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TRANSPORT MIDDLE EAST 2026

ONSHORE POWER SUPPLY WITH IN PORTS

PRESENTED BY DAIEL HOFFMANS

/// Emissons

The GreenHouse Gas (GHG) emissions caused in the port area are a growing problem due to the increasing capacities of the ports.

The onshore power supply units will replace the diesel-powered vessel generators when they are laying at berth.

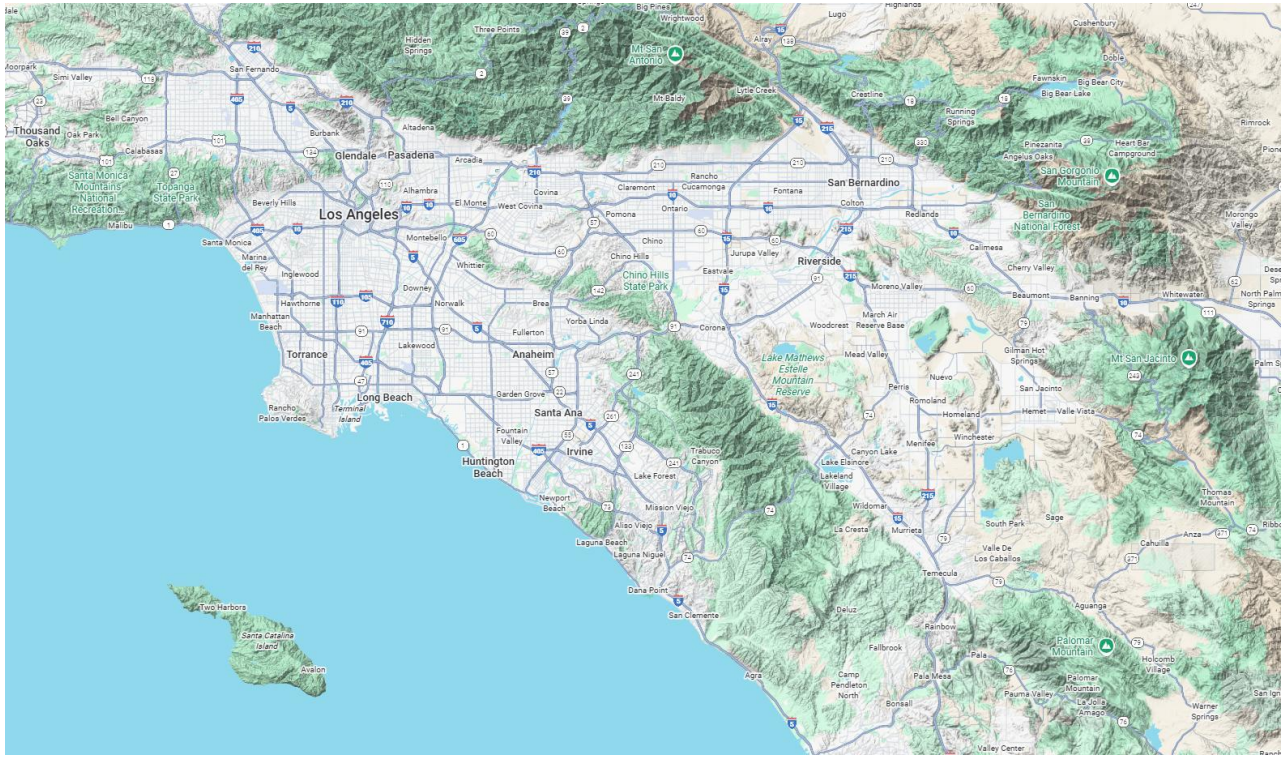
Global shipping aims for net-zero greenhouse gas (GHG) emissions by around 2050, led by the International Maritime Organization (IMO), with concrete targets including at least a 20% GHG reduction (striving for 30%) by 2030 and a 70% reduction (striving for 80%) by 2040

/// History

Seatlle

Shore power, also known as cold ironing or Alternative Marine Power (AMP), allows ships to plug into land-based electricity instead of running auxiliary diesel engines at berth, reducing air pollution and noise; its history involves early adoption in Seattle (2004) pier 91 for cruise ships, growing European port initiatives (like Rotterdam's) spurred by regulations, and expansion to various vessel types like ferries, tugs, and container ships, driven by emission reduction goals and technological advancements

/// History



Los Angeles

Early 2000, Mayor of City of Los Angeles committed to lower pollution at Port of Los Angeles (POLA), with Shore to Ship connections known as Alternative Maritime Power (AMP).

In August of 2004, POLA installed first Shore to Ship connection at Berth 100 through a barge, which was equipped with a 6.6KV primary transformer to 480V secondary and it was a successful connection.

POLA was an active participant in establishing International Standard of Shore to Ship connection designated as IEC/ISO/IEEE 8005-1 in July of 2012, which laid out the technical and the rules for ship connections, and to be implemented worldwide.

/// Connectors

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/// Connectors

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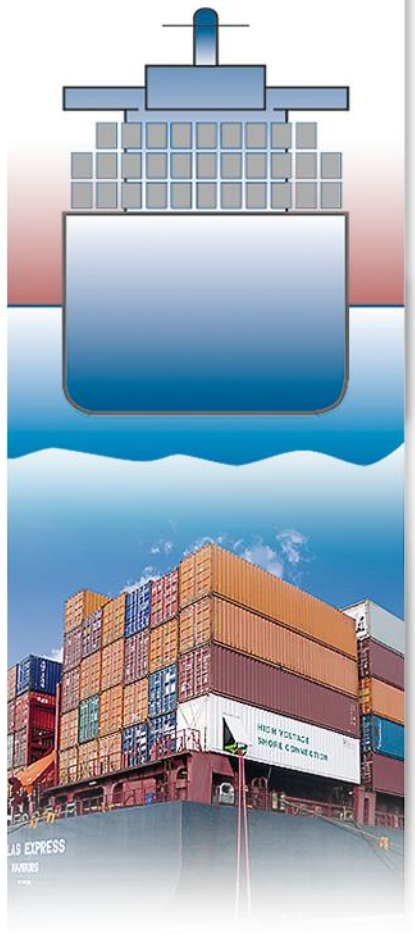
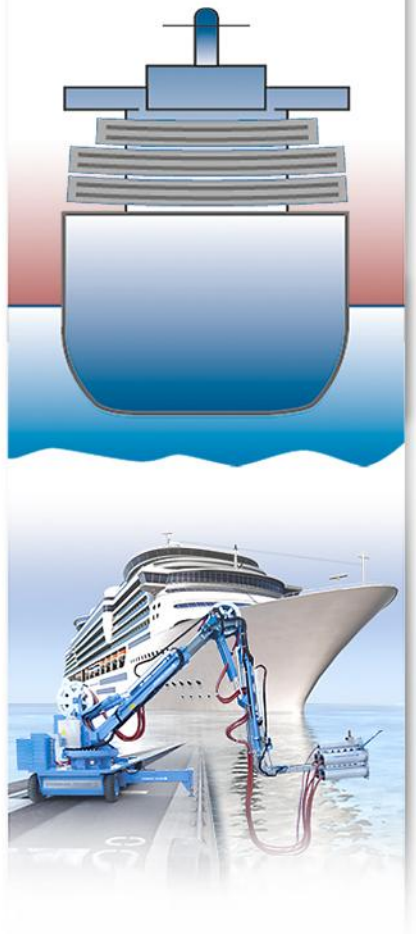
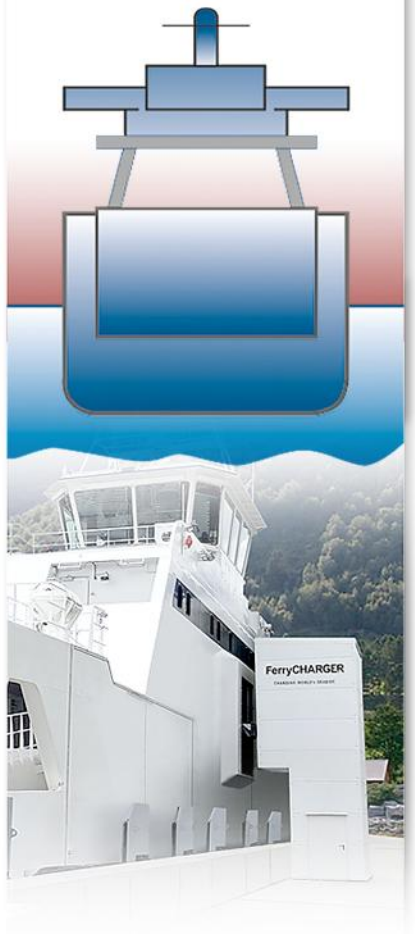
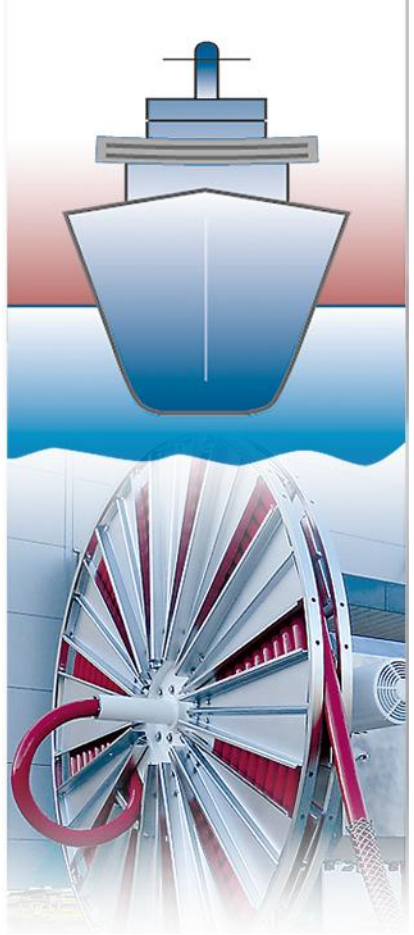
/// Application overview

Onshore Power Supply via Cable Reel Container System	Onshore Power Supply via Cable Reel / Mobile Carrier System	Quick Charging Connection via Pantograph System	Special Applications via Cable Reel System
			

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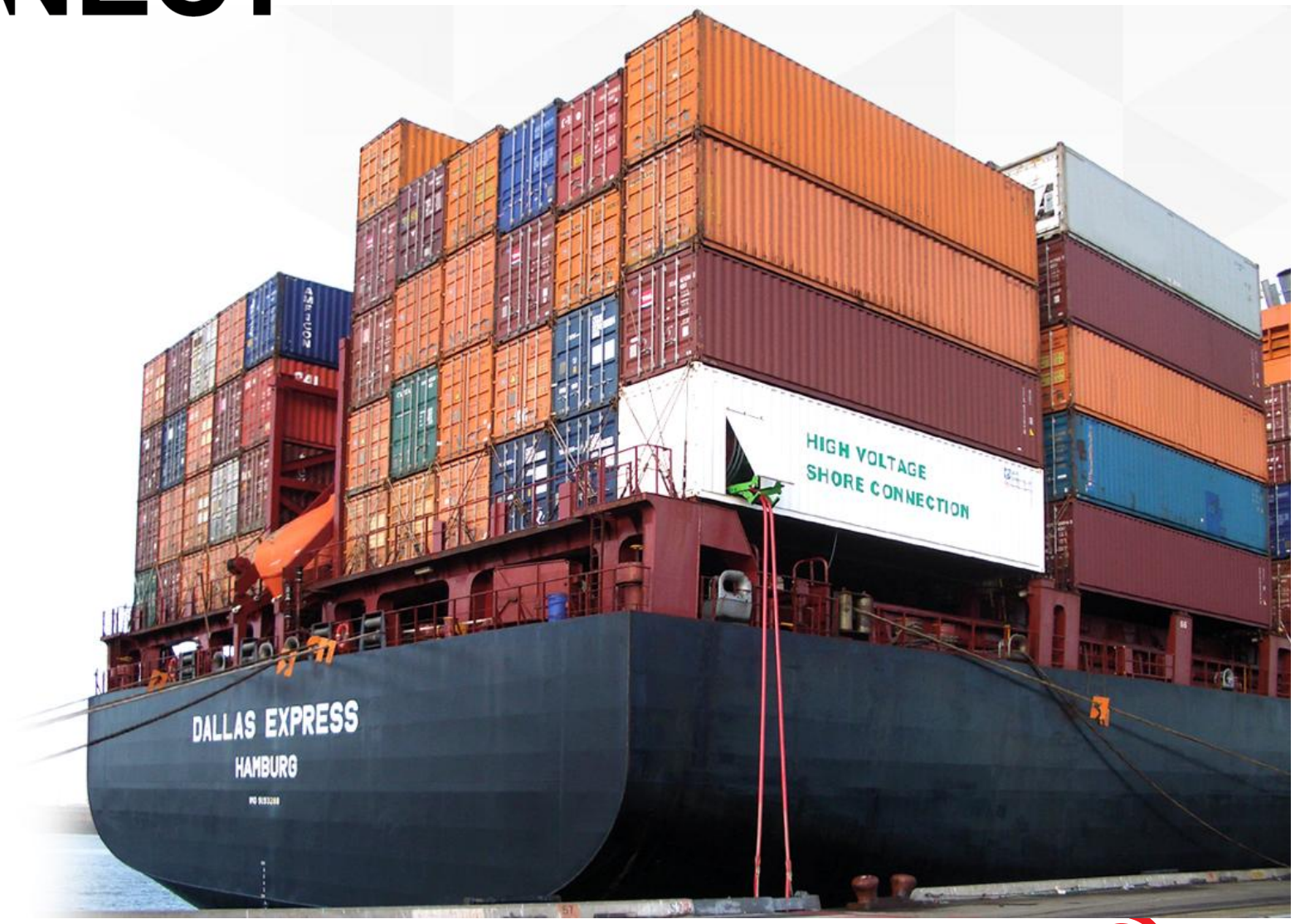
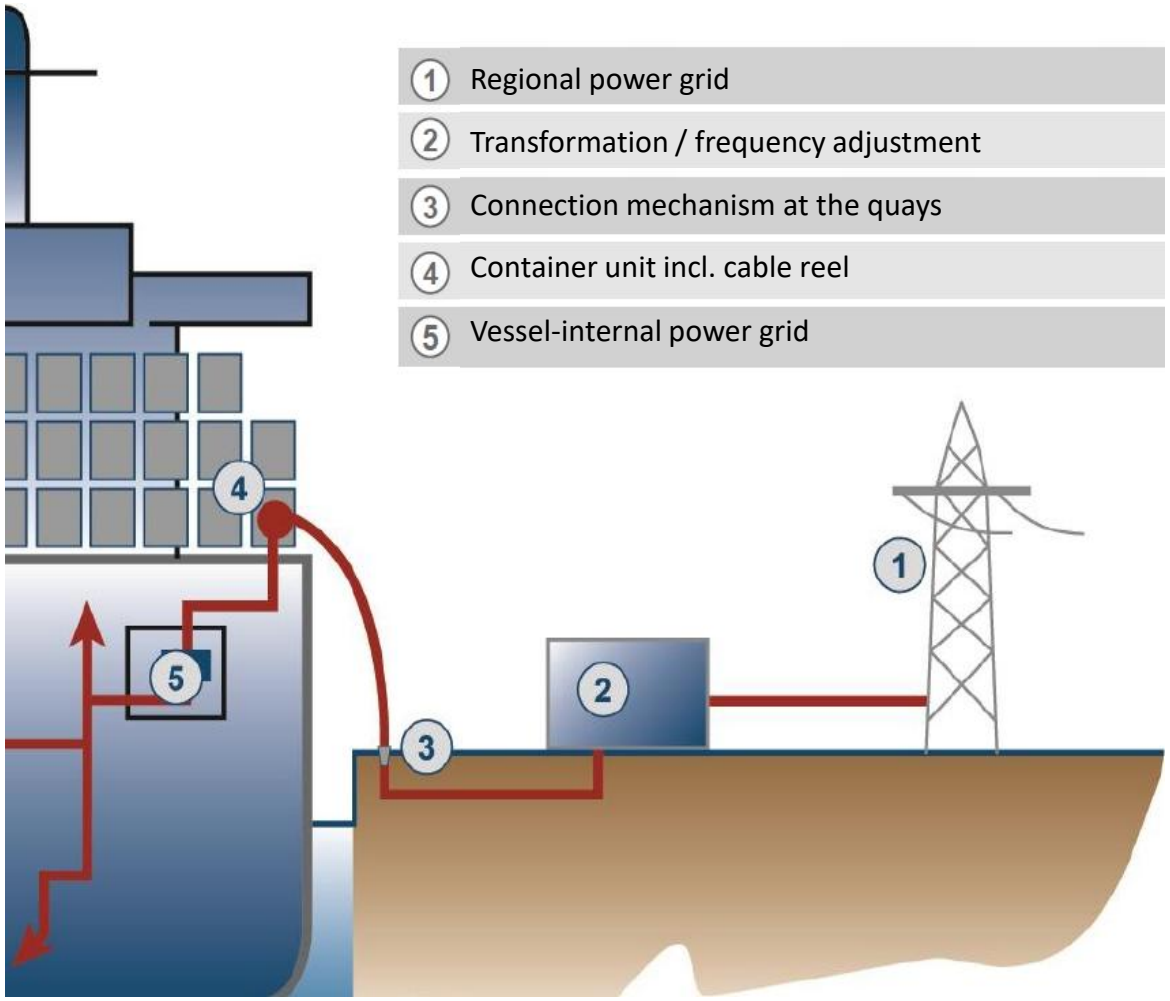
ShoreCONNECT

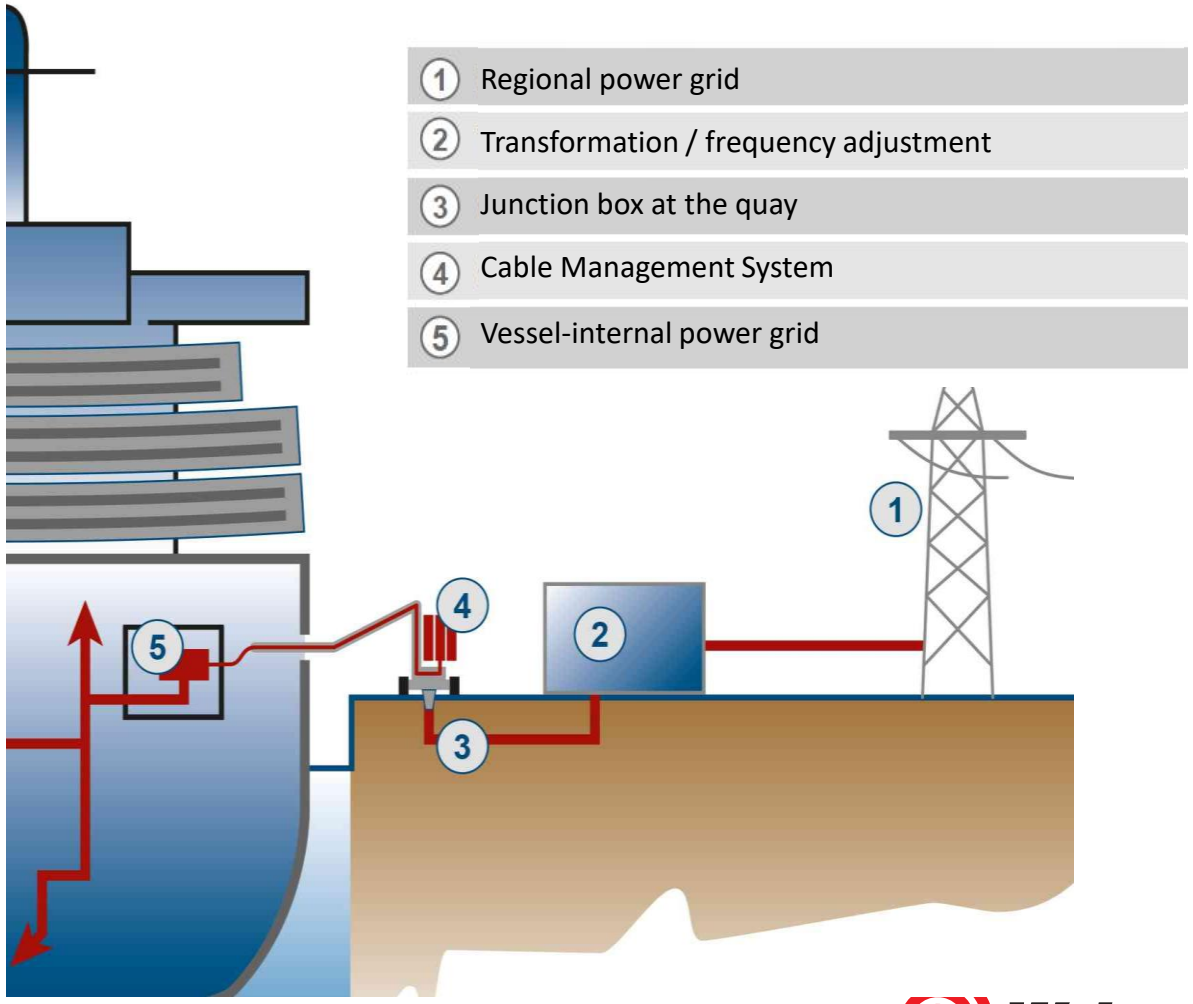
/// Container Vessels



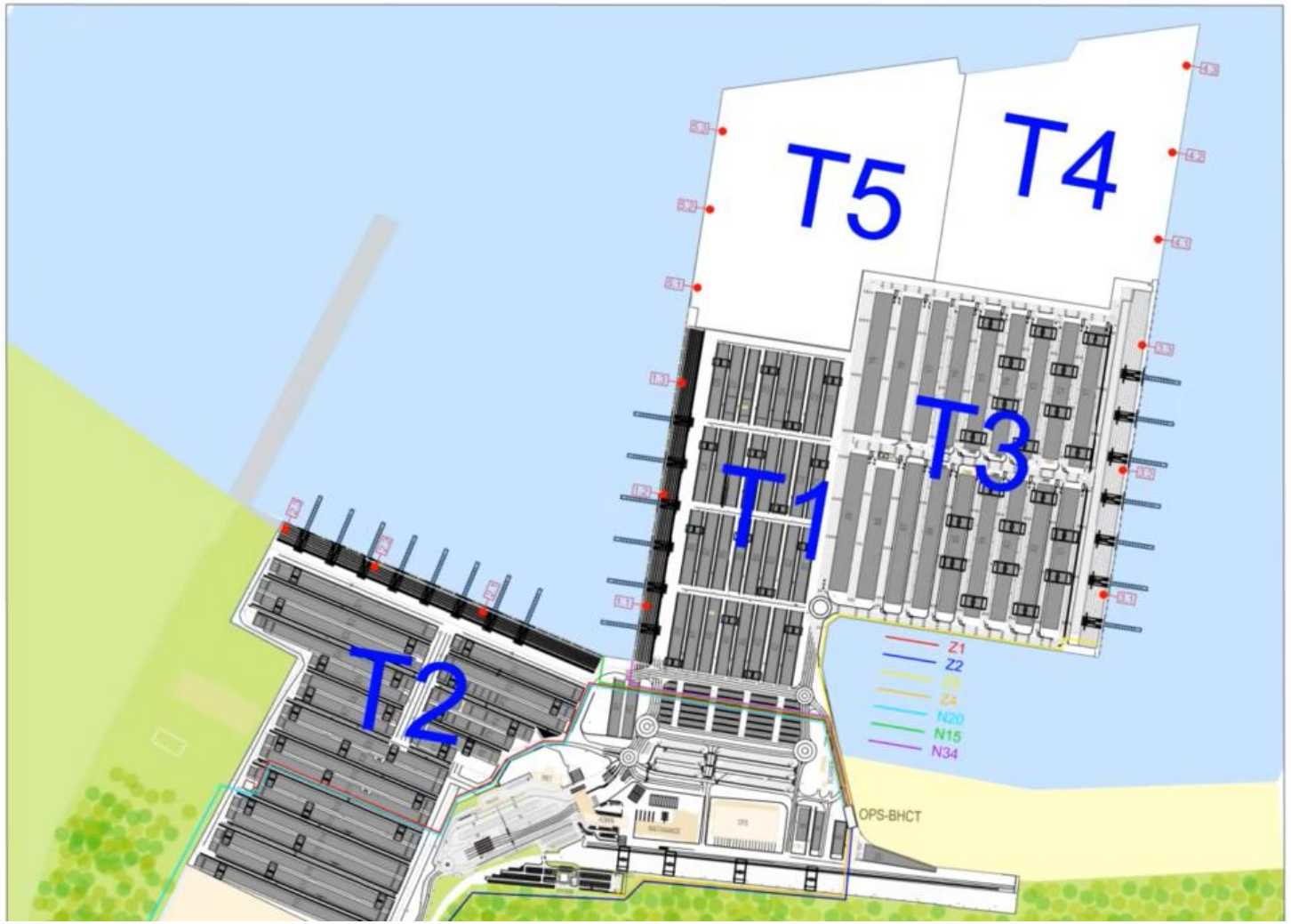
/// Shore Power For all Vessels

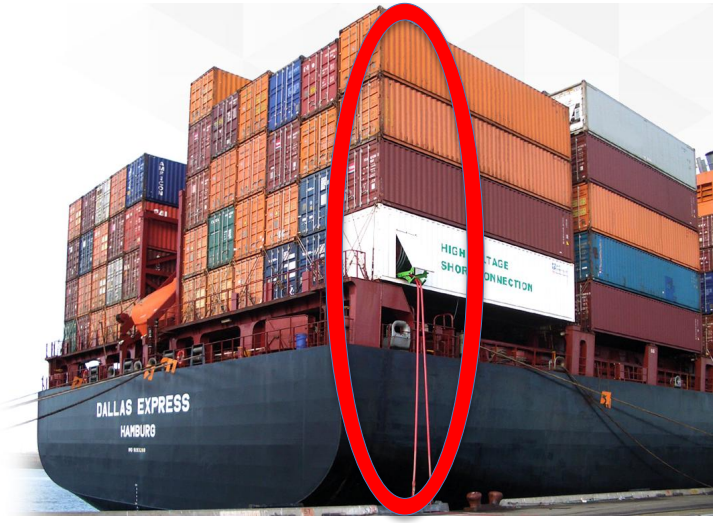
Shore power or **shore supply** is the provision of shoreside electrical power to a ship at berth while its main and auxiliary engines are shut down.





/// Difficulties





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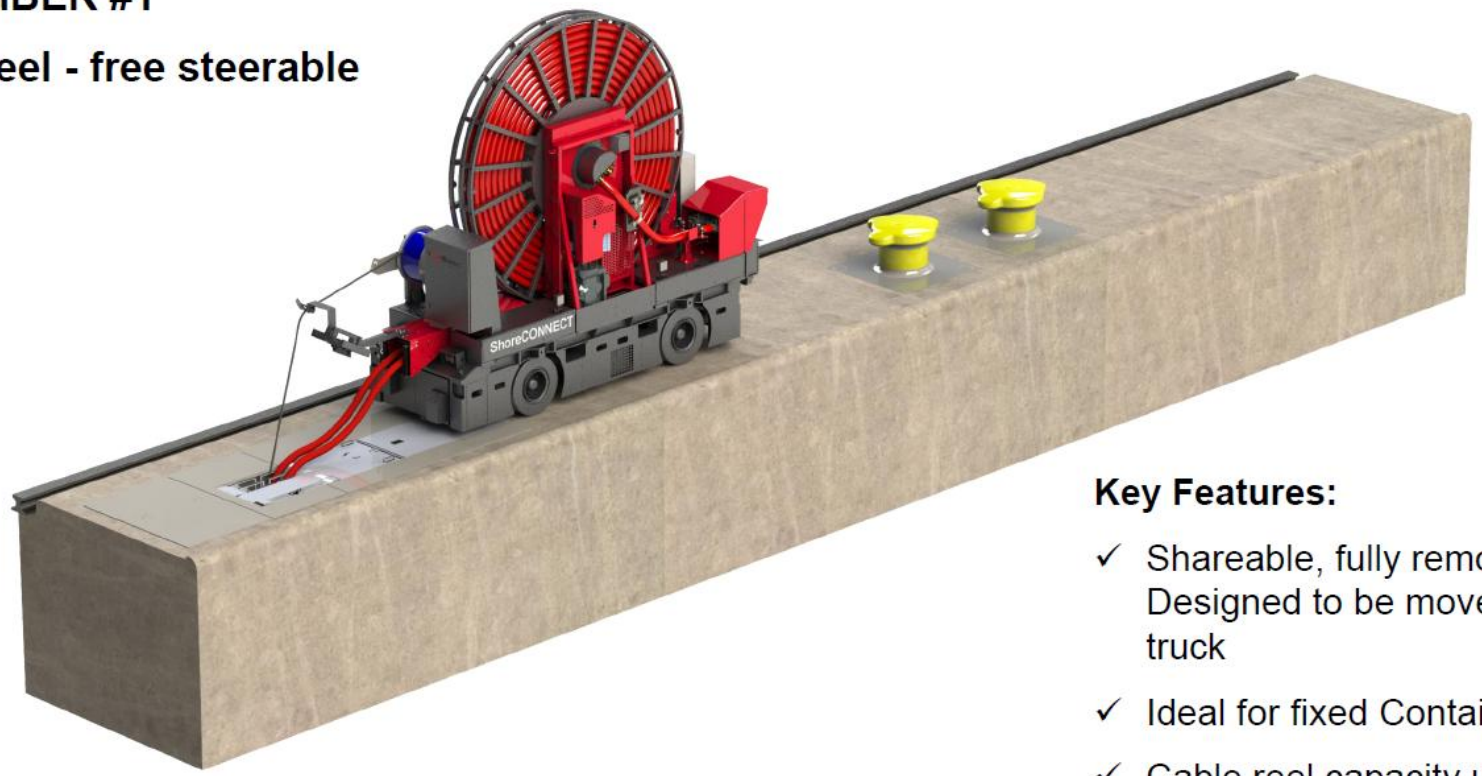
/// ShoreCONNECT – Mobile Socket System

TeamMEMBER #1

#mobileReel - free steerable



Key Features:

- ✓ Shareable, fully removable CMS design. Designed to be moved with heavy forklift truck
- ✓ Ideal for fixed Container pit upgrade
- ✓ Cable reel capacity up to 50m
- ✓ Radio remote controlled CMS functions

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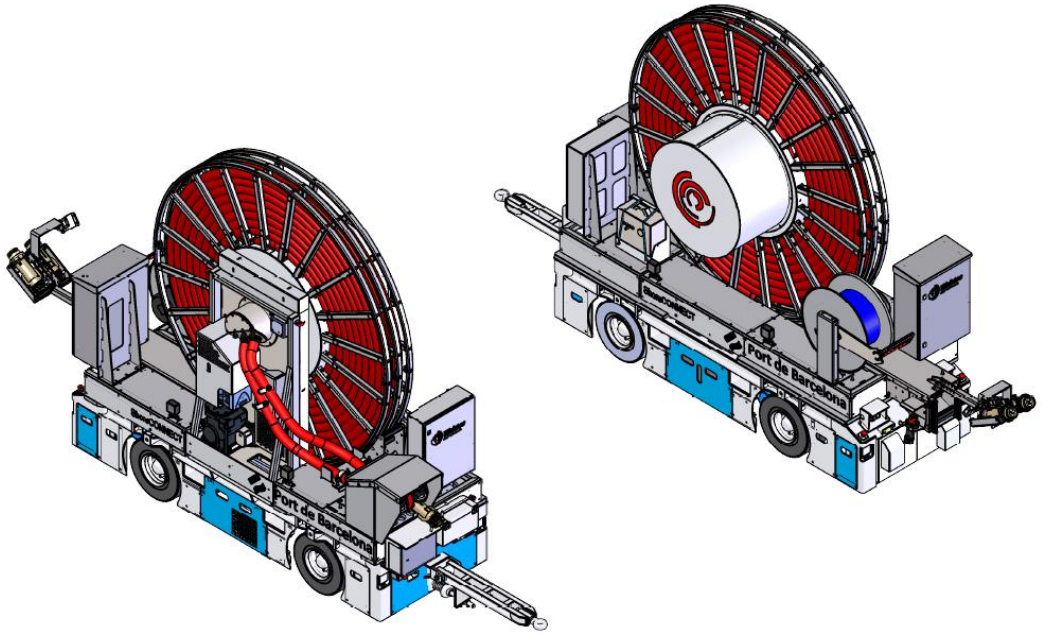
/// ShoreCONNECT – Mobile Socket System

Main technical figures:

- Travel distance: 50 m on each side of the junction box (total: 100 m)
- Self-driven and free steerable CMS solution
- Radio remote controlled
- 1,5 m wide CMS design
- Removable by a forklift or reach stacker
- Shareable between different spots



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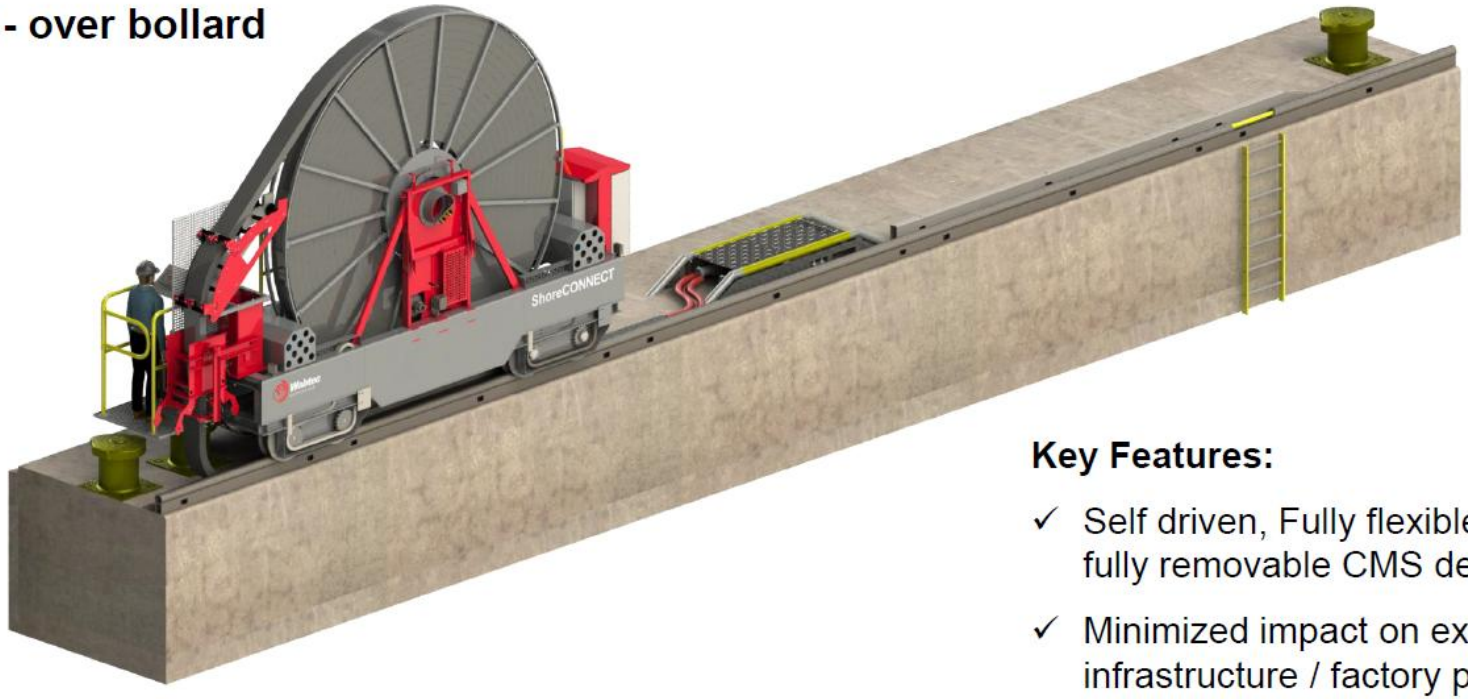
/// ShoreCONNECT – Mobile Socket System

TeamMEMBER #2

#mobileReel - over bollard



Key Features:

- ✓ Self driven, Fully flexible, shareable and fully removable CMS design.
- ✓ Minimized impact on existing infrastructure / factory prepared CMS
- ✓ Flush with quay wall, to avoid CMS structure over the quay edge
- ✓ Travel length up to 250m

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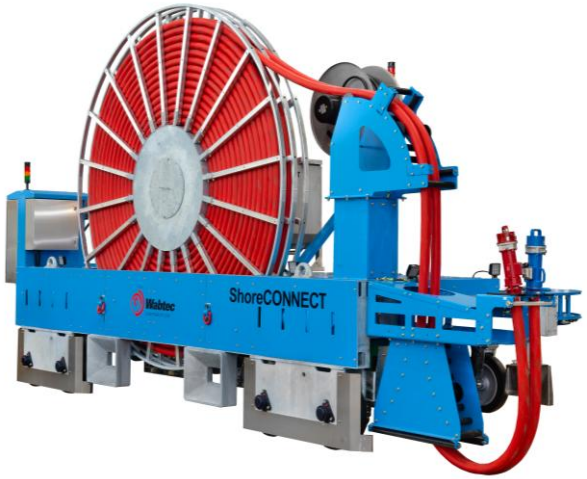
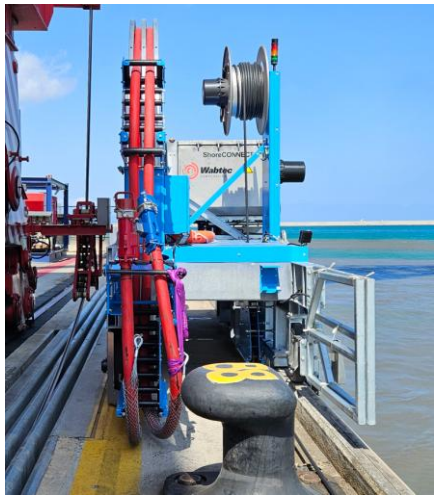
/// ShoreCONNECT – Mobile Socket System



Main technical figures:

- Travel distance: 100 m on each side of the junction box (total: 200 m)
- **Self-driven and guided** CMS solution
- Radio remote controlled
- CMS is designed to run over bollards and rescue ladder gaps
- **Removable** by a forklift or reach stacker
- **Shareable** between different spots
- Running over bollards



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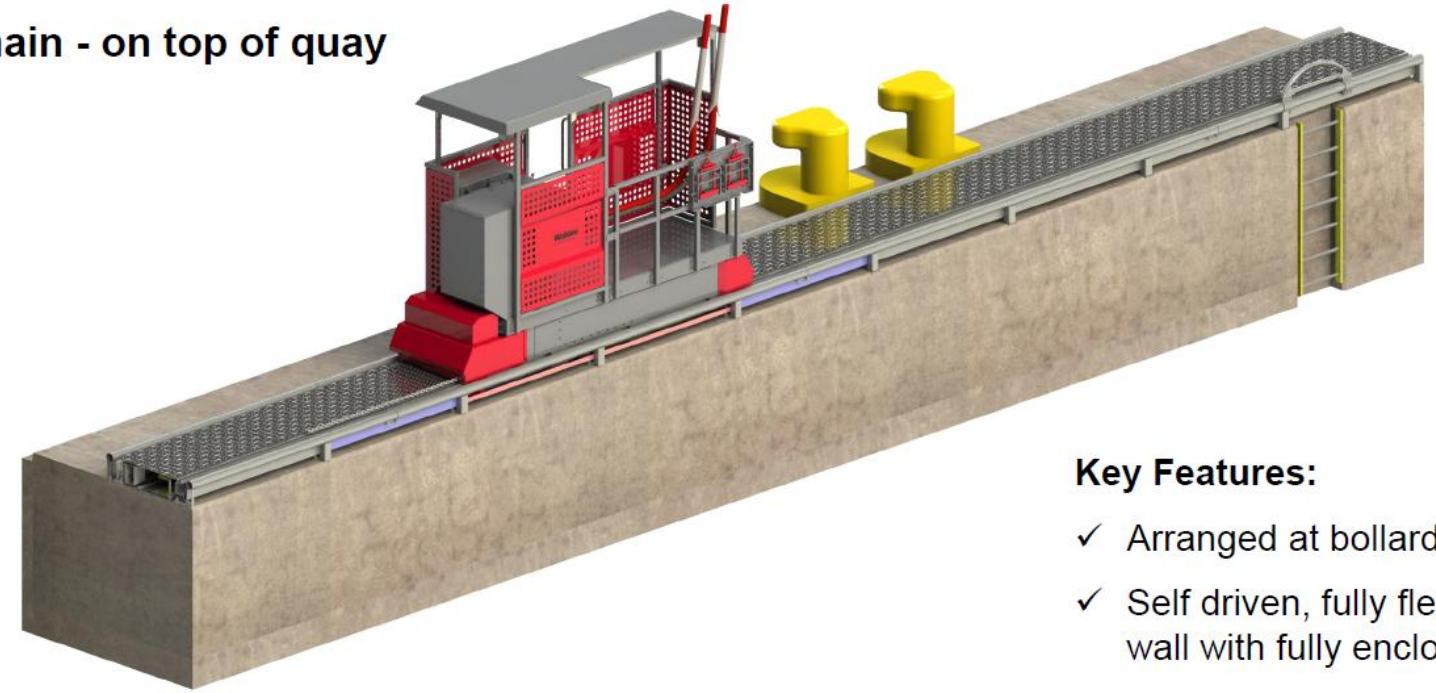
/// ShoreCONNECT – Mobile Socket System

TeamMEMBER #3

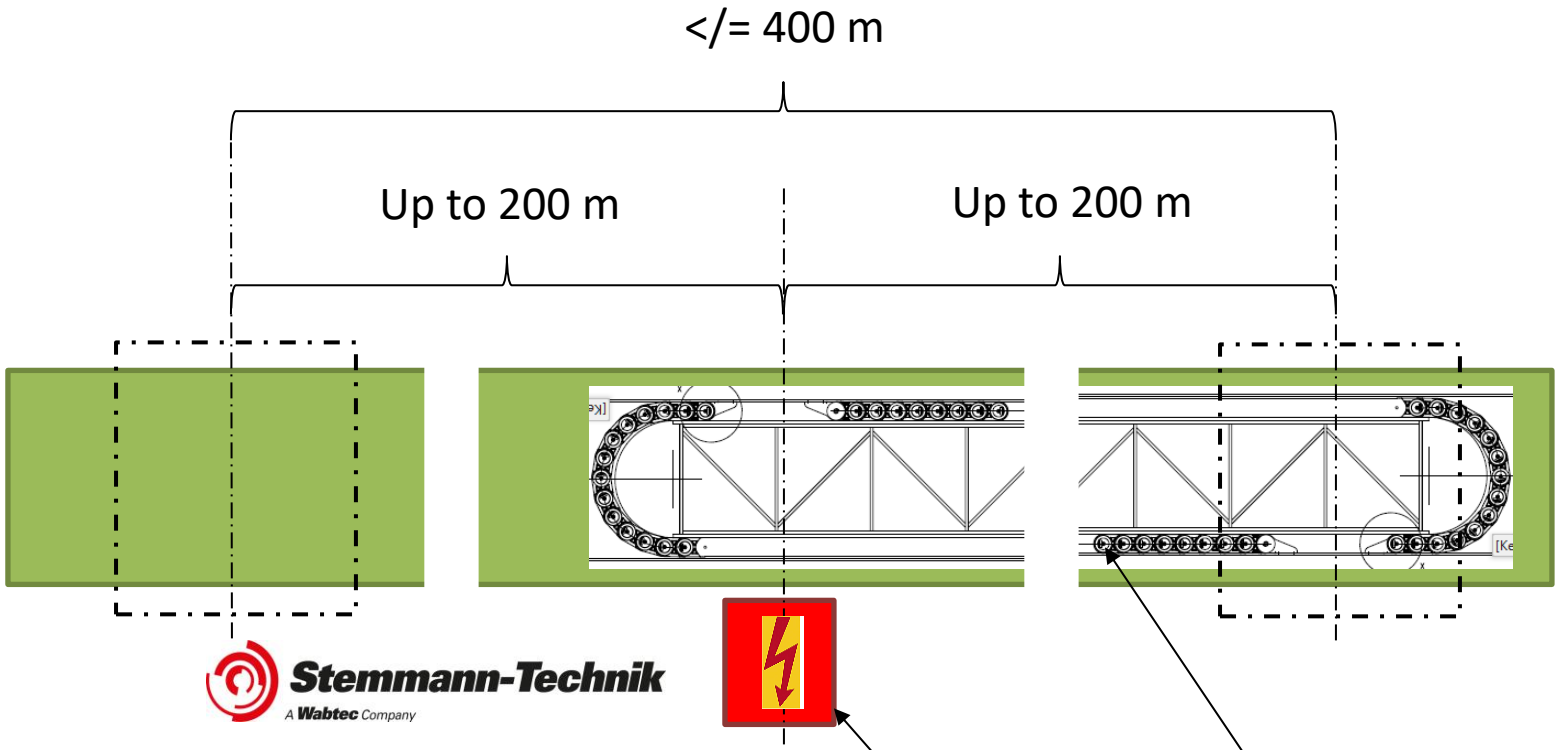
#mobileChain - on top of quay

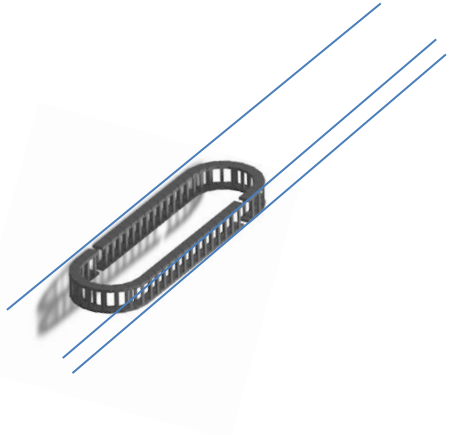


Key Features:

- ✓ Arranged at bollard front or over fenders
- ✓ Self driven, fully flexible along the quay wall with fully enclosed socket trolley
- ✓ Robust CMS rail with integrated chain, automatic moving solid metal plates during CMS motion
- ✓ Travel length up to 400m

/// ShoreCONNECT – Mobile Socket System





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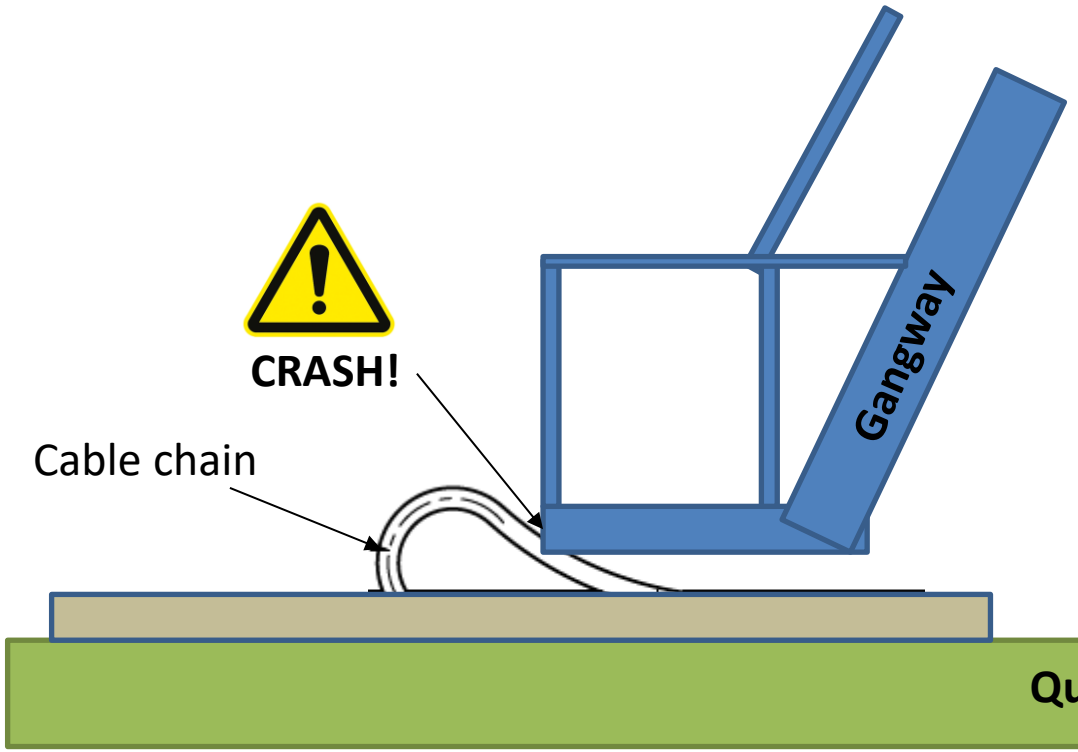
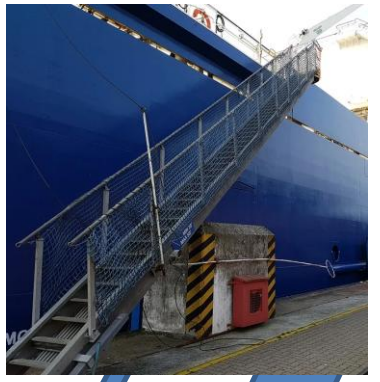
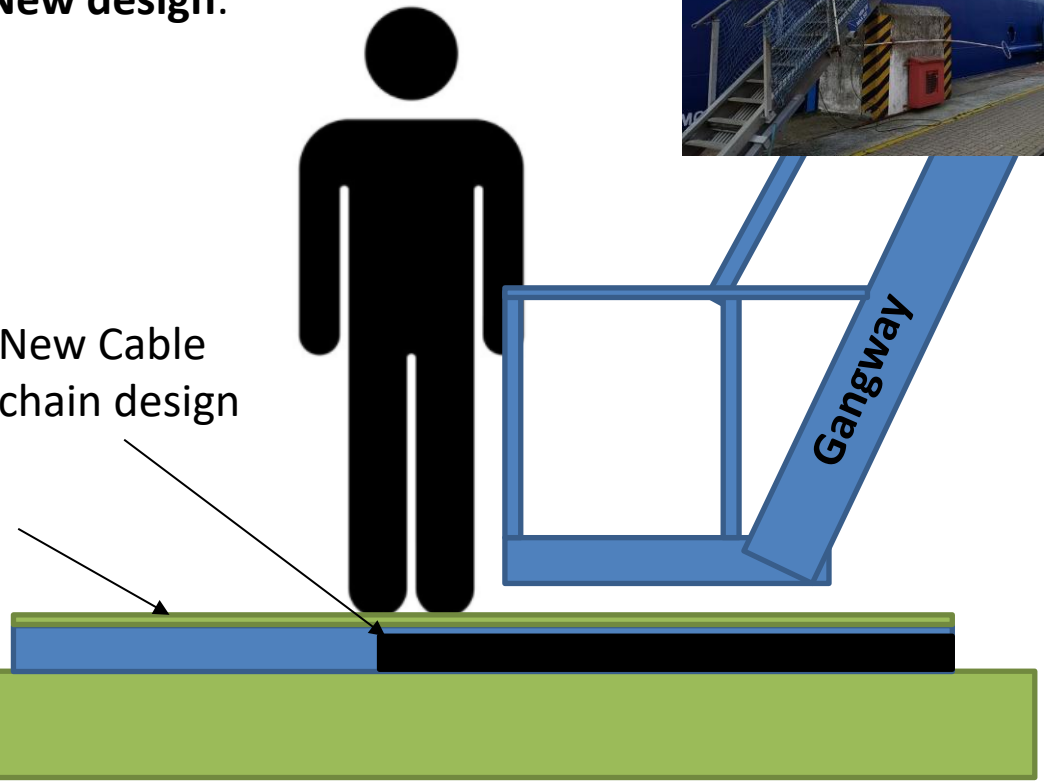
/// ShoreCONNECT – Mobile Socket System

Market design:



New design:





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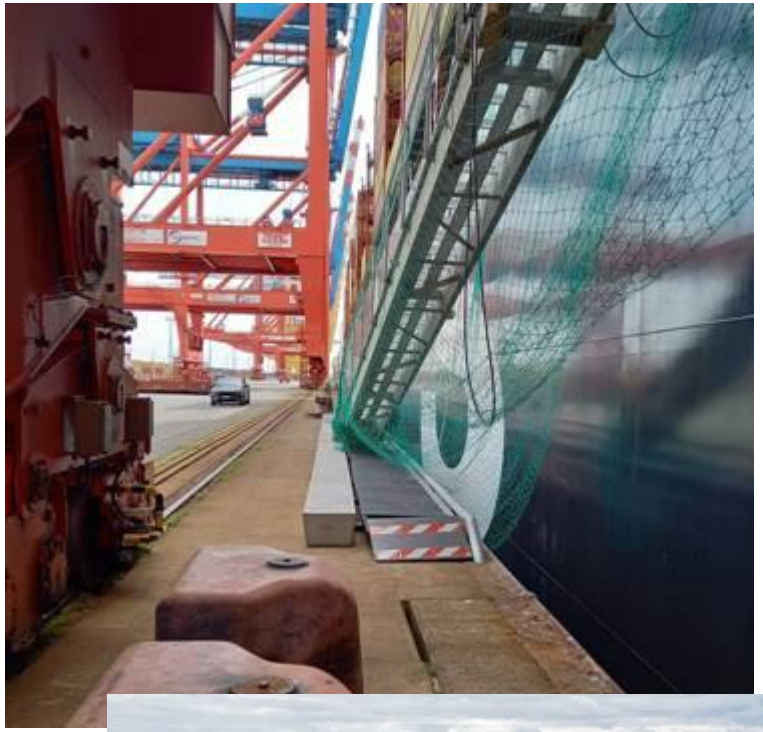
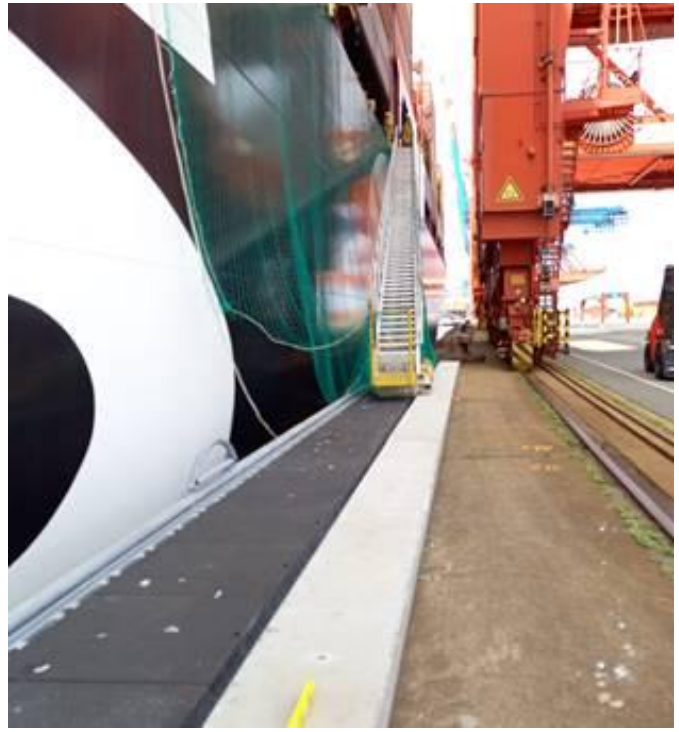
/// ShoreCONNECT – Mobile Socket System





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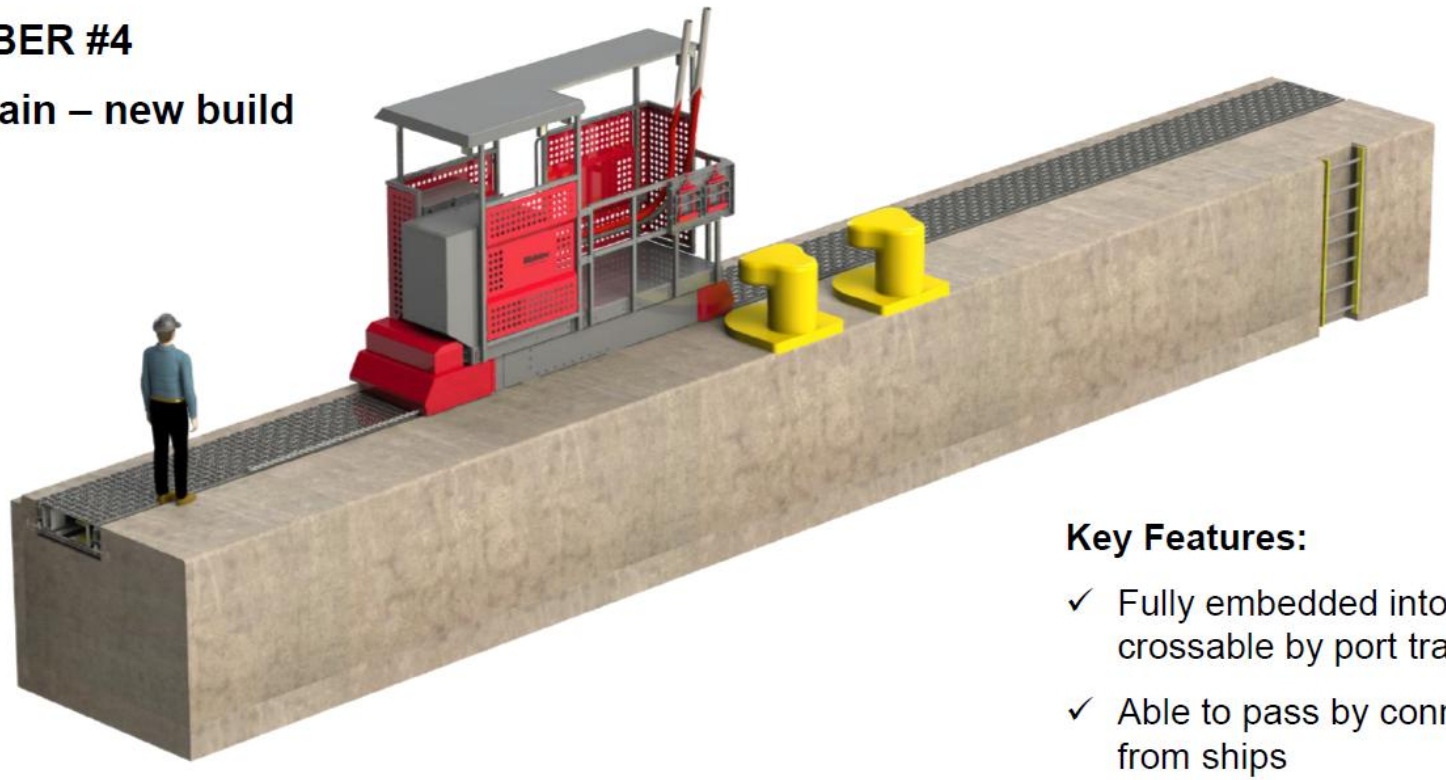
/// ShoreCONNECT – Mobile Socket System

TeamMEMBER #4

#mobileChain – new build



Key Features:

- ✓ Fully embedded into the quay deck, crossable by port traffic
- ✓ Able to pass by connected mooring lines from ships
- ✓ Robust CMS rail with integrated chain, automatic moving solid metal plates during CMS motion
- ✓ Travel length up to 400m

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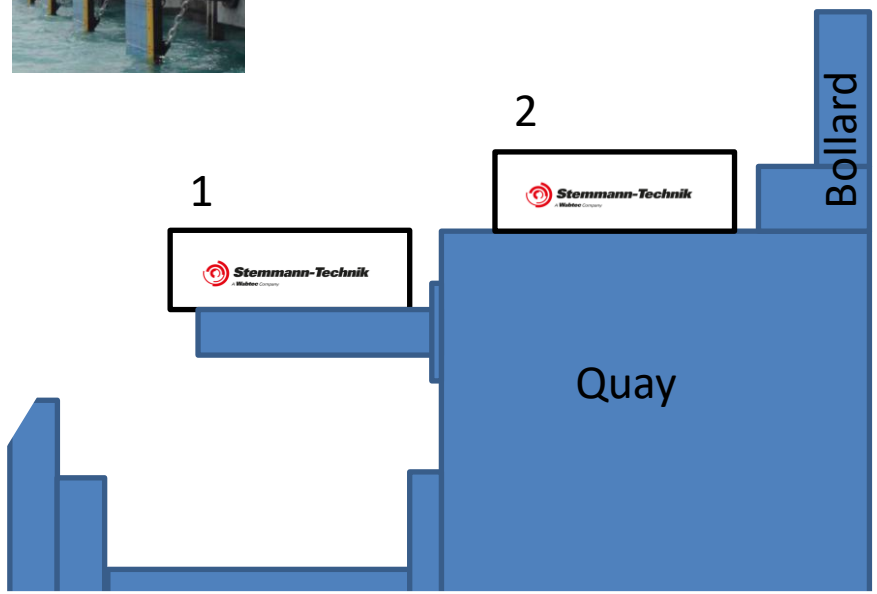
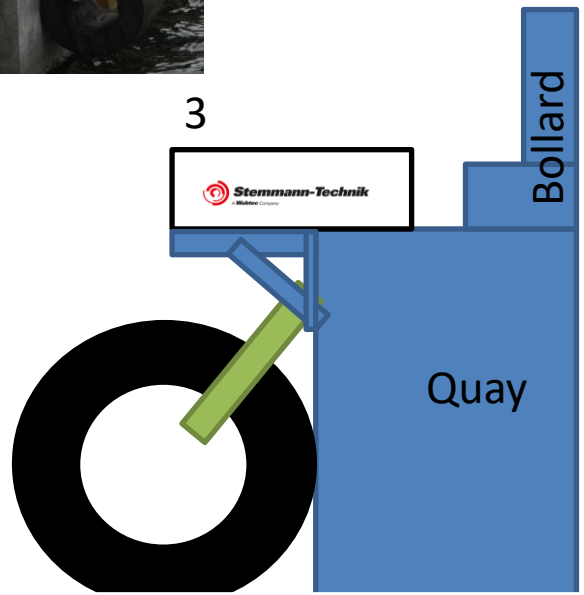
/// ShoreCONNECT – Mobile Socket System

Different arrangements:





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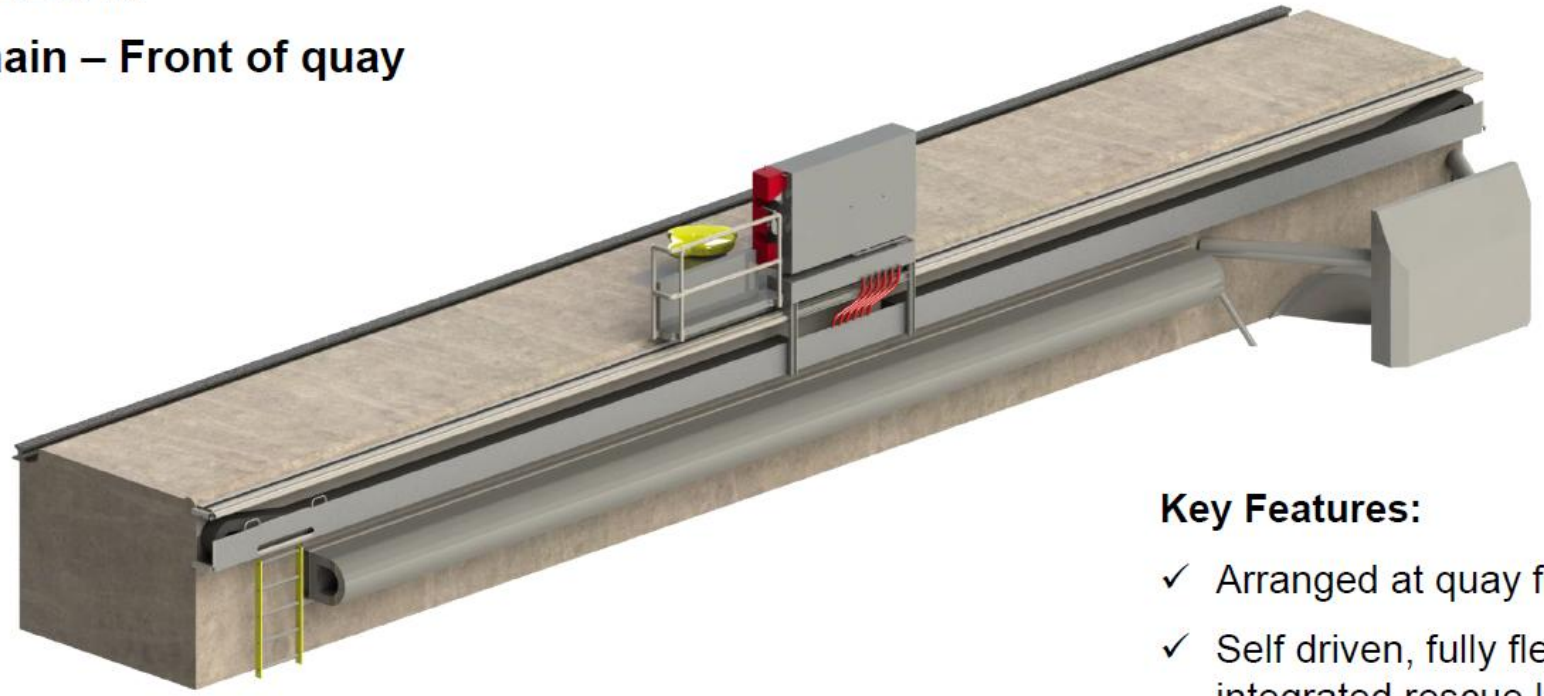
/// ShoreCONNECT – Mobile Socket System

TeamMEMBER #5

#mobileChain – Front of quay



Key Features:

- ✓ Arranged at quay front or over fenders
- ✓ Self driven, fully flexible socket trolley with integrated rescue ladder design
- ✓ Robust CMS rail with integrated chain and fender bar for protection against collisions.
- ✓ Travel length up to 400m

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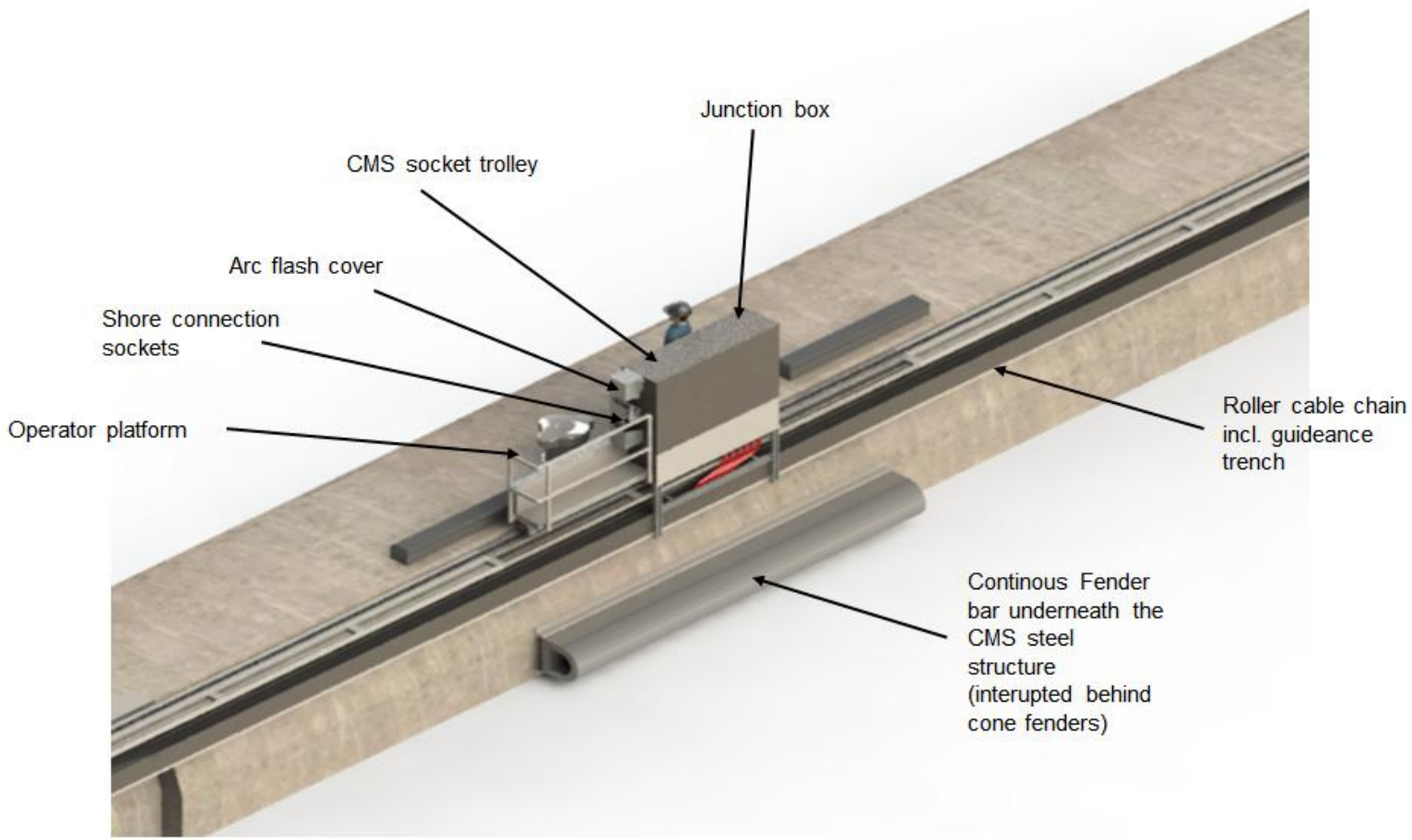
/// ShoreCONNECT – Mobile Socket System



Main technical figures:

- Travel distance: **up to 400 m**
- Self driven junction box trolley
- Radio remote controlled
- Operational Flexibility (Option): The vertical movable upper trolley part (able to be move over the quay deck to the crane) to enhance flexibility during Gangway operation and ensure placing of upper trolley in a safe zone during ship berthing.
- Operational Flexibility and increase availability (Option): Replaceable upper socket trolley part
- Compact and robust, space saving, modular system design
- Operator friendly: Ergonomic arrangement of connection sockets
- Safe: Protected by add. fender bars for protection against ship collisions
- Integrated rescue ladder design
- Maintenance free roller chain design
- Our connection points for the CMS will be designed for direct connection of ship side cables without a CMS in-between to increase flexibility in operations especially in special situations.

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