

THE CUBE™ SYSTEM

SH DEFENCE

PRODUCT BROCHURE

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CONTAINERIZED INTERCHANGEABLE MISSION MODULES FOR AIR, SURFACE AND SUBSEA CAPABILITIES

With The Cube™ System – Any Navy can turn almost any platform into a true multi-mission capability.

It takes a Cube™-ready platform, a Cube™ Side or Stern Loader, and Cube™ Certified payloads. Additionally, it takes the Cube™ Skidding System and elevator to move payloads around on decks or between decks.
With The Cube™ System Coast guard, SAR and Navy vessels can reconfigure new mission profiles on all domains without costly rebuilding or interchange payloads between platforms in less than four hours.

When Cube™ Modules are not on board, they are ashore for maintenance, the crew's training or as part of a harbour integrated emergency preparedness capability.

This is performed on a special stand.

The Cube™ System is designed according to DNV GL ST-0378 and is NATO STANAG compliant. It provides a safe and robust foundation for any mission equipment.

CUBE™ SYSTEM

PATENT PENDING

300+ AVAILABLE PAYLOADS

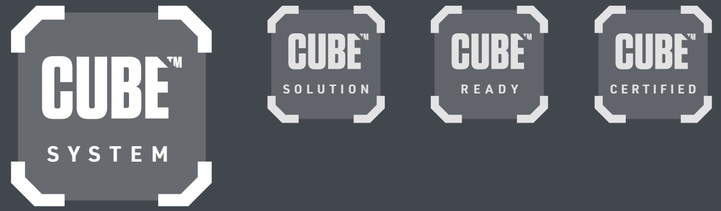


VALUABLE COOPERATION PARTNERS AROUND THE WORLD

NAVIES IN DIALOGUE

Denmark
Finland
Norway
France
Spain
Portugal
Australia
Estonia
Lithuania
Poland
Germany
Sweden
Saudi Arabia
Chile
Dutch
Belgium
UK
Greece
Nigeria
Malaysia
Iceland
Panama
Colombia
Canada
New Zealand
India
Italy
?
Brazil
Bangladesh
USA
Bulgaria
Ukraine
?
?
Singapore
South Korea
Indonesia
Japan
Romania
?
?

THE CUBE™ SYSTEM



The Cube™ System is both equipment modules and a handling system to replace and move the modules around.

With The Cube™ System – Any Navy can turn almost any platform into a true multi-mission capability. It takes a Cube™-ready platform, a Cube™ Side or Stern Loader, and Cube™ Certified payloads. Additionally, it takes the Cube™ Skidding System and elevator to move payloads around on decks or between decks.

Future proof

With The Cube™ System Coast Guard, SAR and Navy vessels can reconfigure new mission profiles on all domains without costly rebuilding or interchange payloads between platforms in less than four hours. When Cube™ Modules are not on board, they are ashore for maintenance, the crew's training or as part of a harbour integrated emergency preparedness capability.

Certified solution

This is performed on a special stand. The Cube™ System is designed according to DNV GL ST-0378 and is NATO STANAG compliant. It provides a safe and robust foundation for any mission equipment.

Interchangeable mission modules for Air, Surface, Land and Subsea capabilities. The Cube™ is a modular system developed to host and deploy equipment. All modules use the footprint of shipping containers and are loaded into the side of platforms with mission bays.

Why is this smart?

Because with The Cube™ System, any Navy can turn (almost) any platform into a future-proof multi-mission capability.

We make things move!

Our complex mechanical machines and systems, built from the ground up, help move people and equipment deep below the waterline, across waters and borders, and above the ground. We love challenges and find pride in being able to solve even the most difficult tasks. Making the impossible possible and finding innovative ideas where there are no solutions today.

Changing the game at sea

The Cube™ is the future of mission modularity. Turn (almost) any platform into a future-proof multi-mission capability using 300+ interchangeable modules for all four dimensions of modern warfare.

All production is done in-house

The mission of our engineers is to design and manufacture custom-made solutions according to our client's actual needs and technical requirements.

Our solutions are often complex mechanical machines and systems built from the ground up.

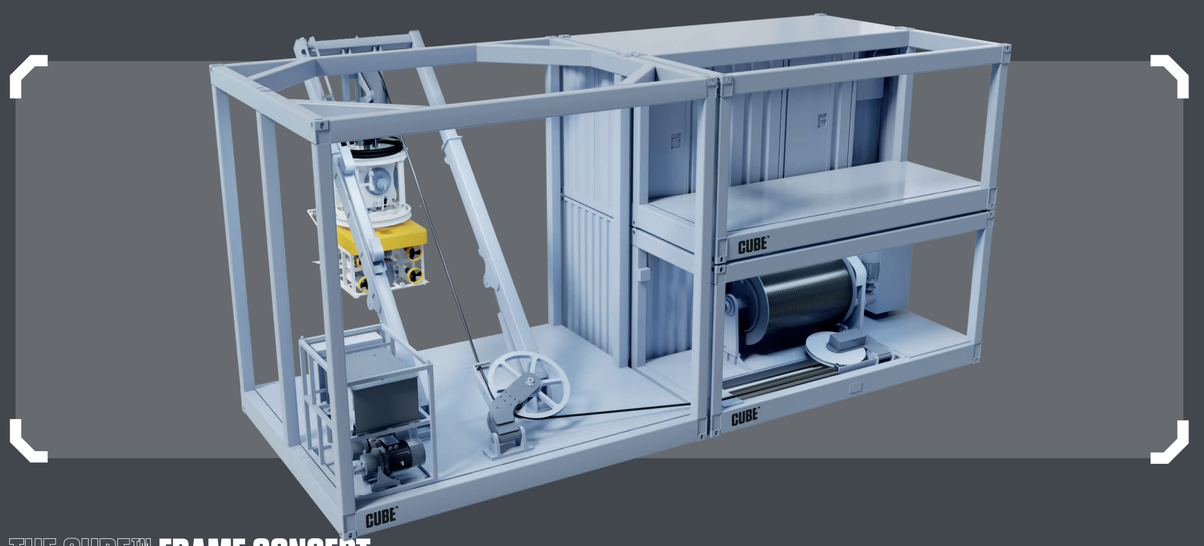
They combine design, steel, hydraulics and automation and must be reliable, secure and easy to operate above and below the waterline, in any weather conditions and during combat. Next to the high demands of the navy come the demands and requirements of the Oil & Gas industry in the northern hemisphere. With the delivery of hundreds of systems and equipment solutions, for more than three decades to this demanding segment, SH Defence will be a perfect partner to take on any engineering challenge.

"OUR PRODUCTS MEET THE HIGHEST STANDARDS!"

SH Defence delivers

- -// 3D design
- -// 2D drawings
- -// FEM calculations
- -// FEM analysis
- -// Non-linear FEM analysis
- -// Non-linear transient dynamic analysis
- -// FEM Modal analysis
- -// CE marking
- -// Documentation
- -// HSE
- -// Project Management
- -// Site Commissioning
- -// Field assistance – Supervising





THE CUBE™ FRAME CONCEPT

The Cube™ System is both equipment modules and a handling system to replace and move the modules around.

With The Cube™ System – Any Navy can turn almost any platform into a true multi-mission capability.

It takes a Cube™-ready platform, a Cube™ Side or Stern Loader, and Cube™ Certified payloads. Additionally, it takes the Cube™ Skidding System and elevator to move payloads around on decks or between decks. With The Cube™ System Coast Guard, SAR and Navy vessels can reconfigure new mission profiles on all domains without costly rebuilding or interchange payloads between platforms in less than 4 hours.

When Cube™ Modules are not on board, they are ashore for maintenance, the crew's training or as part of a harbour integrated emergency preparedness capability.
This is performed on a special stand designed with twist locks.

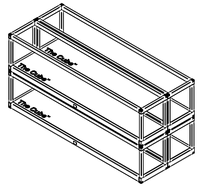
The Cube™ System is designed according to DNV GL ST-0378 and is NATO STANAG compliant. It provides a safe and robust foundation for any mission equipment.



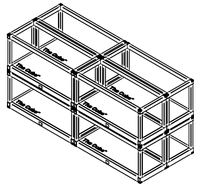
NEXT-GENERATION MARITIME PLATFORM

PLATFORMS FOR LEADING NAVIES

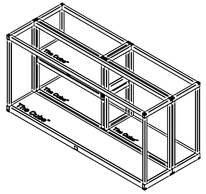
4X 40´- THE CUBE™



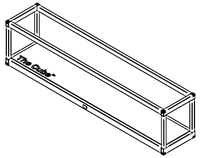
8X20´- THE CUBE™



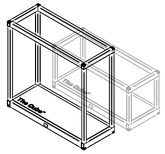
MIX OF 20´ AND 40´



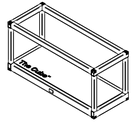
STANDARD 40´



2X 20´



STANDARD 20´

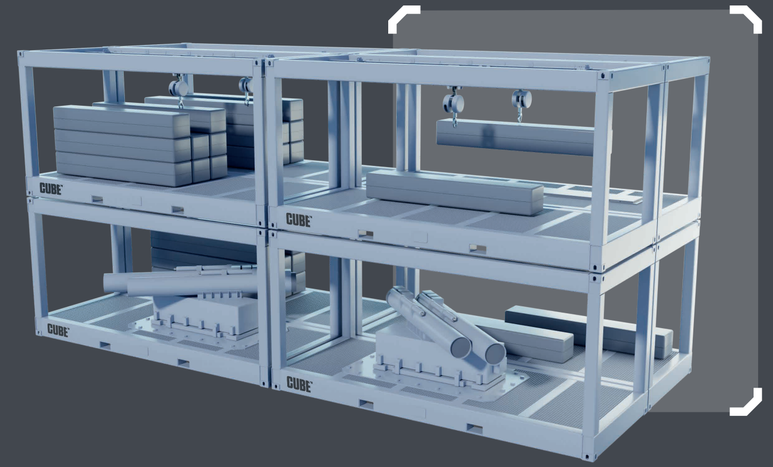


MAKE YOUR EQUIPMENT CUBE™ READY

THE CUBE™ MODULE SIZES

This document aims to raise awareness of the Maritime Modularity and bring the concept of Maritime Modularity into Project 1118 while introducing The Cube™ System as a solution for the RNorN in their consideration of the future fleet.

The Cube™ is a modular system developed to host and deploy equipment. All modules use the footprint of shipping containers and are loaded into the side of platforms with mission bays. This is smart because, with the Cube™ System, any Navy can turn (almost) any platform into a future-proof multi-mission capability and make them mission ready.



CONTAINERS TO CUBES

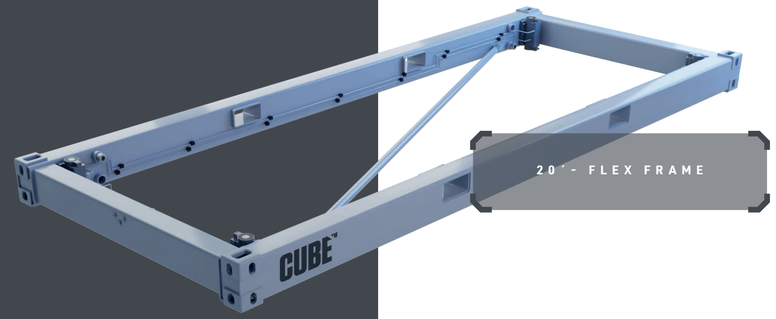
THE CUBE™ FLEX FRAME

The purpose of the Cube™ 20' Flex Frame is to convert standard 20' shipping containers into Cube™ – Ready high-cube containers that can be loaded and unloaded using the Mobile Cube™ Side Loader.

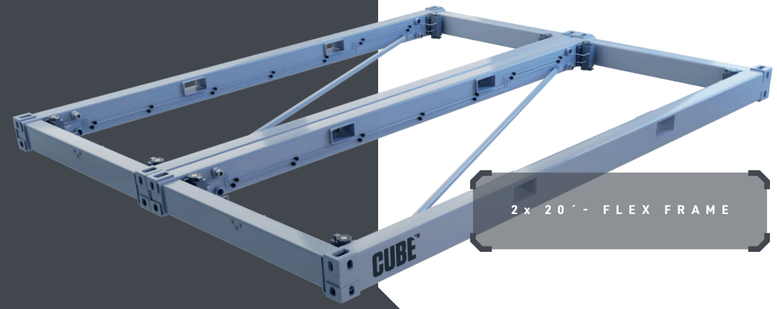
The flex frames can be assembled two and two side-by-side using the included bolts stored in the frame during transport, eliminating the need for additional storage of bolts. Empty flex frames can be stacked up to eight high for easy transport by ship, train or truck.

Type-approved design

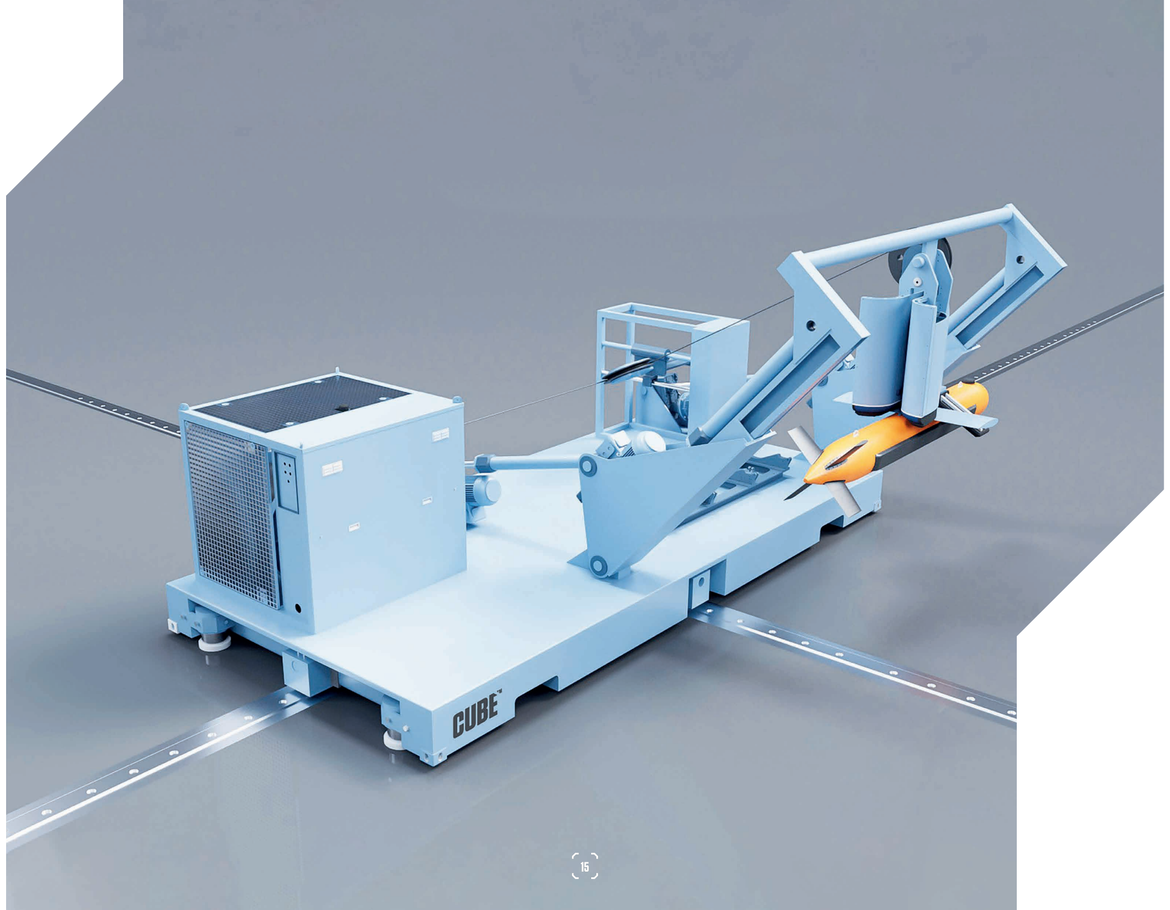
The flex frames are designed and type-approved according to DNV GL ST-0378 for offshore and platform lifting appliances. They also conform to ISO 668 and are delivered with a CSC certificate for shipping.



20´- FLEX FRAME



2x 20´- FLEX FRAME



CUSTOM FRAME SOLUTIONS

THE CUBE™ ENGINEERED FRAME

The Cube™ Engineered Frame provides a strong and safe foundation for any mission payload that is either too heavy, too large or too complex to be mounted on the Cube™ 20' Base Frame.

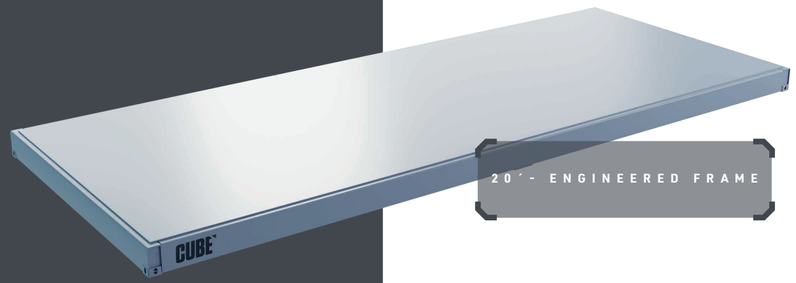
The frame is provided with ISO corner castings enabling secure sea fastening by means of the fully automatic, retractable twist-lock system developed by SH Defence.

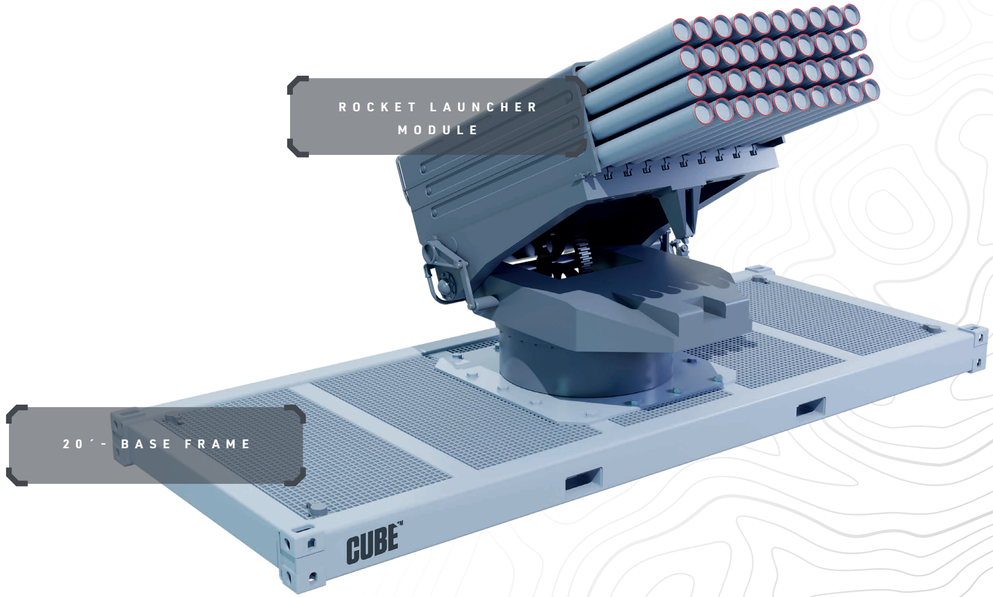
The frame is customised to withstand the forces introduced by the equipment to be mounted on the frame. The surface of the Cube™ Engineered Frame is made of glass-reinforced plastic (GRP) grating, which provides a very strong and anti-slip surface.

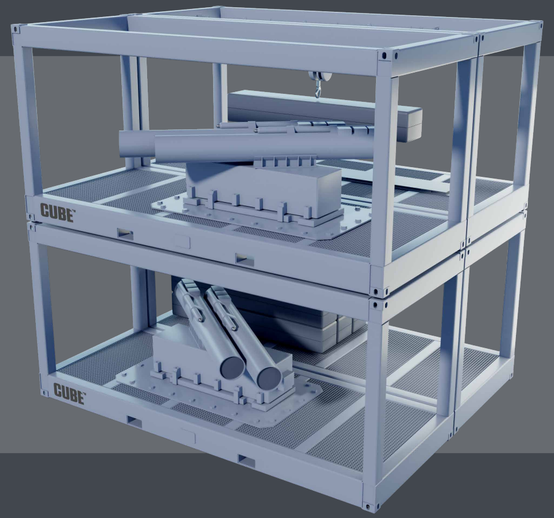
The Cube™ Engineered Frame can be delivered with a crash frame and tarpaulin as an option. The standardised design offers plug-and-play functionality. Even though the frame is customised to the mission equipment, it is always compatible with the Cube™ concept:

It fits in standard 20' or 40' Cube™-ready mission bays, can be sea fastened using the fully automatic, retractable twist lock system and can be loaded and unloaded using the hydraulic jacks fitted in the mission bay in combination with either the Cube™ Mobile Side Loader or the Cube™ Mobile Stern Loader.

The Cube™ Engineered Frame is a plug-and-play structure provided with standard connections compatible with the mission bay standard connection cabinet CubedIn™.







CUSTOM FRAME SOLUTIONS

THE CUBE™ BASE FRAME

With the Cube™ 20' Base Frame, any light and medium-weight mission equipment that has a footprint smaller than a standard 20' container can be turned into a Cube™, and if SH Defence mounts the equipment on the base frame, the Cube™ will be delivered with a Cube™ – Ready certificate.

The base frame is a welded steel structure with four profiles for optimum strength, and ISO corner castings are fitted at the top and bottom for lifting and sea fastening.

The surface of the Cube™ 20' Base Frame is made of glass-reinforced plastic (GRP) grating, which provides a very strong and anti-slip surface.

The Cube™ Base Frame is a plug-and-play structure provided with standard connections compatible with the mission bay standard connection cabinet CubedIn™.
Furthermore, the base frames are provided with forklift pockets for empty handling.

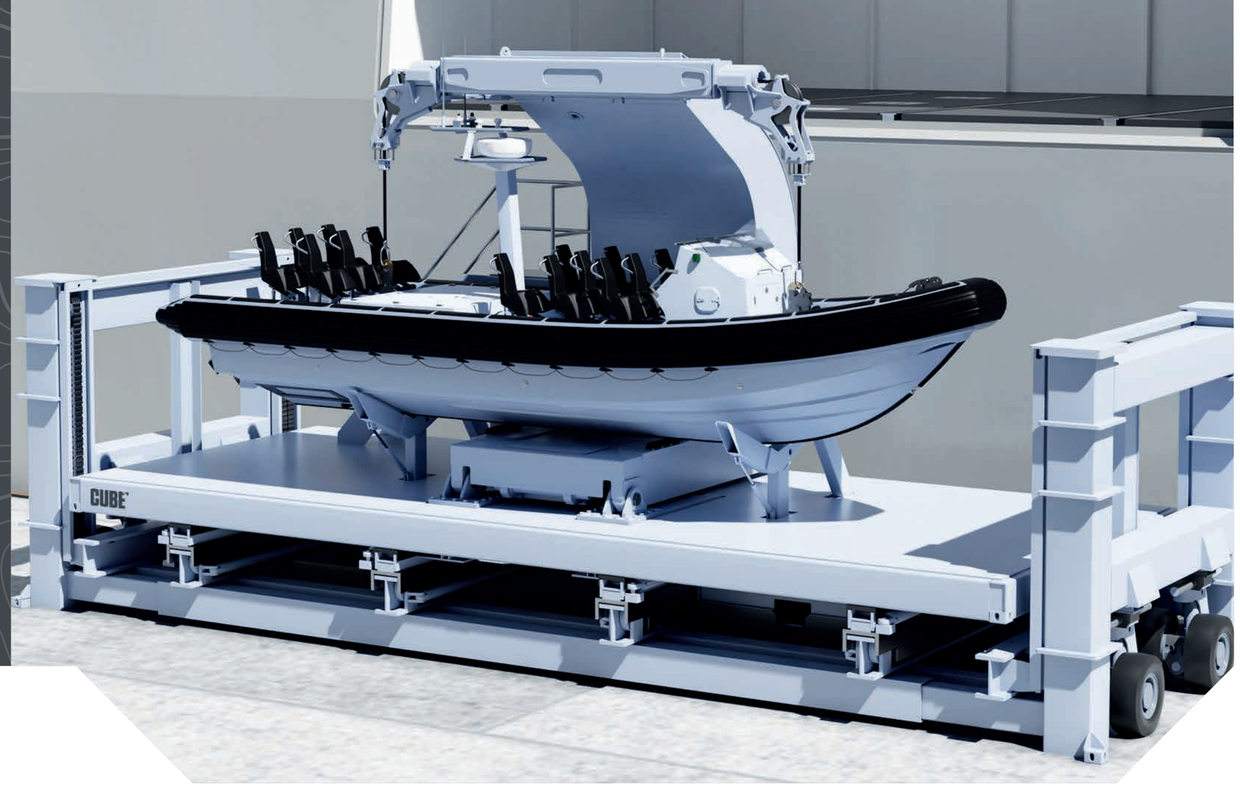
The Cube™ 20' Base Frame is designed according to DNV GL ST-0378 for offshore and platform lifting appliances and it conforms to ISO 668.

The Cube™ 20' Base Frame is type approved, so no lengthy approval process is required to have your Cube™ approved and ready for deployment. The Cube™ 20' Base Frame is delivered with a CSC certificate for shipping.



THE CUBE™ MODULE WITH A FAST INTERCEPTOR
READY FOR MOUNTING IN A MISSION BAY

PLUG N' PLAY SOLUTION


CUBE

NAVAL STATION KORSØR

22/03/2023



We had the pleasure of hosting a live presentation of our Cube™ System at the Naval base in Korsør, Denmark.

Present were 100 participants from the Danish Ministry of Defence, The Royal Danish Navy, the Danish Defense Acquisition and Logistics Organization Forsvarsministeriets Materiel- og Indkøbsstyrelse, friends and partners.

The presentation was of our Cube™ System and, in particular, the Cube™ Loader in the process of positioning itself in front of what was supposed to act as a frigate, after which the module with an RHIB was launched into the water and recovered.

The Cube™ System is a plug-and-play mission module for air, surface, and subsea domains run from a Cube™ Ready platform. And It is an Ecosystem to quickly handle and move Cube™ mission modules on deck, inside the hangar or replace existing modules in the mission bay.

We want to take this opportunity to say thank you to the many people who made the presentation a success.



THE CUBE™ LOADER IN THE PROCESS OF POSITIONING ITSELF IN FRONT OF WHAT WAS SUPPOSED TO ACT AS A FRIGATE,

AFTER WHICH THE MODULE WITH AN RHIB WAS LAUNCHED INTO THE WATER AND RECOVERED





DECK EQUIPMENT AND HANDLING SOLUTIONS

LAUNCH AND RECOVERY SYSTEM

Our product line Sepro™ has got one the most comprehensive product portfolios in the market for LARS (Launch & Recovery Systems) and has an extensive experience and knowledge within design, engineering, automation, project management and production.

Sepro™ offers turnkey system deliveries including system integration as well as single product deliveries.

Design, production, assembly and testing are carried out at one of SH Group's locations.

This is done deliberately to ensure optimum control of quality and functionality for each delivery.

We have an excellent track record with the majority of these systems in daily operations worldwide.

In a market with a strong focus on flexibility and transport costs, SH Group is experiencing an increasing interest in solutions based on the ISO container standard–especially the 20ft container setup.

In response to the demand, SH Group offers many of our systems based on this international standard.

With well-known dimensions and weights, the equipment fits into the global transport system to benefit all parties and, ultimately, the project's bottom line.

Handling systems and deck equipment from SH Group will meet any requirements whether the research vessel is on a seismic or hydrographic survey, construction or dredging job or oil exploration.

All our equipment is reliable, safe and easy to operate in any weather - even the most demanding conditions at sea.







Handling systems and deck equipment from SH Group will meet any requirements whether the research the vessel is on a seismic or hydrographic survey, construction or dredging job or oil exploration.

All our equipment is reliable, safe and easy to operate in any type of weather - even the toughest conditions at sea. Design, production, assembly and testing are carried out in Denmark.

This is done deliberately to ensure optimum control of quality and functionality for each delivery, hence reducing installation and testing time on site.

Overhead Rail System ORS™ - Gantry type of LARS with extensive lowering capabilities along the ship-side rails making the launch of ROV possible below the splash zone.

Since a research voyage is planned many months, it is very important that all launch and recovery equipment on board, are reliable and operational when required, as you only have a specific window to carry out the planned test, sample collecting, filming etc.

"THE LARS DELIVERED TO US BY SH GROUP HAS PROVEN ITSELF AS BEING VERY RELIABLE AND EASY TO OPERATE."





REMOTE-CONTROLLED//FULLY AUTOMATIC

TWIST LOCK SYSTEM

Conventional manual and semi-automatic twist locks are widely used for sea fastening of containers around the world. However, manual operation of the twist locks can be time-consuming and sometimes it even poses a risk to the crew.

SH Defence's remote-controlled, fully automatic, retractable twist lock system sets a new standard for easy and reliable the sea fastening of The Cube™ Multi-Mission Modules as well as standard containers with ISO corner castings. The twist lock system is remote-controlled, eliminating the need for manual operation of twist locks and reducing the risk of human error.

Increased safety

An adapter plate for each twist lock will be welded into the deck structure. Deck penetration is sealed and watertight. When not in use, the individual twist locks are lowered to be flush with the deck, providing a clear deck without any trip hazards.

Intuitive control interface

The Automatic Twist Lock System comprises a centralized hydraulic power unit (HPU), and several hydraulically activated twist locks with individual feedback on all functions. The number of twist locks depends on the size of the mission bay: a 20' mission bay has 8 fully automatic twist locks and a 40' mission bay has 16 fully automatic twist locks.

Each twist lock comes with built-in sensors enabling fully automatic remote control and monitoring. The twist locks can be controlled, from the intuitive control panel, in independent groups of 4 which equals a 20' container footprint.

The control panel has a 9" colour touch display showing the status of each twist lock.

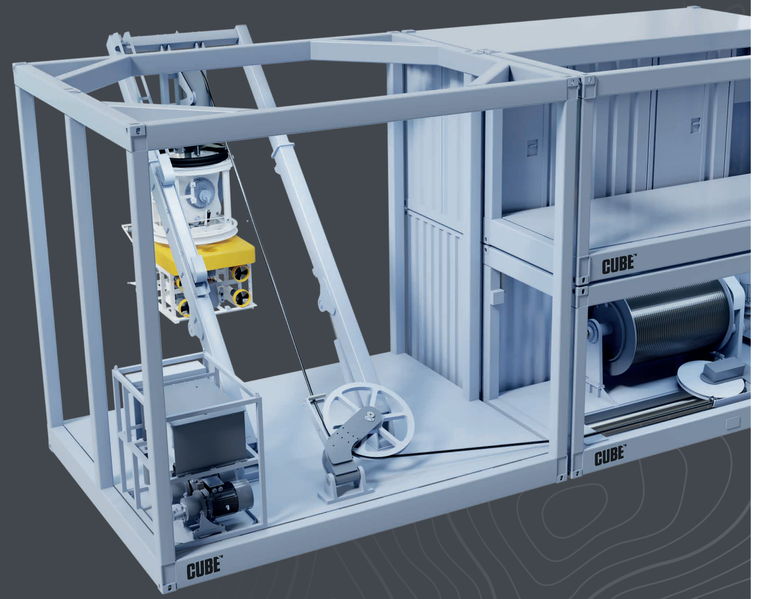
The control is sequential to ensure that it is, for example, not possible to lock the twist locks before the system confirms that all of the required twist locks have been extended above deck level. The control is provided with a manual override function.



Durable and reliable design

The twist lock housing is of mild steel grade S355 and painted to corrosion class C4. Twist lock piston and the cone is made of duplex stainless steel.

The Automatic Twist Lock System is type-approved according to DNV GL ST-0068 on certification of container securing devices and ISO 1161.



8X 20' LARS SYSTEM WITH HPL A-FRAME

LAUNCH AND RECOVERY MODULE

Complete Cube-ready launch and recovery system with winch for deployment of unmanned and remotely operated vehicles and drones. Fits in a 40' Cube-ready mission bay.

Modern navy vessels must be capable of carrying out different missions in both peacetime and wartime. Unmanned underwater vehicles (UUVs or drones) and remotely operated vehicles (ROVs) are used in many types of missions and thus there is a great need for reliable and safe launch and recovery of such equipment.

In the design of this versatile Cube-ready LARS, SH Defence has applied several decades of experience in designing and delivering launch and recovery systems (LARS) for the offshore segment.

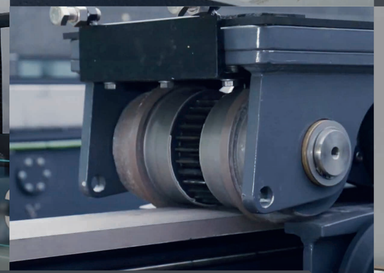
The system can be provided in many different configurations and sizes depending on the specific type of equipment to be launched. Examples of equipment could be an ROV with a floating umbilical, an ROV with a tether management system, scientific probes or underwater drones.

In this example, the 3.5-tonne A-frame is mounted on a double 20' Cube™ Engineered Frame which is combined with two 20' Cube™ One engineered frames containing an appropriately dimensioned winch, a 20' container equipped with operators cabin.

The entire LARS Cube™ with winch and storage modules is ready for installation in a 40' Cubeready mission bay.







300+ MODULES READY TO BE LOADED

THE CUBE™ SIDE LOADER

Modern naval vessels must be capable of carrying out different missions and roles in both peacetime and wartime. Reconfiguring vessels for new missions can be both costly and time-consuming. That is why SH Defence developed The Cube™.

The flexible and cost-saving vessel conversion

The Cube™ is a flexible and cost-saving solution consisting of modular equipment with standardized interfaces enabling the reconfiguration of vessels in less than 4 hours.

All you need to do is unload the Cube™ modules that are no longer required and load the modules that support the vessel's next mission.

Heavy lifting equipment moved to the quayside The fast conversion is enabled with the Mobile Cube™ Side Loader, capable of loading and unloading Cube™ modules into and out of Cube™-ready mission bays along the vessel's side, thus eliminating the need to install heavy lifting equipment in the vessel's mission bays.

For mission bays to be Cube™-ready, they must have dedicated tracks for the Mobile Cube™ Side Loader roller beams and dedicated pockets for the loading beams along the front edge of the mission bay.

The mission bay must also be provided with a fully automatic twist-lock system for sea fastening of the Cube™ modules, a standardized connection cabinet CubedIn™ for all other interfaces, e.g. power, air, water, communication etc. and integrated hydraulic jacks for jacking up the Cube™ to allow the Mobile Cube™ Side Loader to retract or place its roller beams during loading and unloading.

OPERATED WITH REMOTE CONTROLLER





The self-contained, multi-functional Mobile Cube™ Side Loader can transport and lift mission-ready 20' and 40' Cube™ modules to 6 metres above quayside level and into the vessel's Cube-ready mission bays.

The Mobile Cube™ Side Loader is fitted with four pairs of wheels with fail-safe spring-activated brakes. A diesel-hydraulic pump unit (HPU) supplies power for the wheels and all other hydraulic functions.

Automatic positioning relative to the vessel.

The operator of the Mobile Cube™ Side Loader has a dedicated platform to stand on during driving and loading. For the correct placing of the Mobile Cube™ Side Loader relative to the vessel and vessel mission bay, the loader is provided with a laser distance measuring unit front and aft.

Sider Loader operation

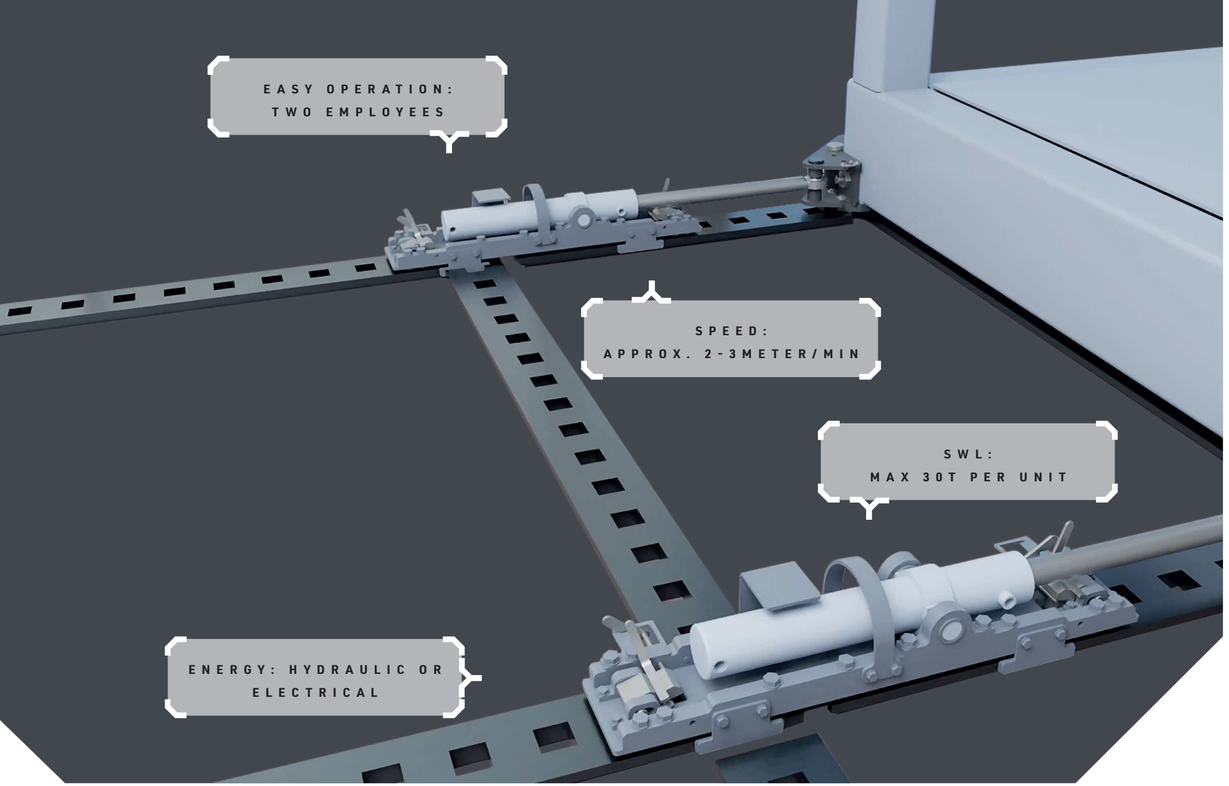
These assist in orientating the Mobile Cube™ Side Loader parallel to the vessel, and a camera helps centre the Mobile Cube™ Side Loader in front of the mission bay.
Loading towers and loading beams are operated with a semi-automated control system. Guide pins to ensure the correct placement of Cube™ modules on the loader before the modules are lifted into the mission bay.

The Mobile Cube™ Side Loader loading beams must be secured in the pockets in the mission bay before the Cube™ module is loaded into the bay. When the beams are secured in the pockets, the Mobile Cube™ Side Loader enters floating mode, which means that it automatically adapts to vessel movements, surge, roll and heave, during loading and unloading.

Tilt monitoring is active in both drive and floating mode. During manoeuvring, flashing lamps and sounds alert personnel close to the loader that the equipment is live and that there is a potential hazard.

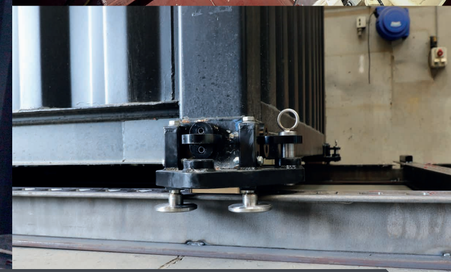
The Mobile Cube™ Side Loader is equipped with cylinders and a telescopic frame, allowing the operator to reduce the length of the loader for shipping as a Cube™.

THE CUBE™ SKIDDING SYSTEM









The flexibility of the Cube™ System does not stop here. In fact, we have designed a whole infrastructure to quickly handle and move Cube™ modules around on the open deck, inside the hangar or, as already mentioned, replace existing modules in the mission bay. No more heavy overhanging cranes or sophisticated and expensive handling solutions.

The Cube™ infrastructure covers elevator functionality, davit and launch and recovery systems and a Sea Skidding System to safely move modules all around the platform from bow to stern, up and down and from Port to Starboard side or from the hangar to boats aft, all in sea state 4. The dream scenario is a platform that can quickly change equipment or even mission profiles without going into port - With our skidding system, this is now possible.

WITH REMOTE CONTROLLED TRACTOR

THE CUBE™ MODULE MOVER

ADAPTABILITY IS AT THE HEART OF NEXT-GENERATION MARITIME PLATFORM DESIGN FOR LEADING NAVIES WORLDWIDE



SKIDDING SYSTEM ON WHEELS WITH BATTERY-DRIVEN TRACTOR DESIGNED FOR HANDLING OF CUBE™ MULTI-MISSION MODULES



MOTOR: 3KW

LIFTING CAPACITY: UP TO 31 MT

LIFTING HEIGHT (10MT): 500 MM

BATTERY: 24V DC EXIDE TENSOR

SH Defence has developed the multi-mission modules concept called The Cube™ to enable reconfiguration of naval vessels from one mission to another in less than 4 hours.

All you need to make this happen is Cube™-ready mission bays and equipment installed in 20' or 40' Cubes™. We have already identified 300+ different mission modules, but with this system, the sky is the limit!

Secure and compact storage during sea voyage The system is provided with a docking station for secure storage of all system components. The docking station footprint is very small and provides optimum and compact storage during sea voyage. The docking station is welded onto the deck.





SH Defence has developed the multi-mission modules concept called The Cube™ to enable the reconfiguration of naval vessels from one mission to another in less than 4 hours.

Compact and easy to operate

All you need to make this happen is Cube™-ready mission bays and equipment installed in 20' or 40' Cubes™.

We have already identified 300+ different mission modules, but with this system, the sky is the limit! Easy and compact onboard skidding system on wheels The SH Defence Skidding System with Tractor is ideal when you need to rearrange your Cubes™ on board the vessel or around the harbour.

The system consists of four separate bogie wheel units with a hydraulically operated lifting function that can lift and shift 20' and 40' Cubes™ weighing up to 10 MT.

Two of the bogie wheel units are connected to the manoeuvring mechanism which is connected to the battery-driven tractor. The hydraulic lifting operation can be either manual or remote, and the battery-driven tractor is manually operated by the crew.

Secure and compact storage during sea voyage The system is provided with a docking station for secure storage of all system components.

The docking station footprint is very small and provides optimum and compact storage during sea voyages. The docking station is welded onto the deck.



WATCH THE FULL VIDEO HERE

THE CUBE™ BOAT CRADLE

SH Defence hydraulic mission bay doors are customized to fit any requirements.

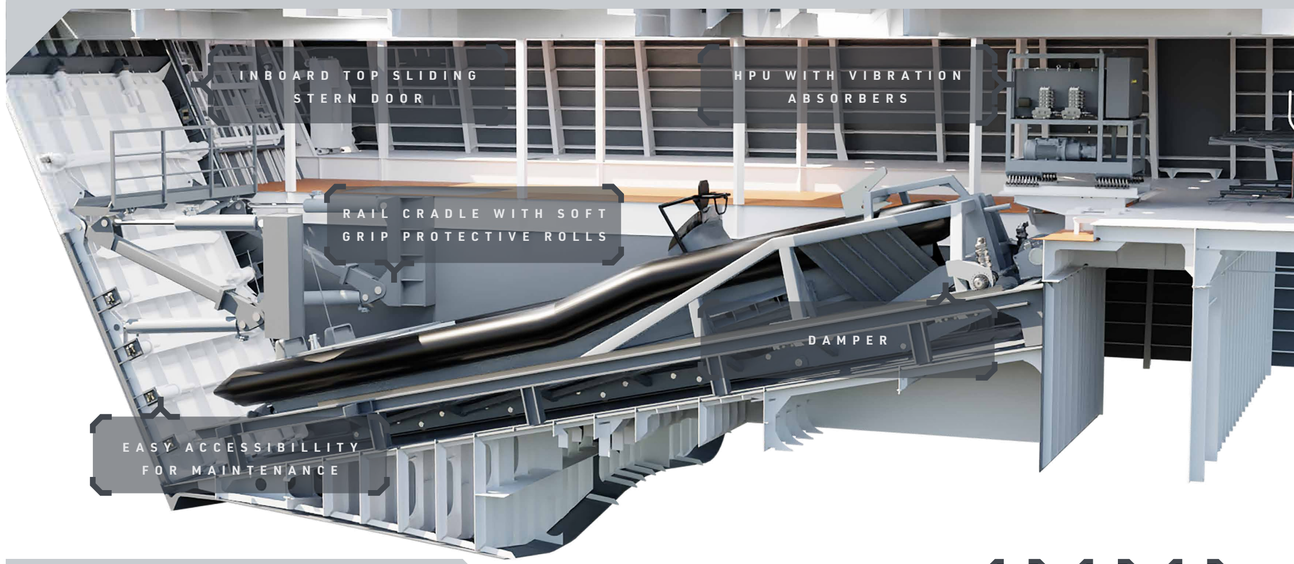
The door and all mechanical parts are made of seawater-resistant material. The door itself is made in either steel, aluminium, bulletproof- or lightweight composite (lightweight armour plating based on sophisticated fibre composites), protecting personnel and equipment.

Boat cradle

Flexible boat cradle system to accommodate RHIBs and special operation boats. The flexible cradle and launch and recovery system can handle a wide range of boats with different hull forms. Slipway is also tailor-made for drones and USVs.

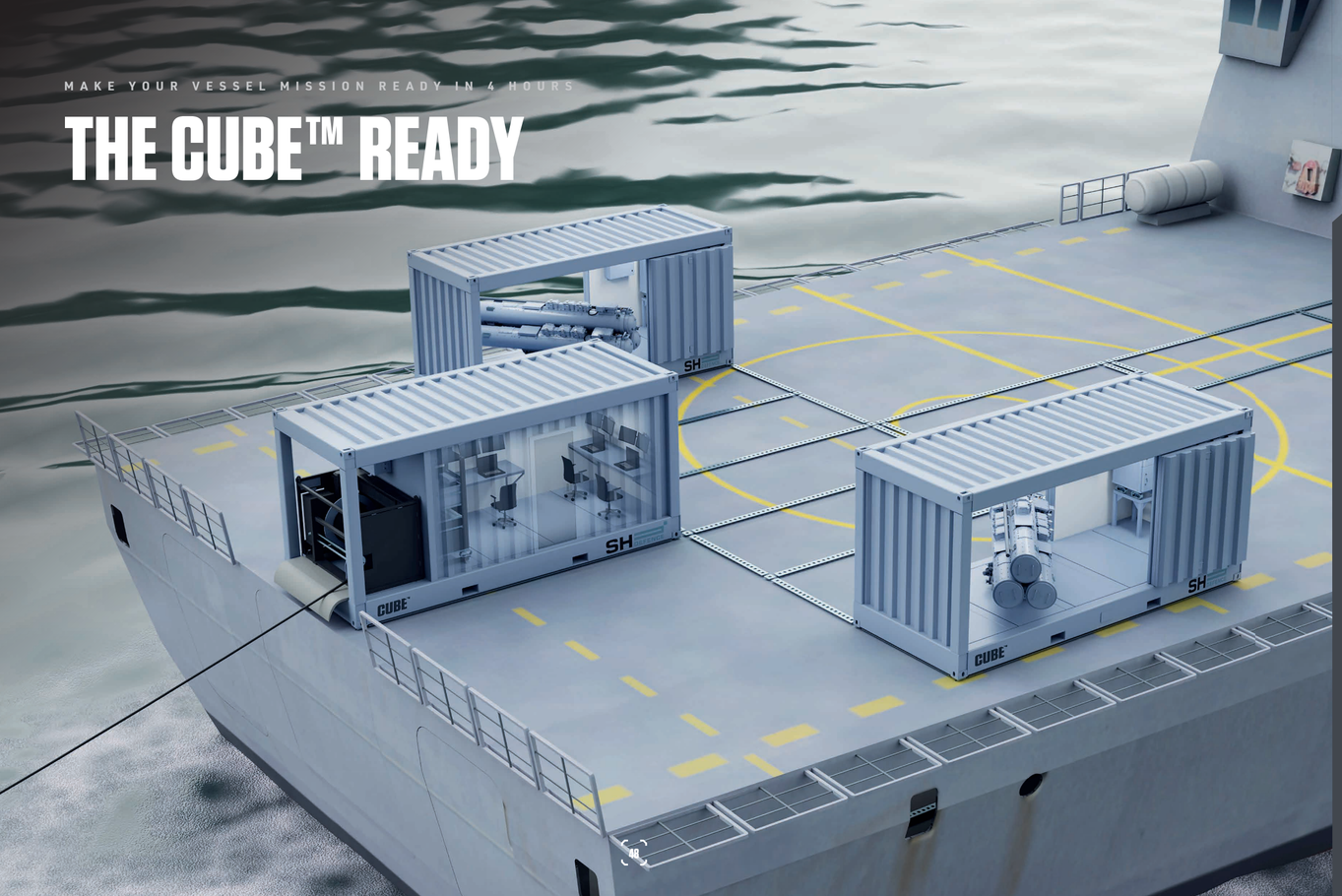
The system is perfect for frigates, corvettes and OPVs with various missions and allows for one or two boats to be stowed behind each other. The LARS system is reliable, safe and fast to operate up to Sea State 6.

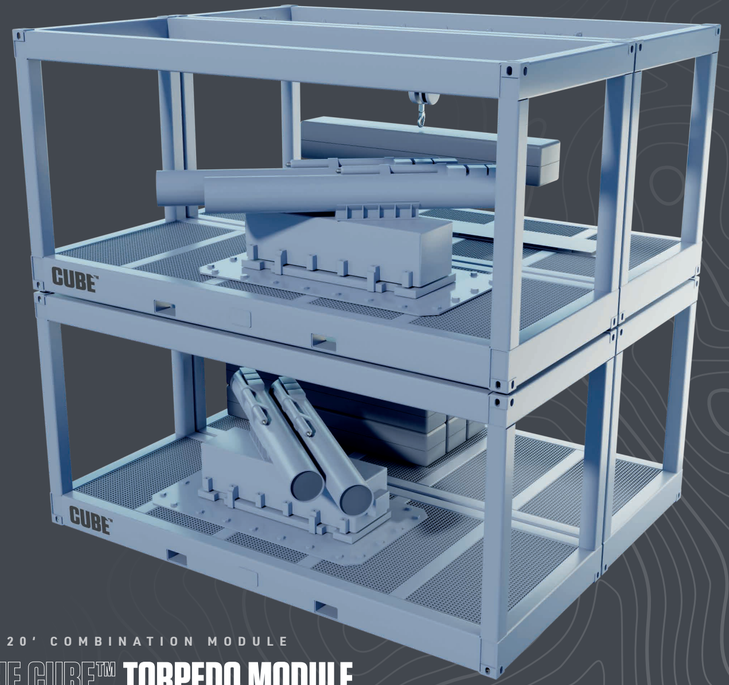
WATCH THE FULL VIDEO HERE



MAKE YOUR VESSEL MISSION READY IN 4 HOURS

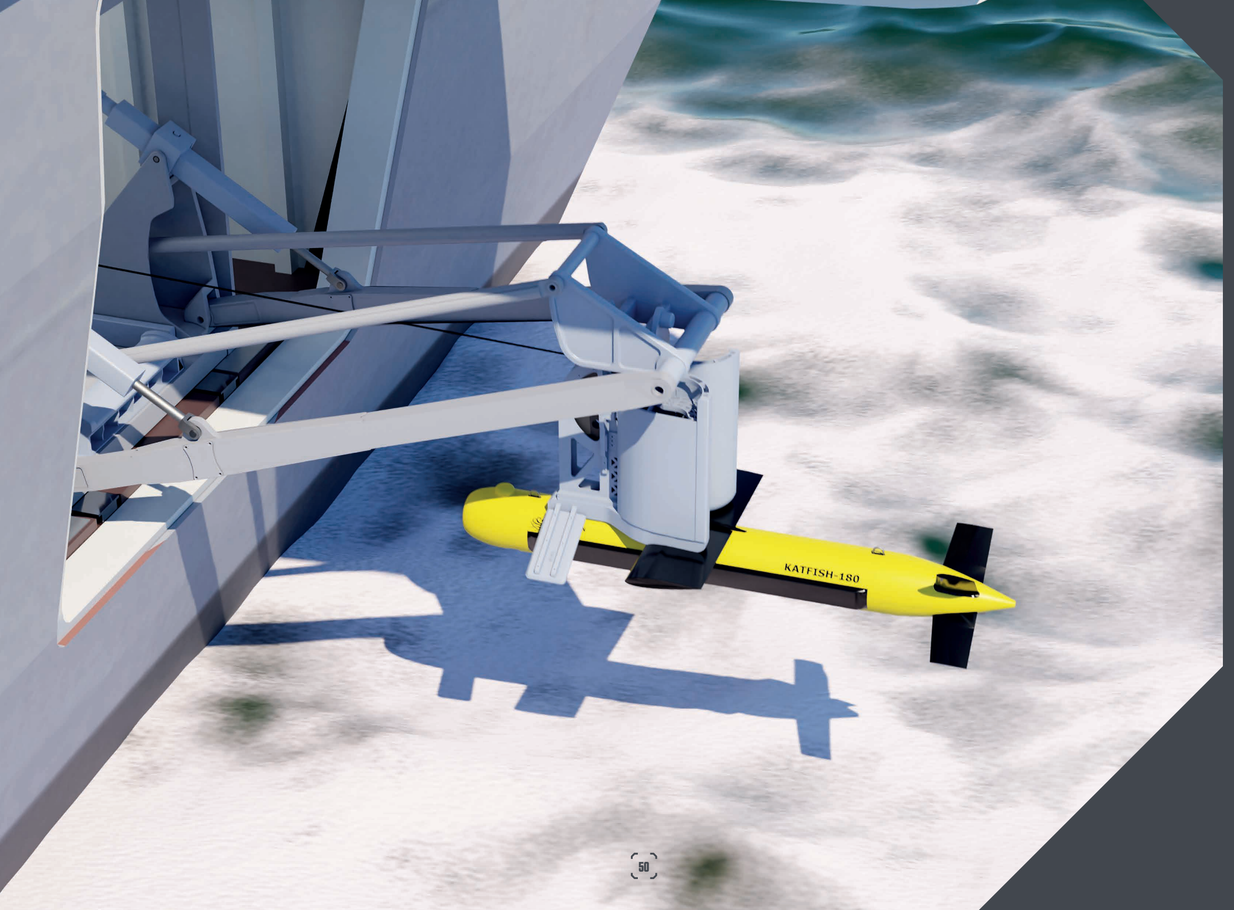
THE CUBE™ READY

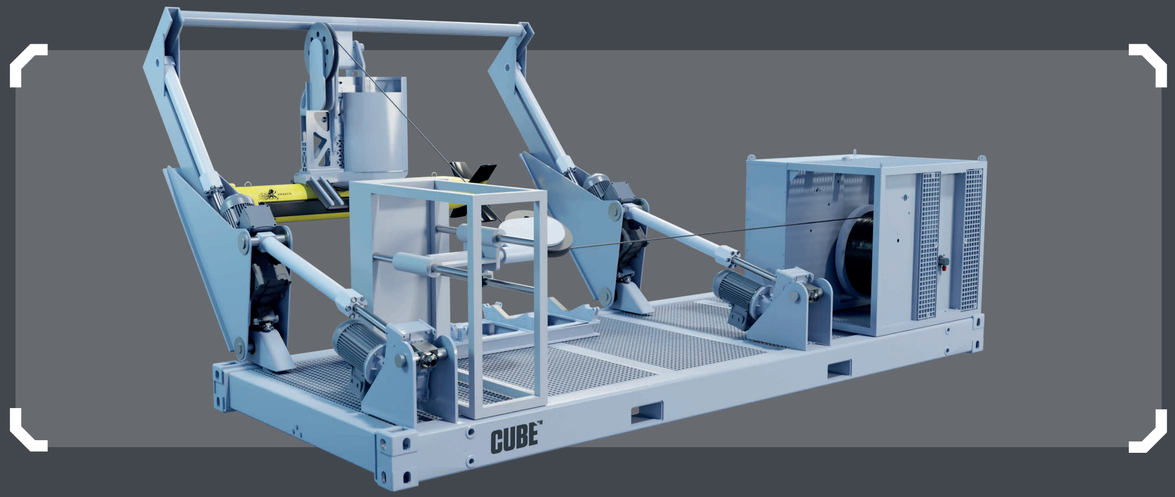




4x 20' COMBINATION MODULE

THE CUBE™ TORPEDO MODULE





MCM SONAR MODULES

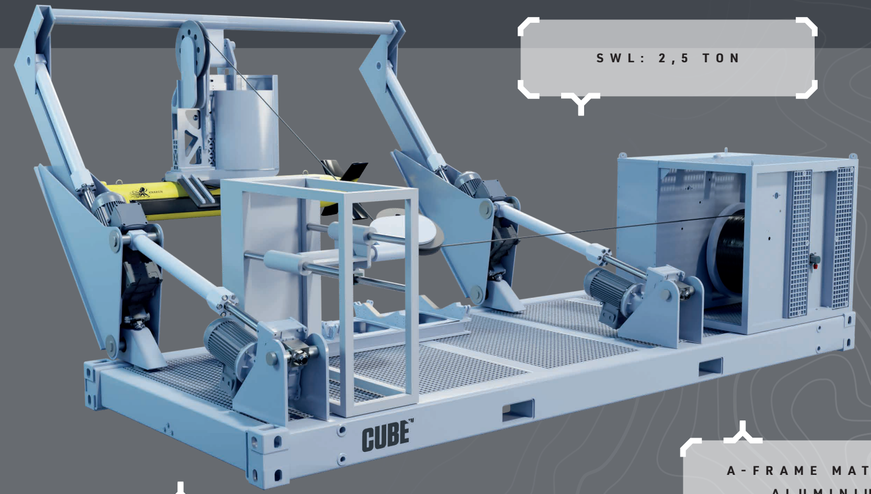
THE CUBE™ SIDE PROBE AND TOW

Complete Cube-ready launch and recovery system for probes and towed vehicles Seamless deployment and recovery of hydrographic survey equipment.

This Cube-ready launch and recovery system for probes and tow fish ensures reliable deployment of hydrographic survey equipment from the side of the vessel. The system consists of a winch and an A-frame with a gripper installed on a 20' CubeTM Engineered Frame. The 20' CubeTM Engineered Frame is a plug-and-play structure compatible with the mission bay standard connection cabinet CubedInTM, allowing installation and easy connection in any 20' Cube-ready mission bay.

KRAKEN

KRAKEN ROBOTICS

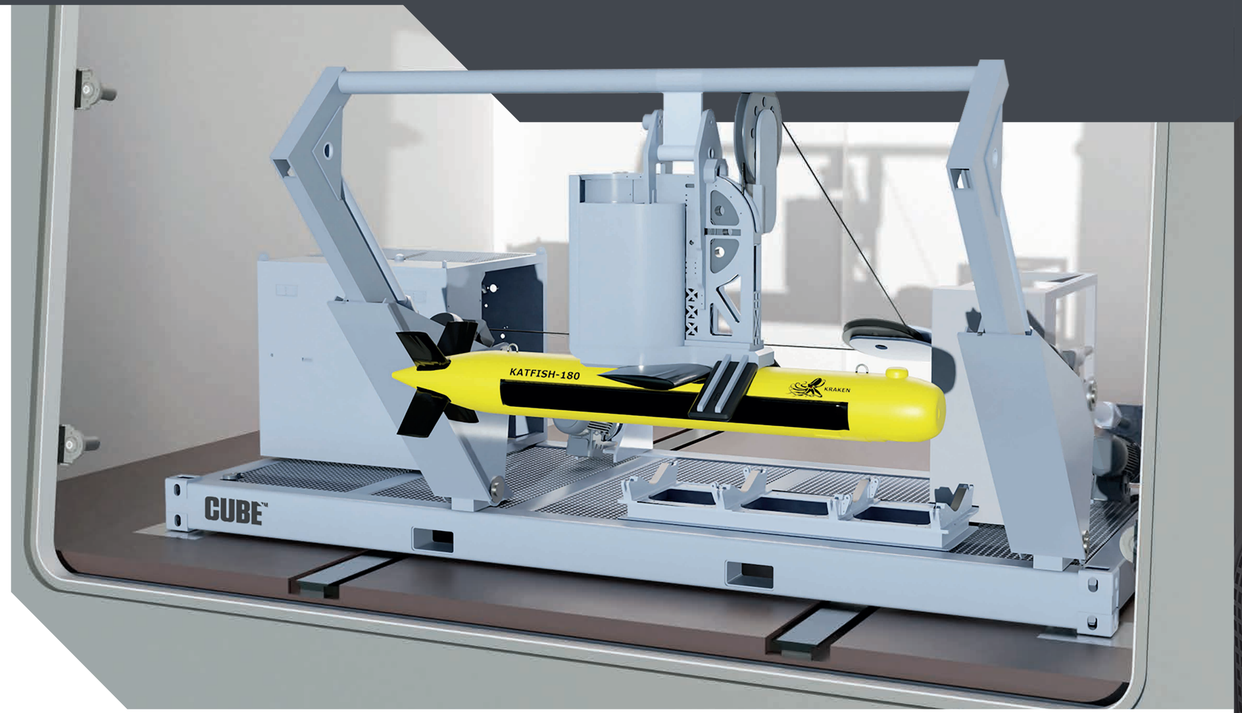


SWL: 2,5 TON

A-FRAME MATERIAL
ALUMINIUM

20‘ BASE FRAME
SOLUTION

SIDE OR DECK MOUNTED
LAUNCH AND RECOVERY



The A-frame is mounted on a Cube™ Engineered Frame and by means of a hydraulic extension boom it extends over the side of the vessel lowering the hydrographic survey equipment down the side of the vessel for deployment and towing operation. The A-frame is of non-welded aluminium, offering high strength, low weight and a reduced magnetic signature.

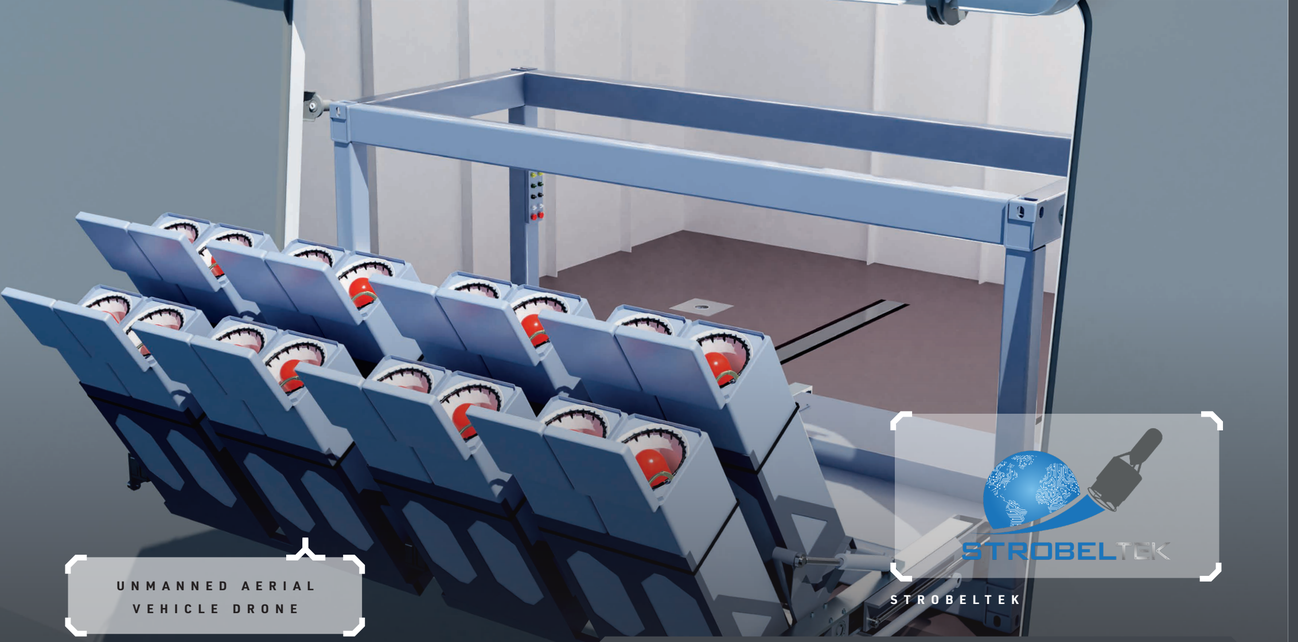
Winch and A-frame operation is automatically synchronised without operator intervention, ensuring that the rope length is perfectly aligned with the A-frame position at all times.

The system is very versatile and can be provided in many different configurations and sizes depending on the specific type of equipment to be deployed. The system can be delivered with hydraulic or electric winch according to customer preferences.

The length of the winch rope can be adjusted to fit the required mission and hydrographic equipment to be used as can the gripper.

The system can be supplied as a fully automatic or semiautomatic system, again depending on the mission at hand and customer preferences. If you want to know more about the possibilities and available options, please contact SH Defence.

WATCH THE FULL VIDEO HERE



UNMANNED AERIAL VEHICLE DRONE

STROBELTEK

MILLITARY SCOUTING

THE CUBE™ IRS DRONE MODULE

Unmanned aerial vehicles – UAVs or drones – have become an important part of many naval operations. From search and rescue operations over detection of oil or chemical spills to intelligence operations and extension of radio/telecom signals, the UAVs are an excellent tool capable of covering large areas.

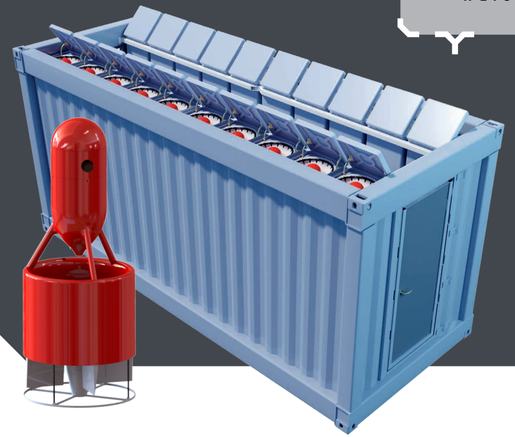
Customized to fit 20´

SH Defence has developed a UAV Top Launch and Recovery System Cube™ consisting of a 20' Base Frame container with an open top for vertical launch and recovery of UAV swarms.

Fits in a 20' Cube™-ready mission bay As with all other Cubes, the UAV Top Launch and Recovery System has the footprint of a standard 20' high-cube container and comes with the standard connection interfaces that are compatible with the Cube™-ready mission bay standard connection cabinet CubedIn™ for plug-and-play charging and communication functionality. The UAV Top Launch and Recovery System also comes with an interface to the CMS.

Easy UAV recovery

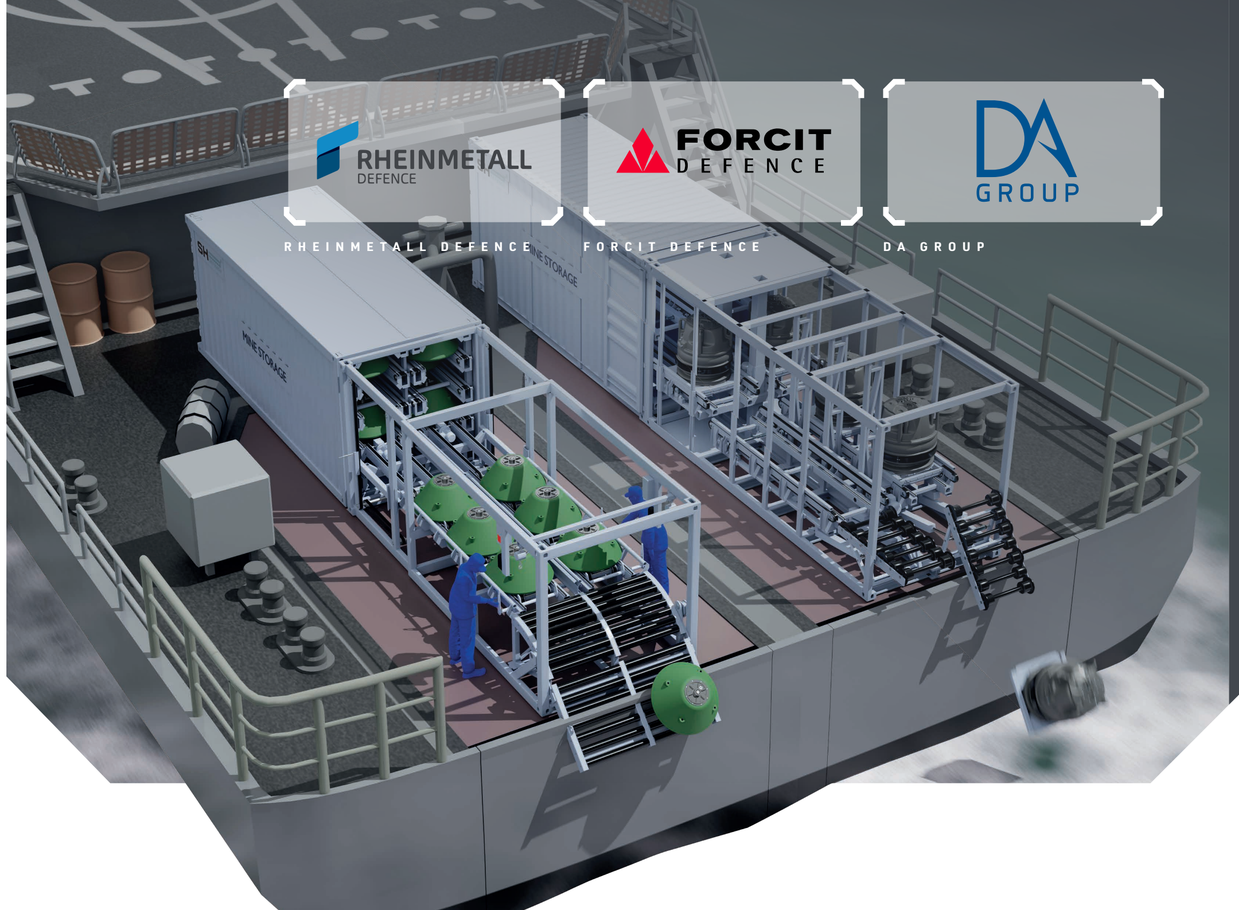
When UAVs return to charge or UAVs from other vessels need to charge before continuing their flight, a skeleton funnel made of bars is extended from the individual UAV dock to catch and guide the UAV into the charging dock. The UAV Top Launch and Recovery System Cube™ is provided with a door for easy access to service and maintenance of docks and UAVs.



WEIGHT 10.5 MT

DIMENSIONS
6058 X 2438 X 2896 MM

LAUNCH DIRECTION:
HORISONTALT



RHEINMETALL DEFENCE FORCIT DEFENCE DA GROUP

FULL AUTOMATIC MINE SYSTEM

THE CUBE™ MINE LAYING SYSTEM

The modular solution is tailor-made for semi-automatic and fully automatic handling and laying of sea mines from the manufactures RWM Italy and DA-Group (at this moment). The solution is to be used at the stern on a naval platform of opportunity.

The system consists of a minelaying module and one or more storage modules capable of handling all known brands of sea mines.

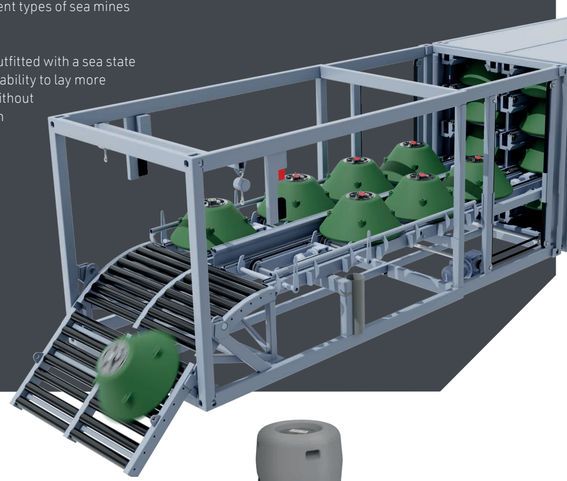
Flexibility

Because of the 20-foot size corresponding with ISO containers, the modules can be locked in place with Twist locks or equivalent.

This makes it possible to use the system on various deck structures, such as helicopter landing decks or stern hangar decks with open access to the stern.
Several configurations using the standard minelaying module and storage module can lay the necessary minefield with various types of sea mines. The solution comes with an interface for sea mine planning. Minelaying Planning, Execution and Analysis System MPEXA-NG from Atlas Elektronik.

Turn a platform into a minelaying capability
It will even be possible to lay different types of sea mines simultaneously.

Vessels with sufficient space and outfitted with a sea state skidding system will obtain the capability to lay more than 400 sea mines continuously without having to pause the operation when changing the storage module.





MINE TYPE: BLOCKER



MINE TYPE: FLOUNDER



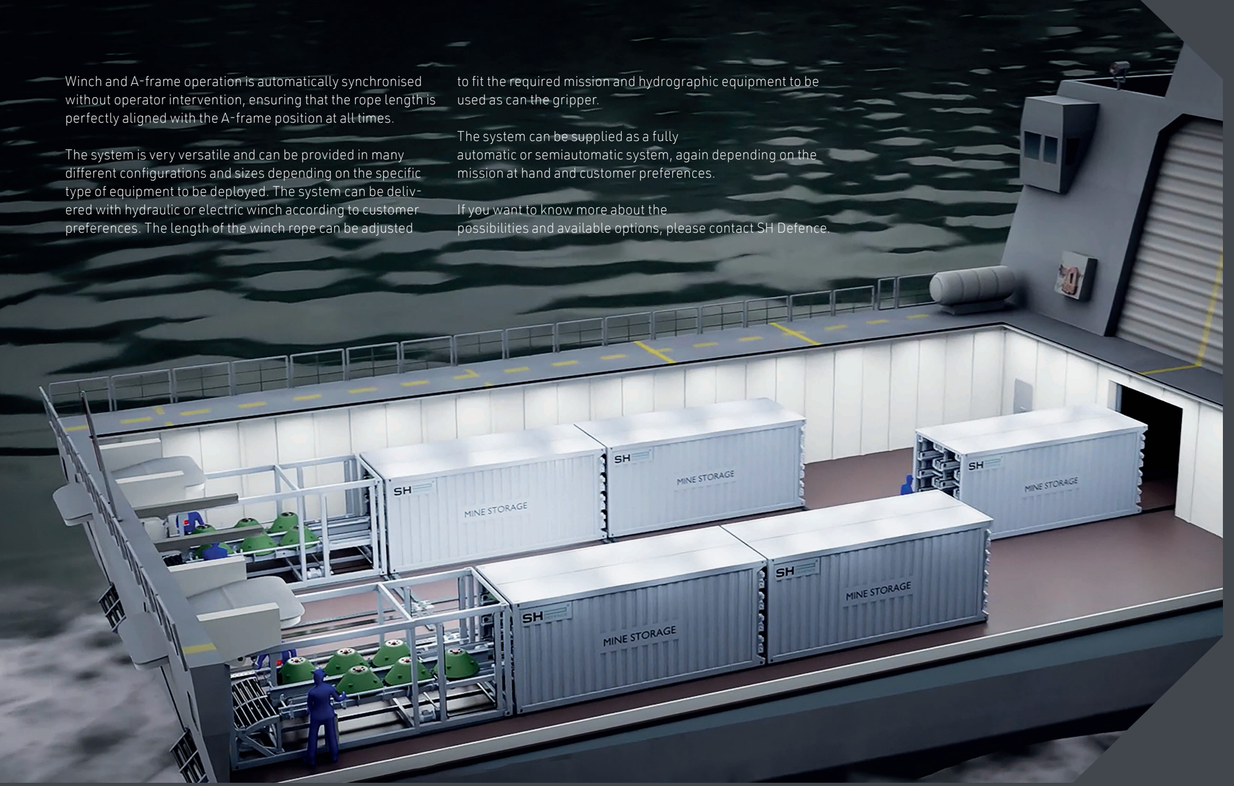
MINE TYPE: FLOUNDER

Winch and A-frame operation is automatically synchronised without operator intervention, ensuring that the rope length is perfectly aligned with the A-frame position at all times.

The system is very versatile and can be provided in many different configurations and sizes depending on the specific type of equipment to be deployed. The system can be delivered with hydraulic or electric winch according to customer preferences. The length of the winch rope can be adjusted to fit the required mission and hydrographic equipment to be used as can the gripper.

The system can be supplied as a fully automatic or semiautomatic system, again depending on the mission at hand and customer preferences.

If you want to know more about the possibilities and available options, please contact SH Defence.



MINE STORAGE: 20'

CAPACITY: Flounder: 48 PCS Blocker/Turso: 20 PCS mines.
WEIGHT: Flounder weight - 19.000 kg (total)
Blocker/Turso weight - 25.000kg (total)
LAUNCH SPEED: 30sec/mine

MINE STORAGE: 10'

CAPACITY: Flounder: 24 PCS Blocker/Turso: 8 PCS mines.
WEIGHT: Flounder weight - 11.500 kg (total)
Blocker/Turso weight - 13.000kg (total)
LAUNCH SPEED: 30sec/mine



MINE STORAGE: 20'



MINE STORAGE: 10'

FULLY AUTONOMOUS
MULTI-CANISTER LAUNCHER

EXTRA FIRE POWER

The Loitering Munition Cube™ module can be configured for different suppliers' Loitering Munition types, quantities and operating systems.

It integrates into a 20ft or 40ft container. The model shown is with Loitering Ammunition from Uvision. The Loitering Munition Cube™ module is a fully autonomous multi-canister launcher, land- or sea-based.

Turning containers into Cube™

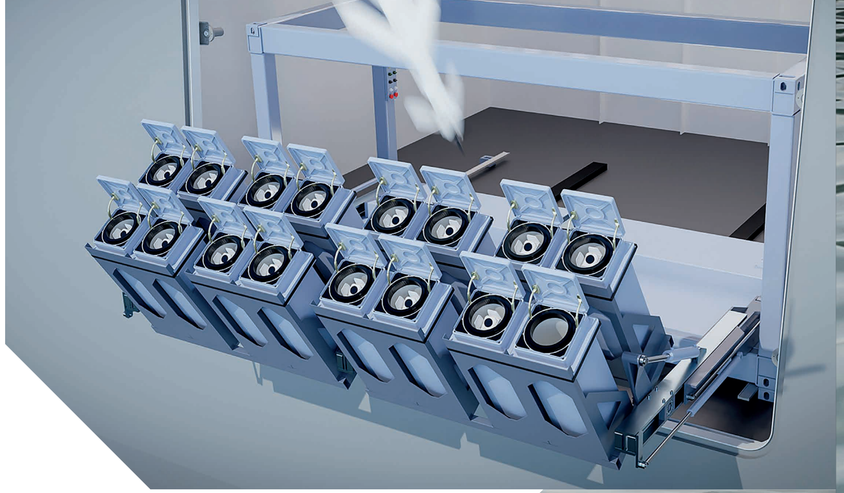
The purpose of the Cube™ 20' Flex Frame is to convert standard 20' shipping containers into Cube™ – Ready high-cube containers that can be loaded and unloaded using the Mobile Cube™ Side Loader or the Mobile Cube™ Stern Loader.

The flex frames can be assembled two and two side-by-side using the included bolts stored in the frame during transport, eliminating the need for additional storage of bolts. Empty flex frames can be stacked up to eight high for easy transport by ship, train or truck.

Type-approved design

The flex frames are designed and type-approved according to DNV GL ST-0378 for offshore and platform lifting appliances. They also conform to ISO 668 and are delivered with a CSC certificate for shipping.

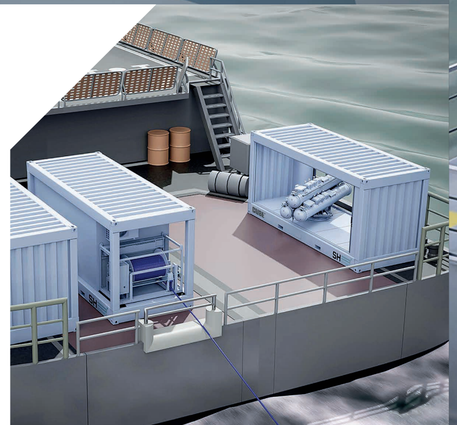
Multi-canister side launch system consisting of a dock for loitering munition on a Cube™ 20ft frame. A hydraulically operated telescopic arm extends the canisters from the vessel's Mission Bay, allowing an almost vertical launch of loitering munition. RBS15 from SAAB is a highly optimized anti-ship missile launched from a replaceable module.

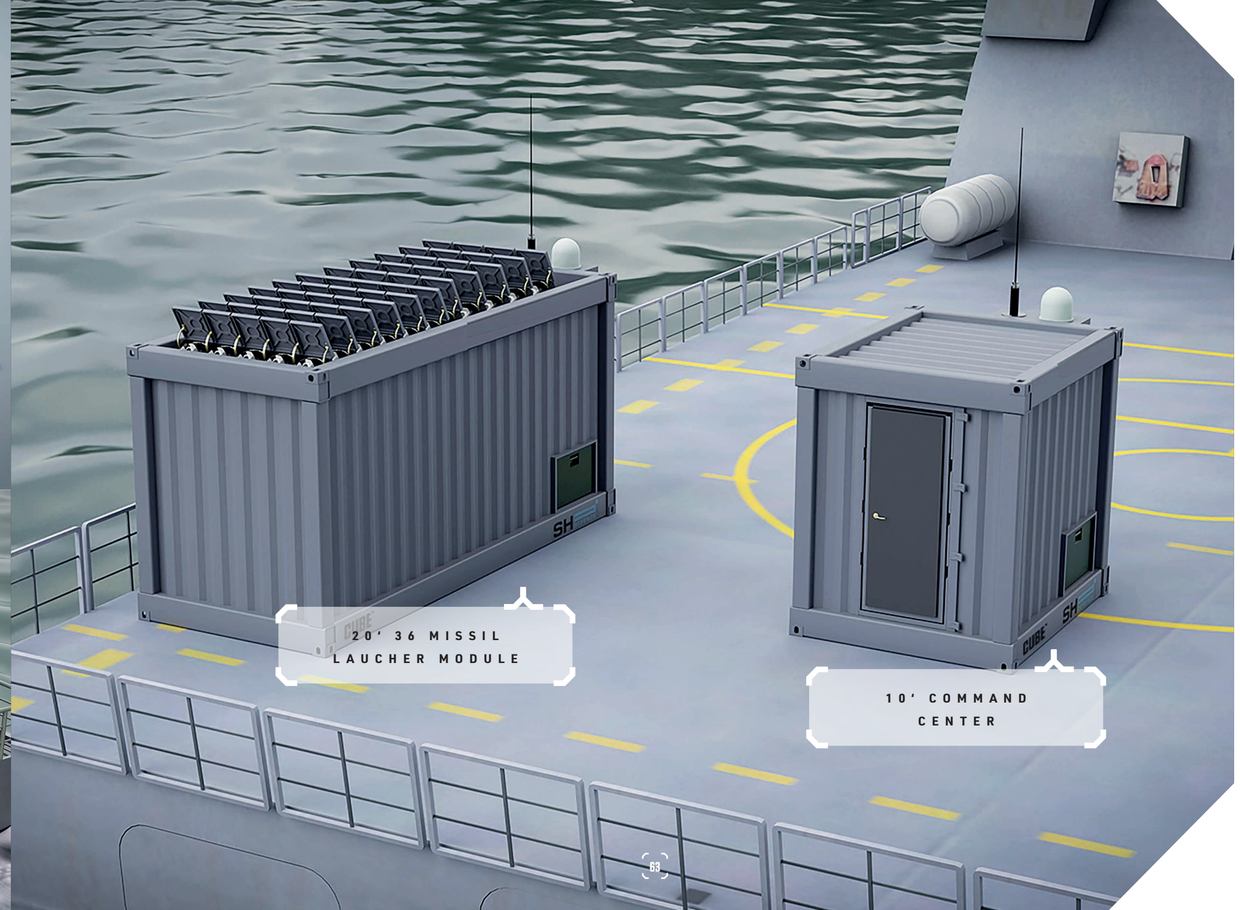


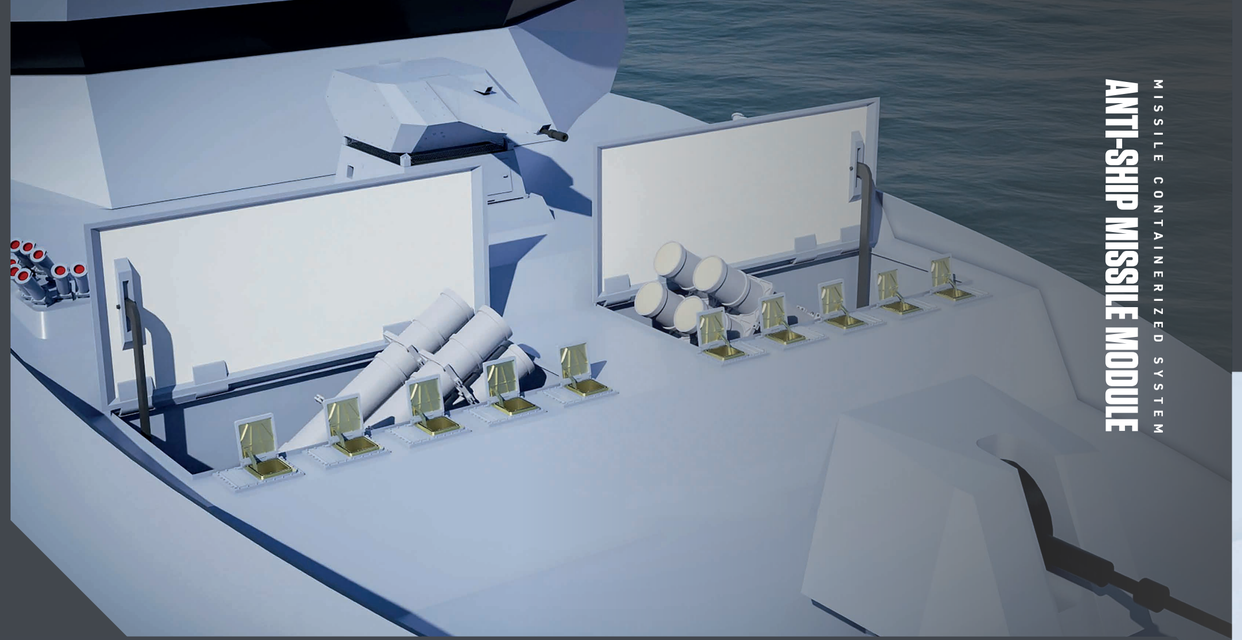
Anti-ship missile module

With a modular approach to missile systems, a fleet can use the "built-for-but-not-with" mindset and thereby integrate a future missile type when needed.

The RBS15 is currently being engineered into an interchangeable Cube™ module solution giving a platform the ultimate flexibility.







MISSILE CONTAINERIZED SYSTEM

ANTI-SHIP MISSILE MODULE

Successful ASW operations typically involved a combination of sensor and weapon technologies. Sophisticated sonar equipment is used for first detecting, then classifying, locating, and tracking a target submarine.

Weapons for attacking submarines include torpedoes and naval mines.

With The Cube™ system, all these technologies can be integrated into one extremely capable, adaptable and easily upgradeable solution.

RBS15 from SAAB is a highly optimized anti-ship missile launched from a replaceable module. With a modular approach to missile systems, a fleet can use the "built-for-but-not-with" mindset and thereby integrate a future missile type when needed. The RBS15 is currently being engineered into an interchangeable Cube™ module solution giving a platform the ultimate flexibility.

Missile systems installed in standard shipping containers offer highly mobile weapons systems. With The Cube™ Multi-Mission Modules, SH Defence takes this technology to the next level, offering a Cubeready plug-and-play container missile system.

The system is installed in a 20' standard container, which can be loaded into any Cube™-ready mission bay and connected to the standard connection cabinet CubedIn™.

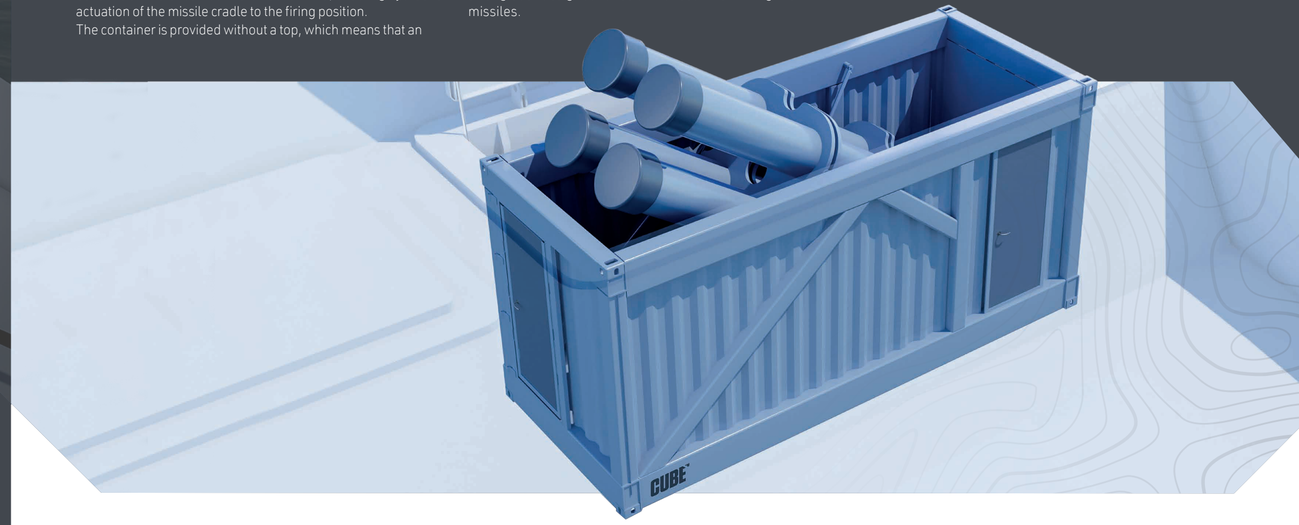
The Container Missile System comes with an interface to the CMS and is provided with hydraulic input, which can be connected to the SH Defence Deck Hatch Cover HPU, enabling hydraulic actuation of the missile cradle to the firing position.
The container is provided without a top, which means that an SH Defence Deck Hatch Cover is required to protect the missile system from weather impact.

The SH Defence Deck Hatch Cover, however, also ensures that it is easy to access and deploy the missile system. See the relevant product sheet for further information on the Deck Hatch Cover or contact SH Defence (see contact details below).

Safety first

The Container Missile System Cube™ is equipped with a strong door designed to resist the recoil from firing the missiles.

The CMS is provided with sensor input from the container to ensure that the door is locked and secured before missiles are launched.





CUBE™ SYSTEM
CUBE™ SOLUTION
CUBE™ READY
CUBE™ CERTIFIED

LEARN MORE SHDEFENCE.COM

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