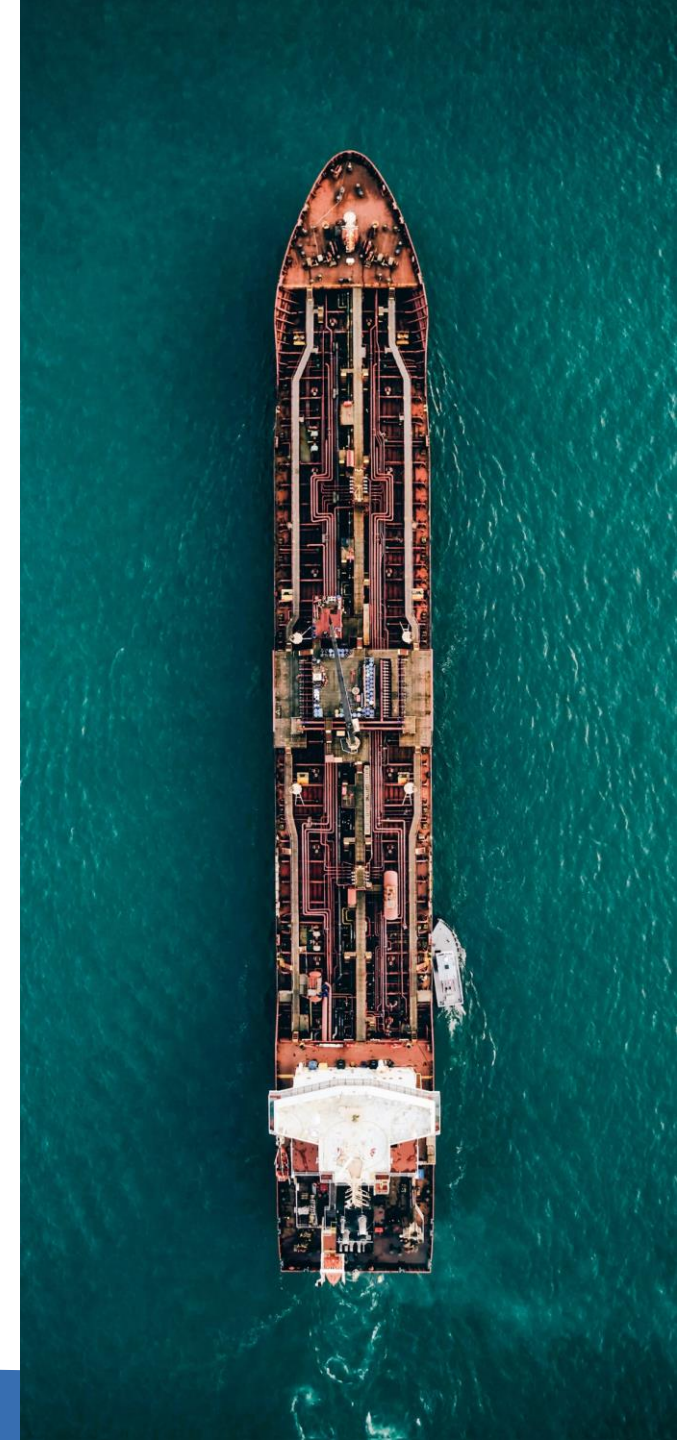
Public Relations Director

Daniël is entrepreneurial, diplomatic and good with words. His drive is to make circularity the norm globally.

Eric Boertje

Operations Director

Daniël is entrepreneurial, diplomatic and good with words. His drive is to make circularity the norm globally.



**Thank you for your attention,
on behalf of all CMT International partners**

