



SUBMARINE RESCUE SOLUTIONS

www.smp-ltd.com





WHAT WE DO



Located in Preston, Lancashire, United Kingdom, Submarine Manufacturing and Products Ltd (SMP) is a leading manufacturer and supplier of subsea solutions. With our extensive range of products and services, we cater to diverse industries, providing outstanding quality and reliability.

At SMP, we specialise in designing and manufacturing air and mixed gas diving systems, saturation diving systems and equipment, diver launch and recovery systems, containerised dive controls, hyperbaric systems, submarine rescue systems, and all associated equipment. Our comprehensive portfolio ensures that we meet the varied needs of our clients.

Our pride lies in the exceptional quality of our designs and systems. We understand the gravity of our responsibility as our systems directly impact people's lives. That's why we uphold the highest standards of quality, ensuring that every system we manufacture adheres to stringent guidelines. We prioritize the "value of life" in all our in-house manufactured systems, fostering a culture of excellence and safety.

OUR VALUES



D Driven - At SMP we have the drive not only to make high quality systems but also to make the industry safer for the personnel who operate in it. The drive to innovate has made us a globally recognised name for state of the art solutions.

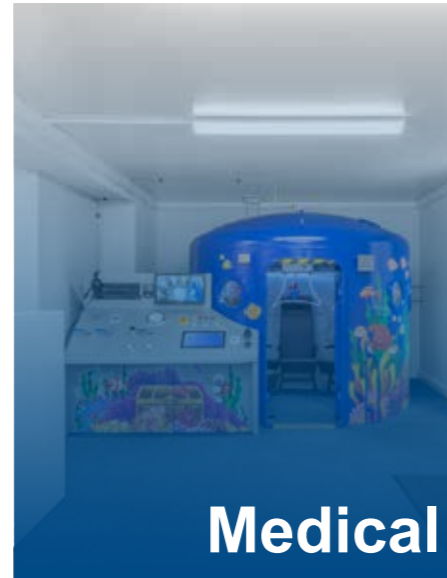
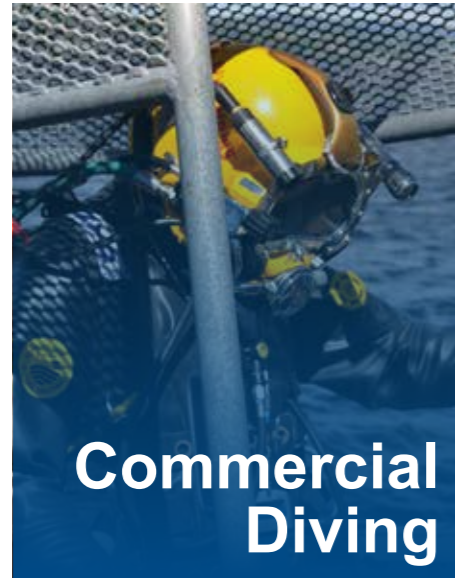
E Efficient - Our experience and knowledge allows us to design and manufacture state of the art solutions much more efficiently and effectively. We are able to transfer the knowledge from a multitude of previous projects to use in new projects to quickly and effectively create solutions to our clients' requirements.

P Professional – With a long established history and a range of past projects, SMP are able to provide professional advice and solutions based on many years of knowledge and experience.

T Thorough – We pride ourselves on our attention to detail. SMP want to create a system that works exactly how the client needs it to whilst also solving all of the problems they face.

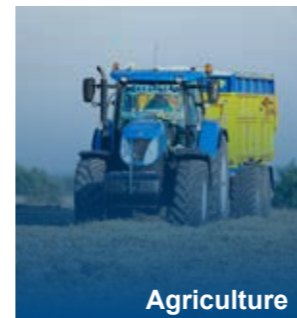
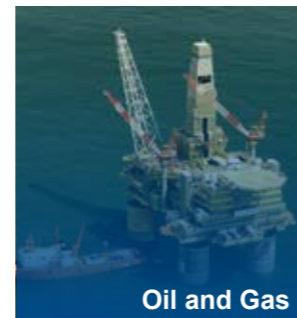
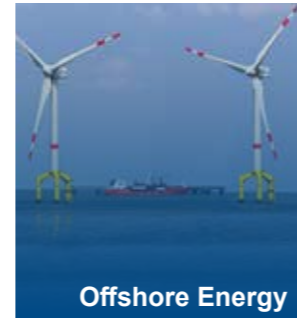
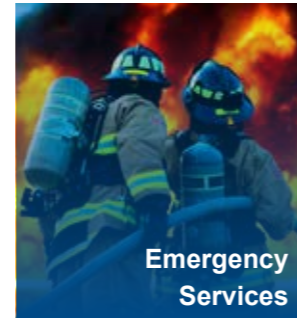
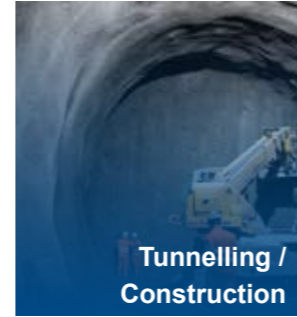
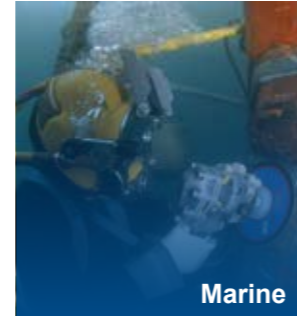
H Hard Working – SMP endeavour to create only the best solutions for our clients. We work closely with the client to understand all of the problems they face and understand what they want to achieve from a system.

OUR MARKETS



SMP have a long established history in the Commercial Diving industry. Since our founding in 1985, we have spread into more markets and industries. We now operate in many global market sectors including Military, Marine, Renewables, Nuclear, Tunnelling and Medical Industries, with clients across the world.

We are always expanding into new markets as we bolster the solutions we manufacture. We thrive on innovating our systems to work in even more unique ways to expand them into more sectors.



PROJECTS ARE MADE BY PEOPLE AND EXPERTISE



People are the primary asset of every business and SMP is no different. We are proud to be a strong and diverse team dedicated to delivering the very best to our clients. SMP focuses on continual development, investing in the latest training, support, tools and techniques to achieve outstanding results on a consistent basis.

Over our long history we have been involved in a range of different projects. These projects have been in a variety of industries and have spanned across the globe.





SUBMARINE RESCUE

In the unfortunate event of a submarine encountering distress or experiencing disabling issues, it is imperative that immediate and critical support becomes available. This support is made possible through a range of cutting-edge systems and methods that have been developed by SMP. Our innovative Submarine Rescue Systems stand at the forefront of subsea engineering, serving as a lifeline to submariners facing emergency situations. These systems encompass a wide array of capabilities, all designed to ensure the safety and well-being of submariners in perilous circumstances.

Our submarine rescue systems include:

- SRV-F Mk 3 Rescue Vehicle
- SEVDS - Submarine Emergency Ventilation and Decompression System
- TUP - Transfer Under Pressure
- ROVs - Remotely Operated Vehicles

SMP's Submarine Rescue Systems encompass a comprehensive suite of technologies and procedures that are absolutely critical to ensuring the safety and survival of submariners in emergency situations. Our commitment to advancing subsea engineering and our dedication to the safety of those who serve in submarines make us a trusted partner in safeguarding lives beneath the waves.

SUBMARINE RESCUE SYSTEMS

SOLUTIONS THAT SAVE LIVES

In the event of a submarine becoming in distress or disabled, urgent critical support needs to be made available through the use of a number of systems and methods. SMP's innovative Submarine Rescue Systems represent the pinnacle of subsea engineering, providing a crucial lifeline to submariners in emergency situations. From surface supporting DISSUB Ventilation, Submariner Free Accent Recovery and Recompression, Transfer Under Pressure Decompression Arrays (TUP) to subsea Remotely Operated Vehicles (ROV), free swimming Submarine Rescue Vehicles (SRV) and Atmospheric Diving (ADS), our specialist equipment represents a critical aspect of submarine operational safety.

For the rescue of the submariners, various escape infrastructures are installed within the submarine so to provide a means of Free Accent or alternatively a capability of Transfer Under Pressure (TUP) via a rescue vehicle. TUP Systems are available complete with Submarine Rescue Vehicles (SRV) for the transfer of occupants from the DISSUB to a ship based decompression complex.

ONE OUT, ALL OUT



SRV-F MK 3 (Submarine Rescue Vehicle)

Introducing the new submarine rescue vehicle, from the team that created LR5 and the DSAR range of rescue vehicles.

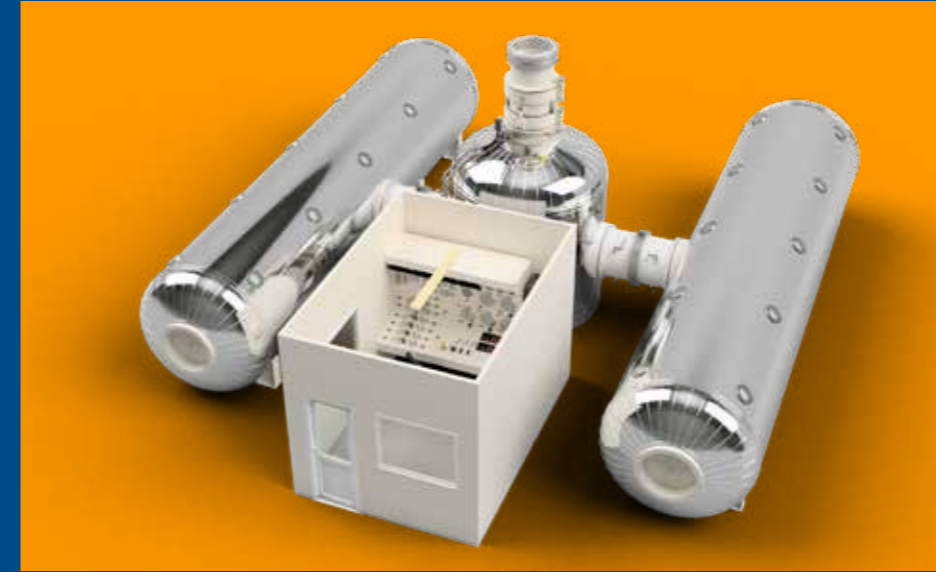
The SRV-F Mk3 is a free swimming manned submersible capable of untethered rescue operations to depths over 500m. This SRV is operated by 3 crew members and has a rescue chamber capacity of 50 submariners per dive.

Connection to the DISSUB is achieved by the NATO ANEP MNEP 85 / 85.1 compliant mating skirt complete with innovative soft seal capable of mating to the DISSUB at angles up to 45 degrees.



Specifications:

- Displacement: 50 Tonne
- Battery: Advance Lithium polymer technology
- Transfer Under Pressures (TUP) Capabilities: @ 50 msw
- Compatible with LARS System: Up to 3.5m significant wave height
- Battery Endurance: ≥ 12 hours (normal operation)
- Equipped with Emergency Surfacing Method: Yes
- Through water speed (own propulsion): 3 knots
- Max towing speed: 7 knots
- Air Transportable: A400M Aircraft



SUBMARINE EMERGENCY VENTILATION AND DECOMPRESSION SYSTEM (SEVDS)

The Submarine Emergency Ventilation and Decompression System (SEVDS) is a surface supplied umbilical linked system with the primary objective of sustaining life on a distressed submarine (DISSUB).

The system will continually monitor and control the atmospheric conditions of the DISSUB through the process of sampling and analysing the contents of the DISSUB to determine the required atmosphere control methods required being exhausting the contents, supply of breathing air from the surface to the DISSUB to stabilise levels of oxygen and carbon dioxide, flushing contaminated atmospheres, managing the internal

pressure of the submarine and maintaining a safer environment for the occupants of the DISSUB. The system can be rapidly deployed to the location of the DISSUB and connected to the submarine by ROV, ADS or diver intervention.



The major components of the SEVDS are:

- Control Container
- Machinery Container
- Umbilical Winch Package
- Subsea Control Module (SCM)
- 2 x 16 Cylinder HP Air Quads

TRANSFER UNDER PRESSURE AND DECOMPRESSION CHAMBER

The TUP Diving System is a mobile and modular system that can be mobilised on a DPII support vessel, platform, rig or construction barge. The system is designed for moon pool or over the side operations. Using Trimix or Nitrox gas mixtures will allow longer duration in-water bottom time at greater depths than using air diving techniques which cause longer in water and decompression practices.

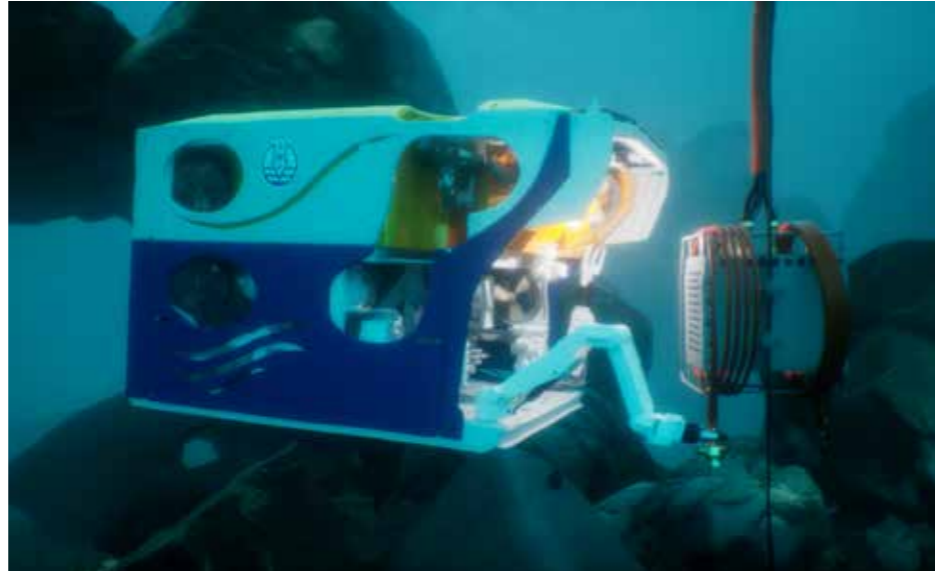
The system is equipped for air diving and mixed gas diving and the clump weight also incorporates a tool basket for the divers. A hyperbaric float away chamber is optional. This compact modular system consists of a 3 man 4.7m³ saturation diving bell,

diver's gas control panels (air/mixed gas), main Bell/Diver control panel, twin lock decompression chamber, single lock decompression chamber (optional), HP and LP compressors, gantry launch and recovery system.

By providing a closed bell system the divers are transferred in a protected environment. Safety is increased by removing the threat of Nitrogen intoxication. This is achieved by making sure at no point is the diver exposed to atmospheric pressure during decompression.

Benefits of our TUP Systems:

- Safe - No surface decompression interval, protected transfer to and from the splash zone
- Proven - An enhanced proven solution that increases workable bottom time
- Future Proof - Upgradeable to Saturation Diving Capability (Future Proof Capability)
- Cost Effective - The system provides cost effectiveness through increased bottom times for the divers
- Mobile - This modular system can be easily transported and mobilised in 24 hours providing fast turnaround for offshore operations on any suitable vessel



ONE OBJECTIVE
RAPID DEPLOYMENT
TO SAVE LIVES

MULTIROV SR

SMP can supply a wide selection of ROVs to suit client specific requirements. In the case of Sub Rescue a work class ROV will be preferred to carry out applicable duties needed for DISSUB location including:

- Site survey
- Debris clearance
- SEVDS Connection
- ELSS Pod Posting
- Site preparation for full manned intervention
- SEVDS assistance
- Assisting the rescue system

Based on well-established CSS ROV technology, the SMP MultiROV SR is configured for ELSS

(Emergency Life Support Stores) pod posting duty, support to inspections, rescue seat debris clearance and ventilation to DISSUB (Distressed Submarine) hook up operations. As standard, the system can accommodate a comprehensive suite of navigation sensors, LED lighting and Cameras with optional 4k video & Gigabit Ethernet capabilities.

The SMP MultiROV SR high performance and compact design makes it the ideal choice for Navy's looking to increase the probability of a successful rescue outcome.

- Specifications:
- Weight in the air: 4500 Kg
 - Payload: 250 - 300 Kg
 - Dimensions: L 3000 x W 1900 x H 2000 cm
 - Hydraulic Propulsion: Kawasaki pump (140cc)
 - Suitable Media: Environ MV32, Tellus 32, Panolin
 - Max Flow / Pressure: 250 L/pm @ 240 Bar
 - Forward speed >3.5 Knots
 - Thrust (Lateral): 1145 kgf
 - Thrust (Vertical): 1174 kgf



\$100M RESCUE SOLUTION FOR INDONESIA NAVY

Submarine Manufacturing and Products Ltd (SMP), a leading UK based manufacturer and supplier of diving and subsea rescue equipment, will provide its new Submarine Rescue System (SRS) to the Indonesian Navy. The SRS will be hosted on a mothership designed by independent design and engineering consultancy, Houlder and delivered by its Indonesian strategic partner, BTI Defence.

The three-year build contract will include the UK design and manufacture of the SRS, centred around SMP's new market-leading SRV-F Mk3 rescue submersible. The custom build of the mothership will take place in region, along with the associated expert training for the Indonesian Navy who will operate the system when it is in service.

The SMP SRV-F Mk3 has been developed by the new SMP management team, consisting of seven of the world's foremost submarine rescue experts. As a hybrid system which is capable of deployment both by air and on its mothership, the SRV-F Mk3 can react to a wide range of emergency scenarios, covering larger operating areas and minimising Time To First Rescue (TTFR).



When deployed by air, the rescue submersible can be towed to and from the distressed submarine's location without needing to be recovered to deck. This key attribute reduces the time, risk and complexity of a rescue mobilisation and also greatly increases the likelihood of a suitable support ship being available on location. This hybrid approach saves critical time for stranded crews facing diminishing life support supplies, and avoids the integration challenges and dependencies associated with flyaway-only or mothership-only rescue systems.

The SRV-F Mk3 can dive to depths of 500m and is unparalleled in its ability to carry up to 50 rescuees at a time. The adoption of a "One Out, All Out" philosophy facilitates the rapid rescue

of an entire crew from a conventional submarine in a single mission, in contrast with other rescue systems which require repeated trips to the distressed submarine.

In addition to the SRV-F Mk3, the new mothership is fitted with a suite of support equipment, including a handling system, an advanced Transfer Under Pressure (TUP) system and a dedicated Decompression Chamber, enabling the immediate medical attention and treatment of rescued personnel.

The SRV-F Mk 3 can be transported via aircraft, allowing more of a rapid response to a situation.

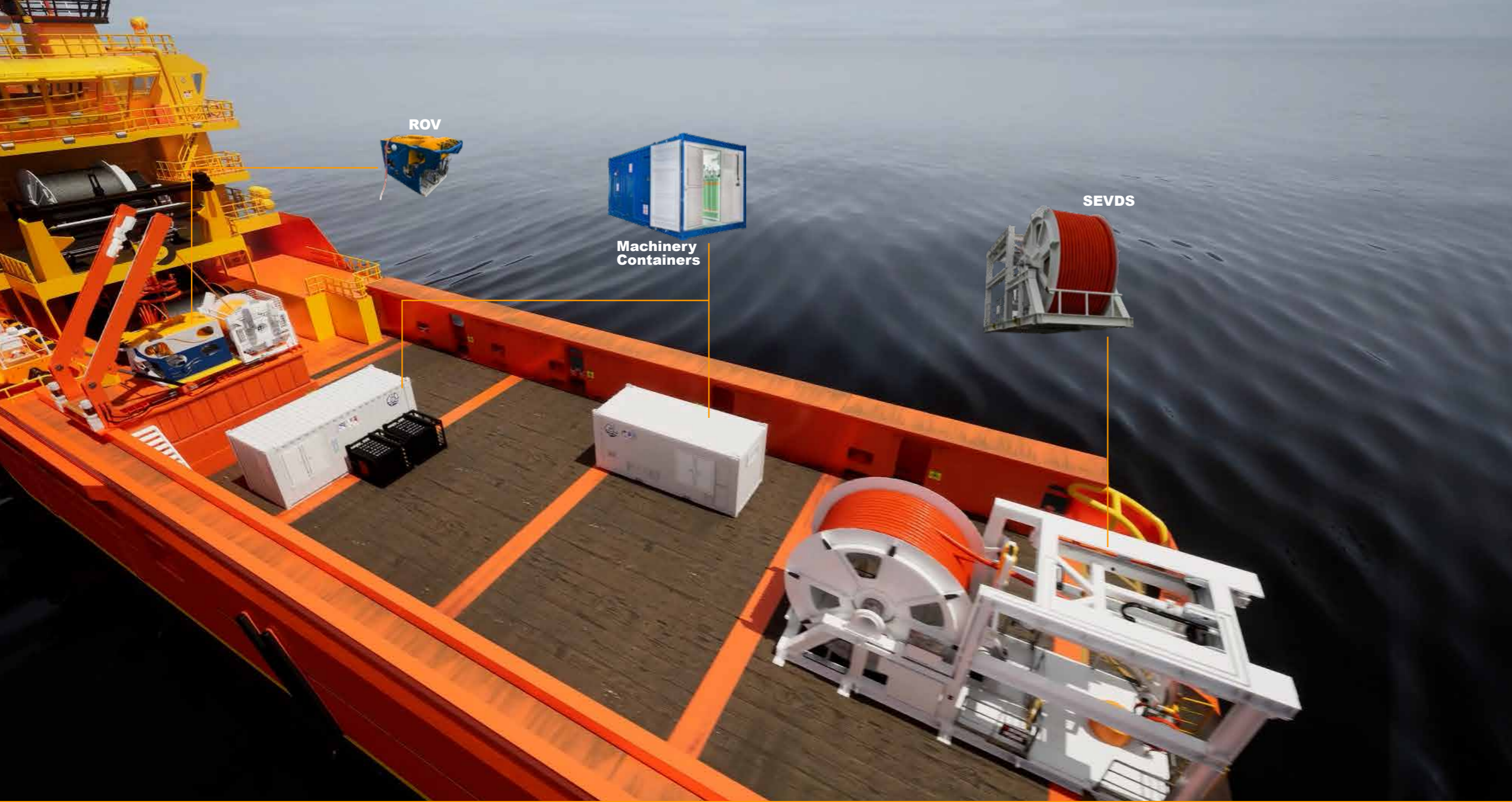


SUPPORT VESSEL

The support vessel is fitted with the supporting systems to aid the primary vessel in a submarine rescue scenario.

These supporting systems include:

- SEVDS
- Machinery Containers
- ROV
- Gas Storage Cylinders



MACHINERY CONTAINERS

Machinery Containers are fitted with:

- Low Pressure Compressors
- High Pressure Compressors
- Video Monitoring System
- Audio Communication System
- Air Control Panel
- Gas Storage Cylinders
- Storage Units



The equipment is fitted into a modified 20 ft ISO container. These containers are insulated, fitted with heating/air conditioning, and are fully wired up with electricity.



For over 37 years, SMP has offered outstanding customer service and high quality solutions. For this we are indebted to the skills and dedication of our workforce. Our team is made up of industry experts, experienced design engineers, as well as a workshop full of qualified engineers, electricians and fitters. Without them we would not be in the position we are today.

Due to industry and client demands, SMP has developed its operations to suit the marketplace offering complete system design and manufacture. No matter how difficult the challenge or how long the process, we work very closely with the client to enable them to achieve their goals. Many of our systems are built and configured to be bespoke to the requirements of the customer.

We deliver our results through continued innovation and communication. Our experience and resources cover a variety of industries that we operate in today. We would like to emphasise that we offer a complete service that we feel is special within our marketplace.

SMP are a globally recognised company working with clients across the globe from a variety of sectors.

ACCREDITATIONS

SMP has achieved full accreditations to BS EN 9001:2015, BS EN 13485:2016 and BS EN ISO 14001:2015 as well as CE94777 to Directive 93/42/EEC for Quality Assurance and Environmental Management. In addition, we have earned numerous awards for exports and manufacturing.

Our equipment is IMCA compliant and is routinely tested to meet the requirements of Lloyds, DNV and The American Bureau of Shipping standards.



PARTNER OF CHOICE



THE WORLD'S FIVE LEADING SUBMARINE RESCUE SPECIALISTS

110 YEARS OF COMBINED SUBMARINE RESCUE EXPERIENCE



Alan Green is a 20 year Submarine Rescue veteran, is an experienced commercial and operations specialist having set up and run four of the worlds leading submarine rescue service contracts.



Ben Potter is a 15 year Submarine Rescue veteran, and a Naval Architect by qualification is now a world renowned Technical Authority on submarine rescue systems and MOSHIPS.



Ben Sharples is a 25 year Submarine Rescue veteran, and engineer by qualification. Ben is the Managing Director of Submarine Manufacturing and Products Ltd.



Gregor McPherson is a 35 year Submarine Rescue veteran, and is an expert in the design manufacture and commissioning of manned submersible launch and recovery systems.



Robbie Gorman is a 15 year Submarine Rescue veteran, Robbie is a project management and supply chain specialist who has supported the builds of over 8 of worlds free-swimming rescue vehicles.

INVOLVED WITH EVERY SUBMARINE RESCUE SYSTEM BUILT IN THE LAST 25 YEARS

	Remora	US SRDS	DSAR 1 (LR-5)	DSAR 5	DSAR 6	URF Mk2	DSAR 9	DSAR 10	DSAR 11 (ASR 2)	DSAR 7	DSAR 8	LR 11
In Service												
Country	Australia	USA	Australia	South Korea	Singapore	Sweden	India	India	South Korea	China	China	Vietnam
Depth (MSW)	500	610	400	500	500	410	650	650	500	500	500	600
Rescuees (Pers.)	6	16	16	16	17	35	14	14	17	16	16	17
Ben Sharples Managing Director			Complete	Complete	Complete	Complete	Complete	Complete	Complete	Partial		
Robbie Gorman Project Director			Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Partial	Partial
Alan Green Director			Complete	Complete	Complete	Complete	Complete	Partial				
Ben Potter Technical Director			Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
Gregor McPherson Technical Director	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete		Complete	Complete	
Phil Connolly Chairman					Complete							Complete

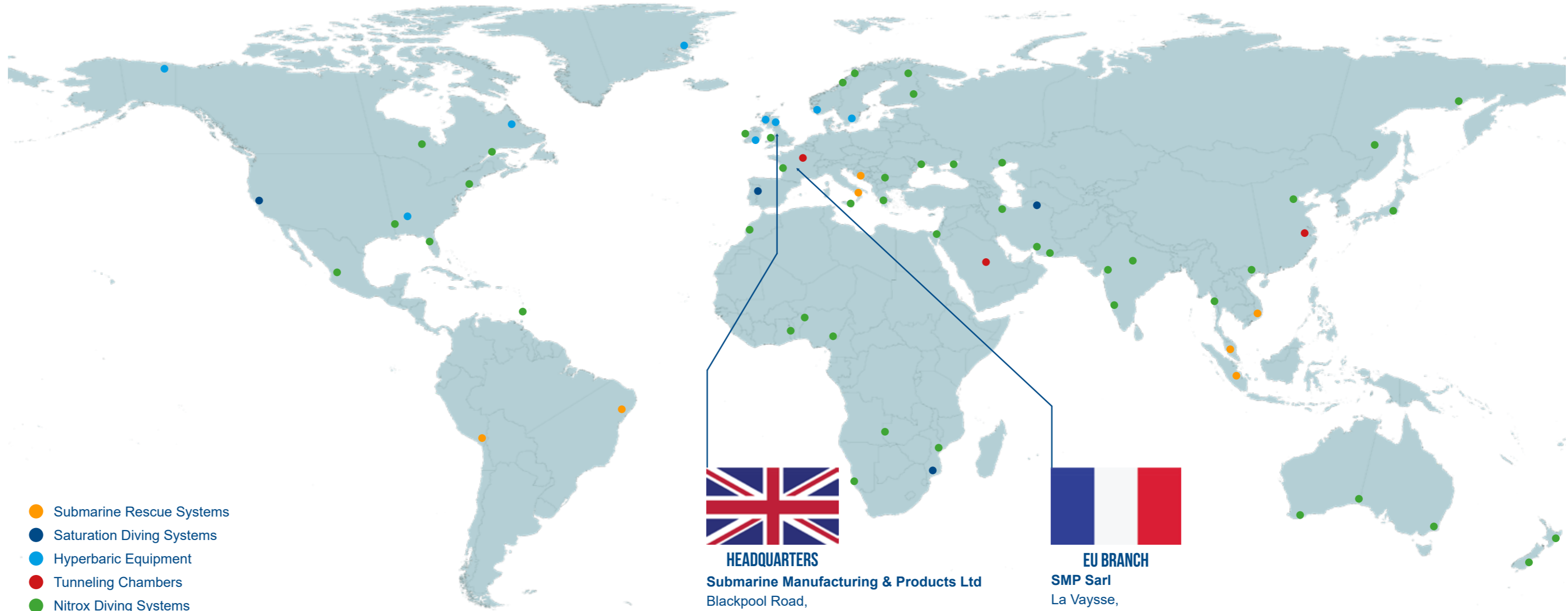
Complete Involvement
 Partial Involvement

Members of the SMP team have also operated and maintained NSRS, and produced the concept design for LR7



WORLDWIDE SUPPLIER

“
A GLOBALLY RECOGNISED
NAME IN THE SUBSEA
INDUSTRY



- Submarine Rescue Systems
- Saturation Diving Systems
- Hyperbaric Equipment
- Tunneling Chambers
- Nitrox Diving Systems



HEADQUARTERS

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