

S. B. Submarine Systems

2023 Corporate Presentation



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CORPORATE OVERVIEW



Corporate Overview

Who we are

S. B. Submarine Systems Co., Ltd. (SBSS) is Asia's leading provider of submarine cable installation and maintenance solutions.

Serving both fibre optic and power cable sectors, we are experts in telecommunications, power utility, oil and gas and renewables markets.

Established in 1995 at the maritime center of Shanghai, we have a long legacy of transforming global connectivity in this ever-changing era.



Corporate Overview

Highlights



Track Record

Over 65,000km submarine cable installed and over 20,000km buried



Cable Maintenance

Provided submarine cable maintenance services to the Yokohama Zone since 1997



O&G

Stepped into the O&G market in 2003 and completed 30 projects in this sector across the globe



Project Footprint

Engaged in over 130 subsea projects across the telecoms, power utility, O&G and renewables sectors



Cable Burial

We buried submarine power cable to 6m below the seafloor on the Bangladesh Sandwip project



Talents

SBSS has an onshore and offshore team of more than 140 personnel. Our Project Managers have a combined experience of more than 100 years in the submarine cable industry



Deepwater Experience

Laid cable to a water depth of 9,720m within the Mariana trench in 2017 and 9,607m within the Izu Ogasawara trench in 2020



High Voltage

We have been contracted by China Southern Grid 5 times over the past 10 years to conduct burial depth verification of their 500kV high-voltage power cable systems

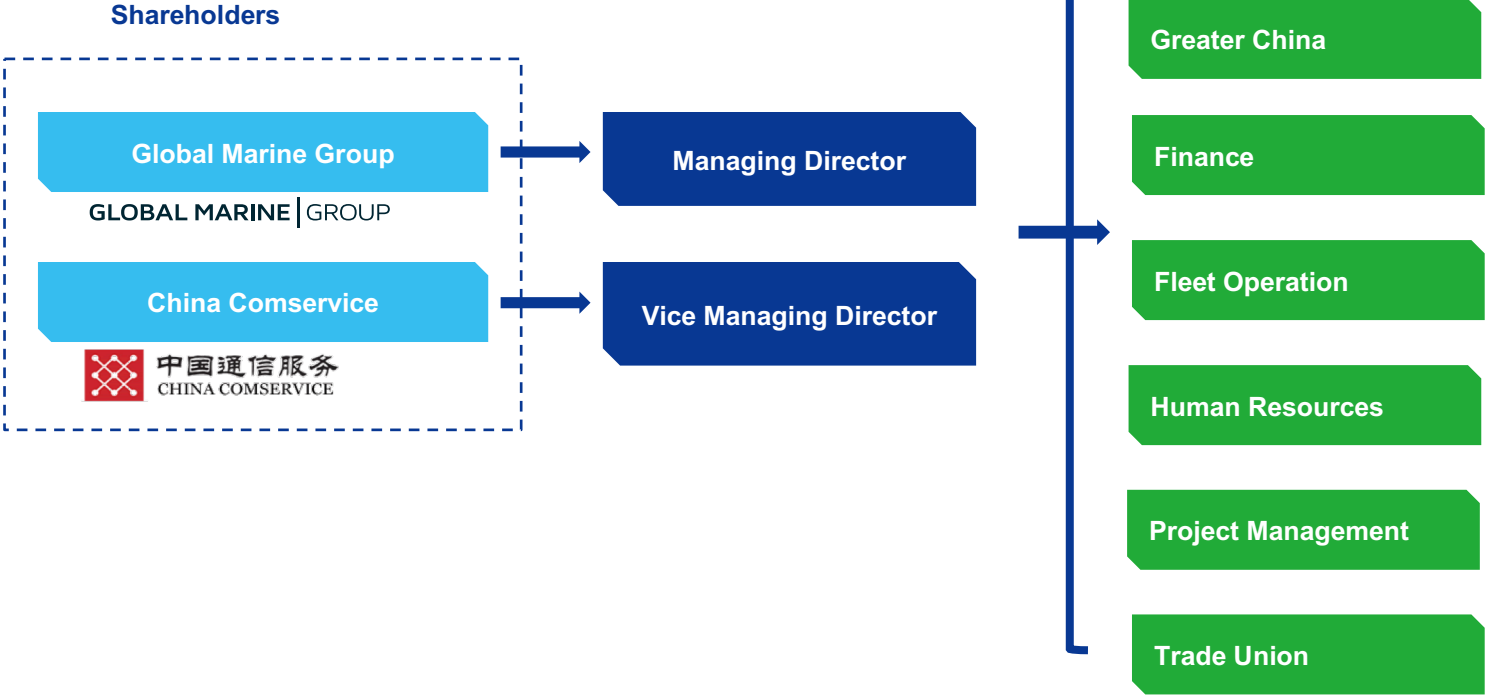


Offshore Wind

Delivered over 12 cable installation and burial projects and installed over 300km 220kV export cable in offshore wind sector

Corporate Overview

Organizational Structure



Corporate Overview

Business Sectors

Telecommunications

Asia's leading submarine telecoms cable installation and maintenance service provider having installed over 65,000km since 1995 and having over 26 years maintenance experience in Yokohama Zone.

Our fibre optic cable installation footprint covers 38 international submarine communication systems.



Power Utility

SBSS is highly experienced in power cable installation and burial with over 50 projects delivered since 2003.

We have a proven track record in creating effective solutions tailored to our customers' needs. This includes the bundled surface lay of three different size cables on the Jindo-Jeju Interconnector.



Oil and Gas

SBSS stepped into the O&G market in 2003 with the first project delivered in Dong Fang 1-1 field in the South China Sea, since then we have completed 30 projects in the sector across the globe, including BP Tangguh Extension in Indonesia, Shell Cili-Padi in Malaysia, Qatar Barzan in the Middle East and various offshore O&G fields in China.



Renewables

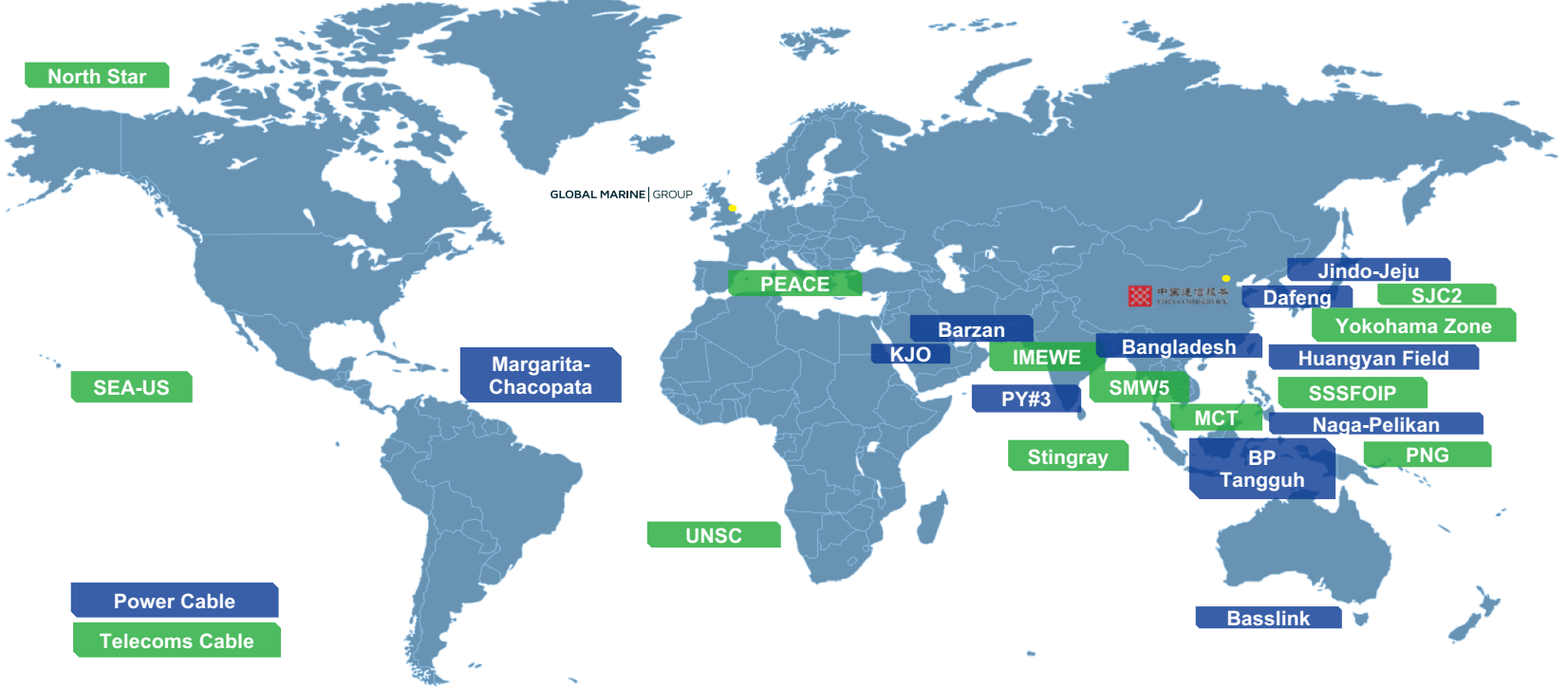
We officially moved into the offshore wind sector in 2017 and have delivered over 12 cable installation and burial projects. In early 2020, SBSS employed our Predator ROV on the Dongtai windfarm to conduct subsea inspection works, which is the first time that an ROV has been utilized in the Chinese offshore wind O&M sector.



Corporate Overview

Global Footprint

We have a global reach and have completed over 130 submarine cable projects across APAC, Middle East, Europe, US and Latin America.




Corporate Overview

Customer Base

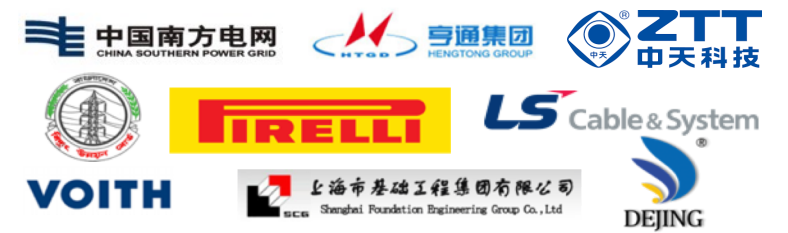
Telecoms



Oil and Gas



Power Utility and Renewables



Corporate Overview

Corporate Timeline

Established in 1995 with offices in Shanghai

JV of Directorate General of Telecommunications in China and Telecom and Great Eastern Telecoms in the UK

1995

1996

Delivered our two initial international telecoms projects: APCN and Jakarta-Surabaya

Entered Yokohama Zone Maintenance Agreement

1997

1998

SBSS's purpose-built depot, ideally located next to Wujing Port on the Huangpu River, was approved by China Customs



British shareholder is replaced by Global Crossing Ltd

Completed its first USA project: 2,457km North Star cable system between Alaska and Mainland US

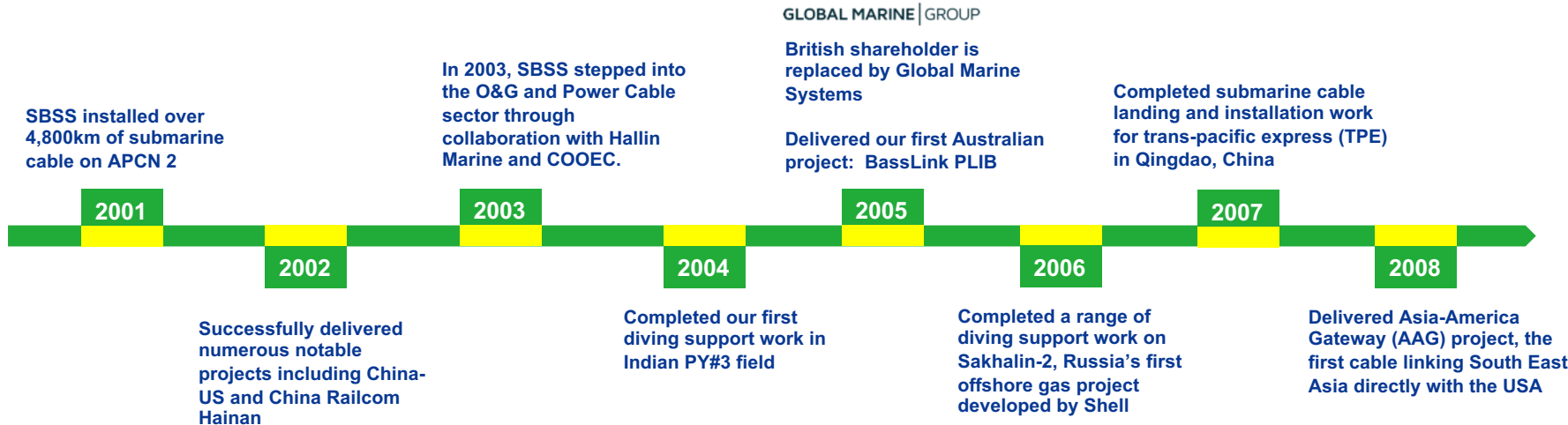
1999

2000

The company strengthened its asset capabilities through the long-term charter of CS Fu Hai, the purchase of barge Fu Xing and acquisition of ST202 ROV and Hi-Plough

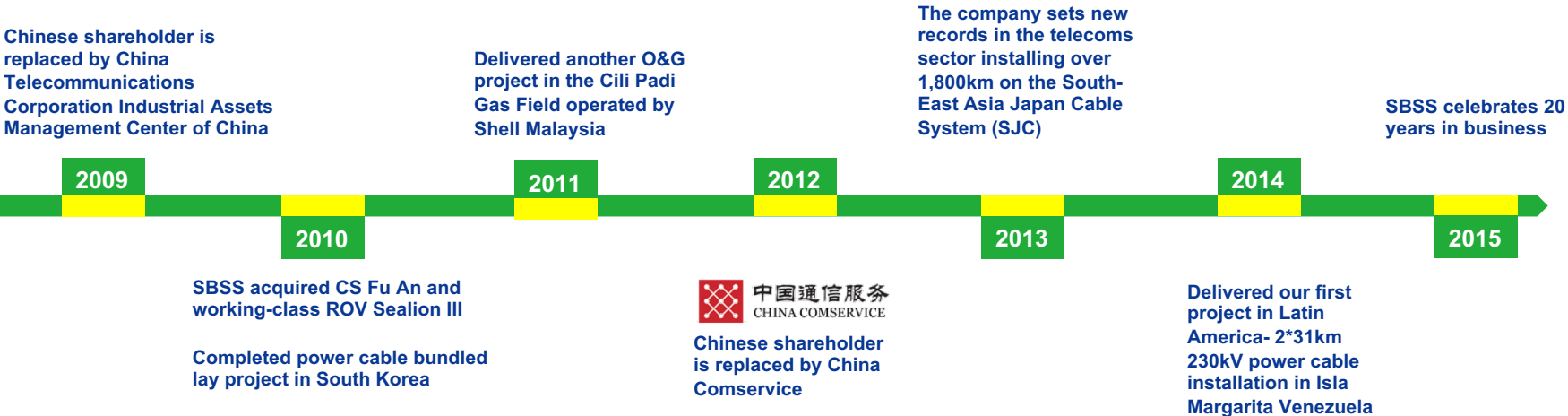
Corporate Overview

Corporate Timeline



Corporate Overview

Corporate Timeline



Chinese shareholder is replaced by China Telecommunications Corporation Industrial Assets Management Center of China

2009

Delivered another O&G project in the Cili Padi Gas Field operated by Shell Malaysia

2011

The company sets new records in the telecoms sector installing over 1,800km on the South-East Asia Japan Cable System (SJC)

2012

SBSS celebrates 20 years in business

2013

SBSS acquired CS Fu An and working-class ROV Sealion III

Completed power cable bundled lay project in South Korea

2010



Chinese shareholder is replaced by China Comservice

Delivered our first project in Latin America- 2*31km 230kV power cable installation in Isla Margarita Venezuela

2014

2015

Corporate Overview

Corporate Timeline

SBSS's fleet actively worked on multiple key telecoms submarine cable systems including SEA-ME-WE 5 (SMW5), Malaysia, Cambodia and Thailand (MCT) and SEA-US

Completed its first turnkey power cable project in Bangladesh

HP-1500 plough is delivered to SBSS and mobilized on CS Fu Hai



SBSS celebrates 25 years in business





SBSS welcomes new cable ship cs Fu Tai to its fleet. Delivered UNSC and DSCPA2.



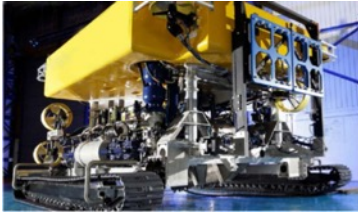
ASSET DATASHEET



Asset Datasheet

	<p>FU TAI</p> <p>cs Fu Tai is a DP-2 cable ship that is now working in the Asian submarine cable installation and cable maintenance markets. The vessel has a cable carrying capacity of 3,000 tonnes in two main cable tanks.</p> <p>cs Fu Tai is equipped with a high powered Q1000 trenching ROV.</p>	<p>TRACK RECORD INCLUDES</p> <p>YZ SCIP Phase 2</p>
	<p>CS FU HAI</p> <p>High bollard pull, DP-2 vessel, specializing in submarine cable installation and maintenance. Equipped with both Sealion I trenching ROV and Hi-Plough onboard.</p>	<p>TRACK RECORD INCLUDES</p> <p>Power Cable Wando-Jinsan Interconnector Hwawon-Anjwa Interconnector Fibre Optic Cable SCIP SJC2 SEA-US</p>
	<p>BOLD MAVERICK</p> <p>High bollard pull, DP-2 vessel, specializing in submarine cable installation and maintenance. Equipped with both Sealion I trenching ROV and Hi-Plough onboard.</p>	<p>TRACK RECORD INCLUDES</p> <p>Power Cable Jindo-Jeju Bundled Lay BP Tangguh LNG Expansion Fibre Optic Cable PEACE Med Malaysia-Cambodia-Thailand SEA-ME-WE 5</p>
	<p>FU YONG 6</p> <p>5,500t cable lay barge with grounding capability. Suitable for shallow-mid water power cable installation and maintenance works. Equipped with Longli jetting sledge.</p>	<p>TRACK RECORD INCLUDES</p> <p>Power Cable Bo Zhong A Changle C Changle A Guoneng Dafeng</p>

Asset Datasheet



Q1000

The respected QT1000 series ROV can operate in both free swimming and tracked mode.
Total power: 1,000hp
Product diameter: 0.5m(max)



SEALION I

The respected ST200 series ROV can operate in both free swimming and tracked mode.

Depth rated: Up to 2,500m
Burial depth: Up to 1.5m



SEALION III

Sealion III is a purpose-designed 600 horse power cable trenching ROV.

Depth rated: Up to 2,500m
Burial depth: Up to 3.0m



PREDATOR

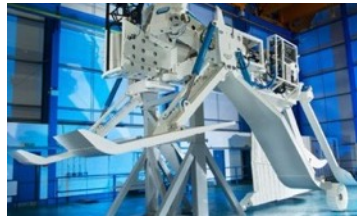
300m depth-rated observation class ROV. Developed to meet the demanding markets for rugged and reliable underwater viewing systems.



HI-PLOUGH

Equipped with 3 share configurations. 2.2m passive share, 3m passive share and 3.25m injector share.

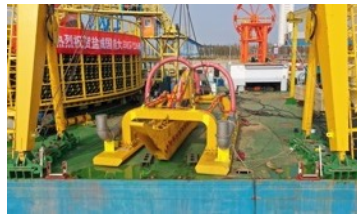
Depth rated: Up to 2,000m
Burial depth: Up to 3.25m



HP-1500

Equipped with 2 share configurations, 2.2m standard jetting share and 3.3m extension boot jetting share.

Depth rated: Up to 1,500m
Burial depth: Up to 3.3m



LONGLI SLEDGE

This jetting sledge is mobilized on the cable lay barge Fu Yong 6 and is capable of achieving a depth of up to 3.3m cable burial.

Asset Datasheet



WUJING DEPOT

SBSS owns and manages the only bonded commercial submarine cable depot in mainland China.

Located with easy access to the East China Sea, the Wujing depot has a telecoms cable storage capacity of 3,841m³. Telecoms cable is stored within 20 cable tanks, 18 of which are custom-bonded. On-site warehouses are available for the safe and covered storage of system plant such as repeaters and branching units.

Wujing offers SBSS's customers an ideal location to home their valuable spare system cable and plant.



JOINTING AND ROV TRAINING SCHOOL

The cable jointing school is jointly invested in by SBSS and Global Marine Group, a founding member of the Universal Jointing Consortium. The school is able to provide a full range of training in cable jointing technology including the Universal Joint (UJ), Universal Quick Joint (UQJ) and Universal Coupling (UC).

Our commercial ROV pilot training courses include ROV professional knowledge, practical experience, simulator pilot training and small-scale ROV pilot training in the facility's experimental pool.

TELECOMMUNICATIONS SERVICES



Telecommunications Services



Cable Route
Services



Equipment Hire
&
Personnel Provision



Joining



Test Facility



Cable
Storage



Cable
Installation



Cable
Maintenance



Cable
Protection



PRM



PGU

Depots

Telecommunications Services

Our Expertise



Pre-project Planning & Cable Installation

65,000km unprecedented track record

- Permitting and route survey
- Pre-lay grapnel run (PLGR) and surface lay
- Shore-end landing and beach works
- Pre-laid shore end (PLSE)
- Cable and pipeline crossing
- Cable testing



Inspection and Protection

Cutting-edge assets deliver precision

- Cable ploughing
- Trenching and post-lay inspection and burial (PLIB)
- Customized protection solution



Maintenance and Repair

Over 26 years' maintenance commitment in Yokohama Zone

- Yokohama Zone maintenance authority since 1997
- Shallow water repairs
- Cable recovery and testing



Jointing and Cable storage

Dedicated jointing and storage facility

- Experienced Universal Joint (UJ) and Universal Quick Joint (UQJ) team and training school
- Wujing cable depot with a total storage capacity of 3,841m³

Telecommunications Services

Our Competitiveness



Integrated Services

Our installation expertise, combined with other supplementary services such as cable route survey, permitting, cable storage, project management, route clearance, trenching, jointing and cable testing, positions us as the ideal **Partner of Choice** for integrated installation and burial services.



State-of-the-art Assets

Our specialized submarine cable fleet is equipped with a range of cable installation, recovery, repair, trenching and burial equipment, allowing us the ability to provide versatile solutions from **shallow water to deep sea** and in most seabed conditions.



Chinese Expertise

Strategically located in Shanghai, China and as a Joint Venture of **China Comservice**, our know-how in Chinese waters, from geographical understanding to securing necessary installation and repair permits, is unparalleled.



Synergy with GMG

Together with our parent company Global Marine Group, we support the maintenance of nearly **400,000km** of globally installed telecoms cable.

Telecommunications Services

Telecoms Highlights

38

Our fibre optic cable installation footprint covers 38 international submarine communication systems.

1997

We have provided submarine cable maintenance services to the Yokohama Zone since 1997.

6620

In 2017, SBSS installed 6,620km of submarine fibre optic cable for the SEA-US system, which remains as the longest cable installation project in the company's history.

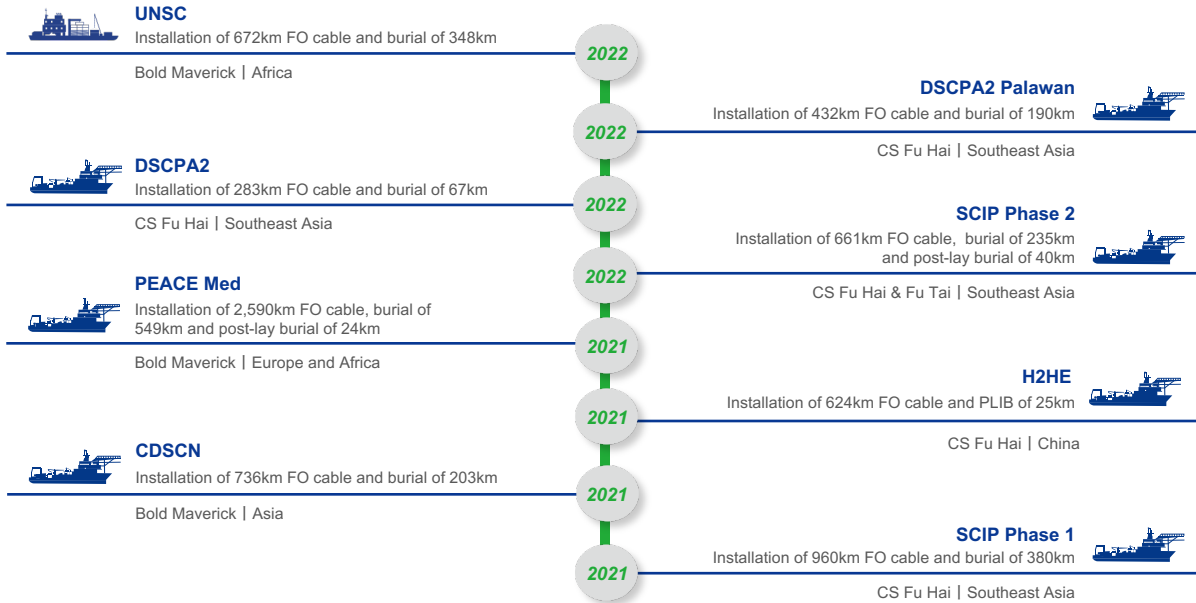
9720

We have laid cable to a water depth of 9,720m within the Mariana trench for the SEA-US submarine system in 2017 and 9,607m within the Izu Ogasawara trench for the BtoBE S2 in 2020.

Telecommunications Services



Track Record



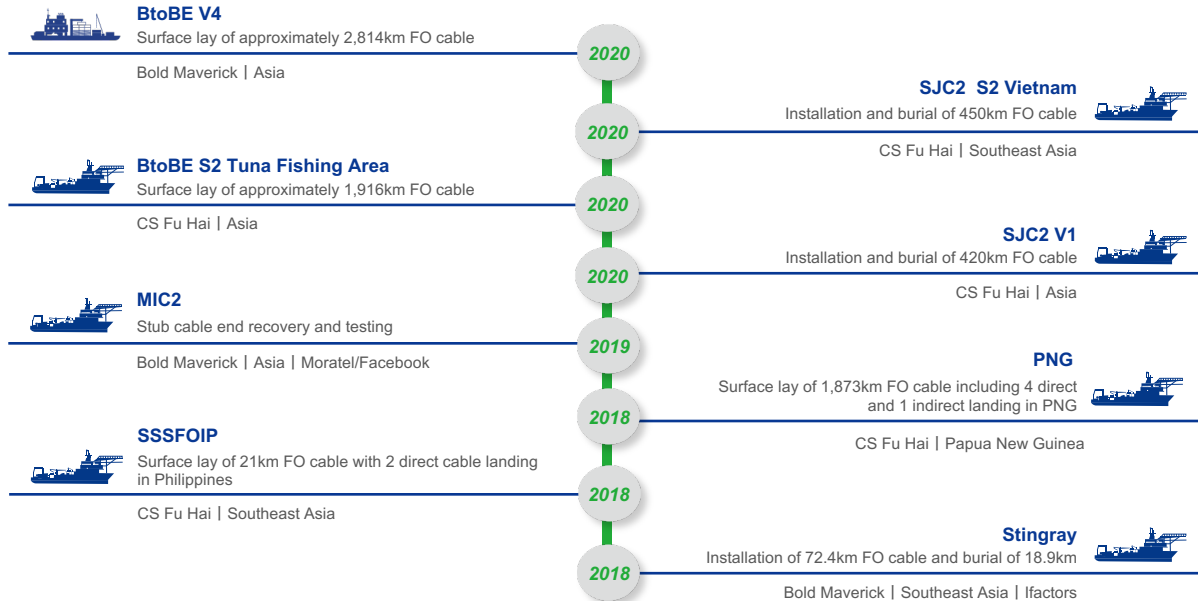
SCIP2 (2022)



PEACE (2021)

Telecommunications Services

Track Record













BtoBe (2020)

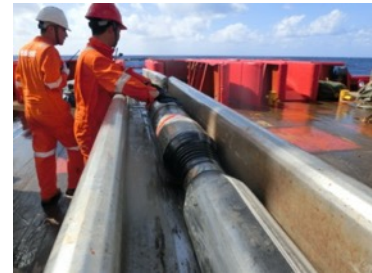


PNG (2018)

Telecommunications Services

Track Record

 <p>Palapa Ring West Installation of 330km and burial of approximately 260km FO cable, 2*2km PLIB on pipeline crossing CS Fu Hai China IOA</p>	<p>2018</p>	<p>IGG Installation of 2,333km FO cable including 1,601km of plough burial CS Fu Hai Southeast Asia</p> 
 <p>MCT 1,284km FO cable consisting of three segments, connected by a branching unit Bold Maverick Southeast Asia</p>	<p>2017</p>	<p>SEA-US Surface lay of 6,620km FO cable from Guam to Hawaii CS Fu Hai North America</p> 
 <p>SEA-ME-WE 5 Eastern Portion Installation of 1,012km FO cable and burial of 970km from Singapore to FSP CS Fu Hai Southeast Asia</p>	<p>2017</p>	<p>SEA-ME-WE 5 Western Portion Surface lay of 3,572km FO cable from Galle, Sri Lanka to FSP Bold Maverick Indian Ocean</p> 
 <p>SMPCS Installation of 1,600km FO cable and burial of 1,238km CS Fu Hai Southeast Asia</p>	<p>2016</p>	<p>APG S4&S6 Installation and burial of 87km FO cable in S4, installation of 497km FO cable and burial of 244km in S6 CS Fu Hai China</p> 
 <p>TSE-1 Installation of 206km FO cable including 203km of plough burial CS Fu Hai Asia</p>	<p>2015</p>	<p>APG S3&S4 Installation of approximately 1,800km FO cable and burial of 1,686km, PLSE in S3&S4 CS Fu Hai & VOO Asia</p> 
	<p>2014</p>	
	<p>2013</p>	



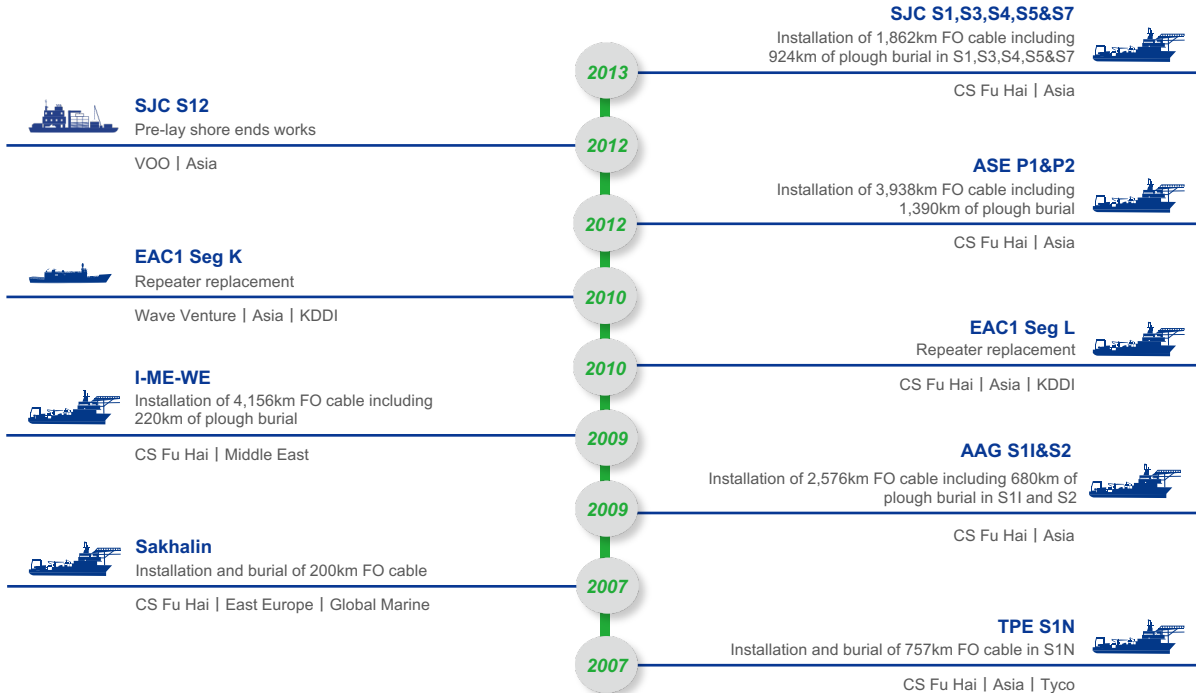
SEA-US (2017)



MCT (2017)

Telecommunications Services

Track Record



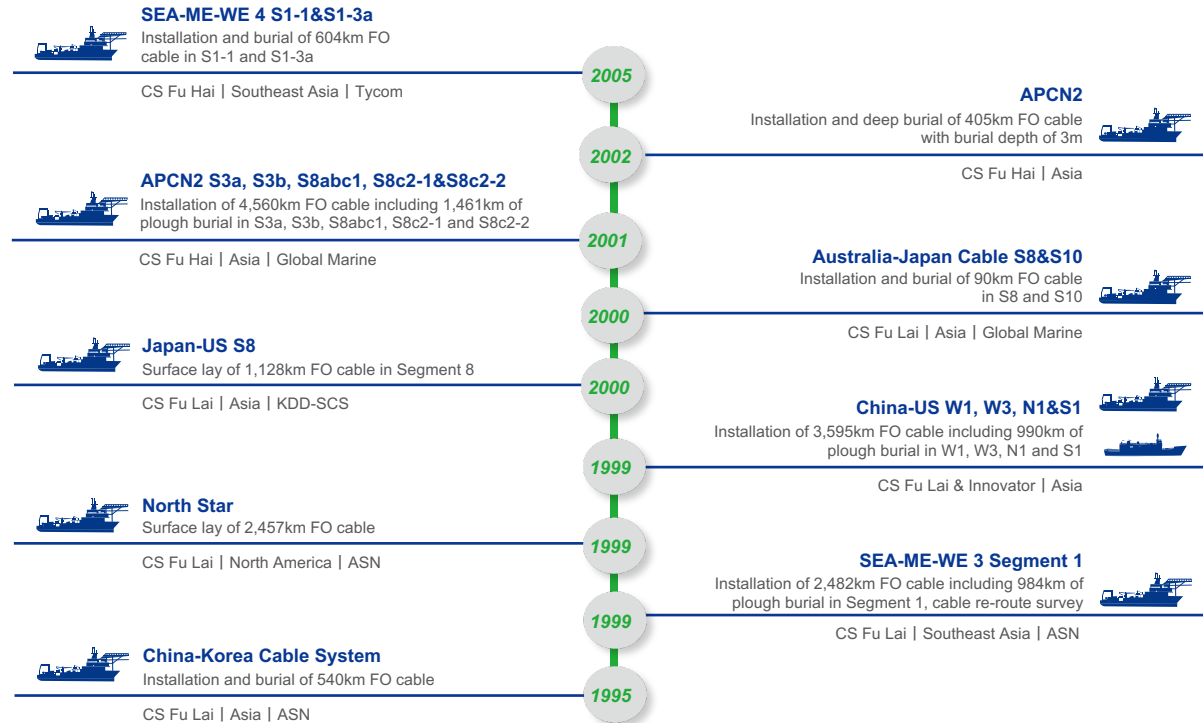
SJC (2013)



I-ME-WE (2009)

Telecommunications Services

Track Record



APCN2 (2001)



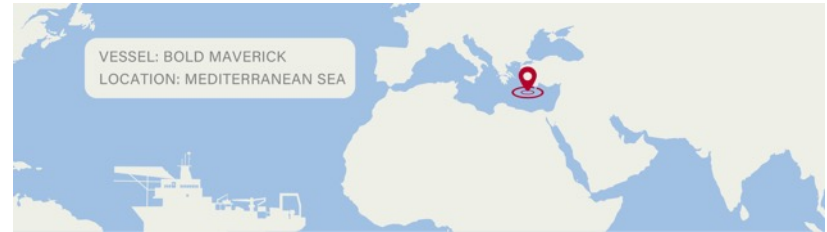
China-Korea (1995)

Telecommunications Services

Case Studies

Pakistan & East Africa Connecting Europe (PEACE) Mediterranean Sea

Customer : HMN
Vessel : Bold Maverick
Location : Mediterranean sea
Activity : Installation of 2,590km FO cable, burial of 549km
Year : 2021



Overview

PEACE system is initially a 15,000 km submarine cable from Pakistan to France, extended from Pakistan to Singapore for an additional 6,500km, with main trunk landing in Singapore, Pakistan, Kenya, Egypt and France and branches to the Maldives, Malta and Cyprus.

In 2021, SBSS was contracted by HMN to install over 2,500km FO cable for the Mediterranean section.

Scope of Work

- Installation of 2,590km FO cable and burial of 549km
- Post-lay burial of 24km

Project Highlight

PEACE Med was SBSS's first telecom project in Mediterranean Sea. As the system spans multiple countries, the vessel inevitably need to shuttle between two or more countries during the installation. In order to ensure the uninterrupted operation, SBSS Project Management team communicated effectively with local authorities and delivery the project in time.



Telecommunications Services

Case Studies

PNG National Submarine Fibre Cable Network

Customer	: HMN
Vessel	: CS Fu Hai
Location	: Papua New Guinean
Activity	: Surface lay of 1,873km FO cable
Year	: 2018



Overview

In 2018, SBSS was contracted by HMN to surface lay 1,873km FO cable in the PNG National Submarine Fibre Cable Network, a submarine system built and operated by PNG DataCo Limited, connecting 14 main cities in PNG. During the installation, SBSS successfully rescued 10 persons onboard the fishing boat MV Lousianne which showcased the company's corporate social responsibility.

Scope of Work

- Surface lay of 1,873km FO cable
- 4 direct and 1 indirect landings in PNG

Project Highlight

This was SBSS's first project in PNG and the first time of installing Hengtong FO cable with 3 branching units. The laying speed was closely monitored throughout the installation due to the uneven seafloor terrain. We achieved precise installation and ahead-of-time project delivery drawing from our extensive experience in telecoms sector.

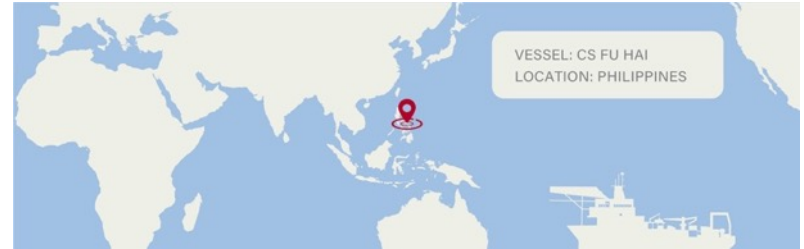


Telecommunications Services

Case Studies

Sorsogon-Samar Submarine Fiber Optical Interconnection Project (SSSFOIP)

Customer	: HMN
Vessel	: CS Fu Hai
Location	: Philippines
Activity	: Surface lay of 21km FO cable
Year	: 2018



Overview

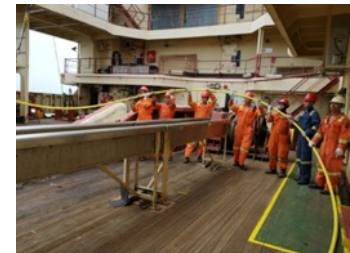
The Sorsogon-Samar Submarine Fiber Optical Interconnection Project (SSSFOIP) was developed by the National Grid Corporation of the Philippines (NGCP) and EPCed by Huawei Marine Networks (HMN). The SSSFOIP project was the first power grid project for HMN.

Key Challenges

The installation was successfully completed despite aggressively strong sea currents, particularly challenging when meeting the requirement for Uraduct application at the crossing points with 2 third party in-service cables. Following intense investigation and planning, SBSS implemented a carefully managed installation plan which ensured safe delivery of this difficult project.

Scope of Work

- Surface lay of 21km FO cable
- 2 direct cable landings in Philippines



RENEWABLES SERVICES

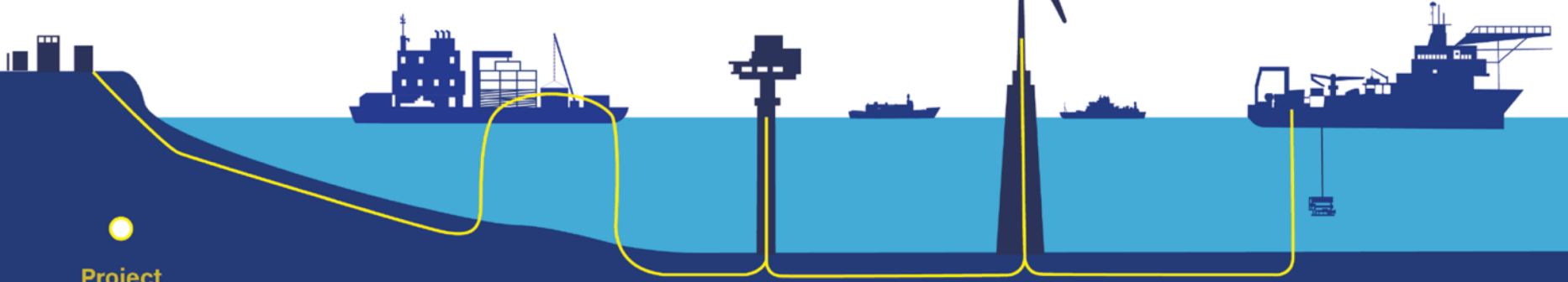


Renewables Services

○ Cable Storage

○ Project Management

○ Specialist Cable Ships



● Project Engineering

● Pre-Project Planning & Cable Installation

● Subsea Asset Integrity Management

● Crew Transfer Vessel

● Cable Route Services

● Trenching & Protection

Renewables Services

Our Expertise



Pre-project Planning & Cable Installation

65,000km unprecedented track record

- Installation of export and inter-array cable
- Shore-end landing and beach works
- J-tube pull-in, cable termination and testing



Burial and Protection

Cutting-edge assets deliver precision

- Trenching and post-lay inspection and burial (PLIB)
- ROV-supported burial inspection
- Customized protection solution (sandbag, mattress, cable protection system)



Subsea Asset Integrity Management

Complete services portfolio and bespoke solution

- ROV-supported subsea asset inspection (cable, foundation, substation)
- Inspection and analysis of cable burial depth
- Scheduled and unscheduled maintenance

Renewables Services

Our Competitiveness



Track Record

SBSS is highly experienced in power cable installation and burial with over 50 projects delivered across the power utility, O&G and offshore wind sectors since 2003. We officially stepped into the offshore wind sector in 2017 and have delivered over 12 cable installation and burial projects and installed over 300km 220kV export cable in offshore wind sector.



Integrated Services

Our comprehensive set of services covers the **lifecycle** of submarine power cable from pre-project planning, route survey, PLGR, shore-end landing, cable installation, trenching to ROV-supported inspection and repair.



Post-lay Burial

The **post-lay burial (PLB)** services that SBSS offer fundamentally changes the way cable lay and burial is conducted within the Chinese offshore wind market. As offshore installation windows are very much limited by the weather, the combination of surface lay and PLB substantially reduce the main lay time and offers a **significantly safer solution** to renewable cable installations during the Typhoon season.



Fu Yong 6

Fu Yong 6 is a multi-purpose cable lay barge equipped with a **5,500t** capacity cable carousel system with high capacity caterpillar track tensioners and a 6-point mooring system. Since delivery in late 2021, Fu Yong 6 has delivered **over 8 offshore wind projects in China**.

Renewables Services

Track Record

 Shandong Energy Bo Zhong A Offshore Wind Installation and burial of 34.2km 220kV export cable and 29.7km 35kV inter-array cable Fu Yong 6 Shandong, China Haizhiyuan	2022	Huadian Yuhuan #1 Offshore Wind Installation and burial of 5.5km 66kV inter-array cable Fu Yong 6 Zhejiang, China Huadian Heavy Industry	
 SPIC Rudong H7 Offshore Wind Installation and burial of 17.2km 35kV inter-array cable Fu Yong 6 Jiangsu, China Kaizhiyun	2021	Yuedian Zhanjiang Wailuo Offshore Wind Installation and burial of 8km 35kV inter-array cable Fu Yong 6 Guangdong, China Hengtong	
 Yuedian Zhanjiang Xinliao Offshore Wind Installation and burial of 23km 220kV export cable Fu Yong 6 Guangdong, China Hengtong	2021	Putian Nanri Phase 1 Offshore Wind Installation and burial of 48km 220kV export cable VOO Fujian, China Shanghai Foundation	
	2021		
	2021		
	2021		



Bo Zhong A Offshore Wind (2022)



Xinliao Offshore Wind (2021)

Renewables Services

Track Record

 <p>Changle A Offshore Wind Installation and burial of 39.1km 220kV export cable Fu Yong 6 Fujian, China Dejing</p>	<p>2021</p>	<p>Changle C Offshore Wind Installation and burial of 38.9km 220kV export cable Fu Yong 6 Fujian, China Dejing</p> 
 <p>Guoneng Dafeng H5 Offshore Wind Installation and burial of 79.1km 220kV export cable Fu Yong 6 Jiangsu, China Dejing</p>	<p>2021</p>	<p>Luneng Dongtai Offshore Wind O&M Subsea inspection of two monopile foundations and J-tube condition Predator ROV Jiangsu, China Jingtai</p> 
 <p>Longyuan Dafeng Offshore Wind Installation and burial of 19.5km 220kV export cable VOO Jiangsu, China Shanghai Foundation</p>	<p>2020</p>	<p>Datang Binhai Offshore Wind Installation and burial of 23km 220kV export cable VOO Jiangsu, China Shanghai Foundation</p> 
 <p>Voith Tidal Current Turbine Installation of 3.5km 11kV power cable for tidal current turbine system CS Fu Hai South Korea Voith</p>	<p>2019</p>	<p>2017</p>



Changle C Offshore Wind (2021)



Guoneng Dafeng Offshore Wind (2021)

Renewables Services

Case Studies

Changle C Offshore Wind 220kV Export Cable Installation

Customer : Dejing
Asset : Fu Yong 6
Location : Fujian, China
Workscope : Installation of 38.9km export cable
Year : 2021

Project Highlight

Installation of the 38.9km length of Changle-C export cable, with burial to 3 metres is now complete.

For the first time in the company's 26 year history, SBSS performed the full work scope. Shore end civil ops, cable landing and offshore installation.

The 258mm diameter, 132kg/m, 220kV power cable was pulled some 1.7km to the beach manhole over three successive tides.



Renewables Services

Case Studies

Guoneng Dafeng Offshore Wind 220kV Export Cable Installation

Customer : Dejing
Asset : Fu Yong 6
Location : Fujian, China
Workscope : Installation of 79.1km export cable
Year : 2021

Project Highlight

The project consisted of the installation of two segments of export cable, 79.1km length in total, connecting the Dafeng H5#-1 to H5#-2 offshore substations and H5#-2 offshore substation to the onshore substation. SBSS's Greater China team overcame multiple challenges along the way including the very long-distance shore-end landing, a complicated cable route on site and orchestrating the overall project. The successful delivery evidences a critical step forward in the overall Dafeng H5 grid connection which is targeted for completion before the year-end 2021.



Renewables Services

Case Studies

Luneng Dongtai Offshore Wind Subsea Inspection

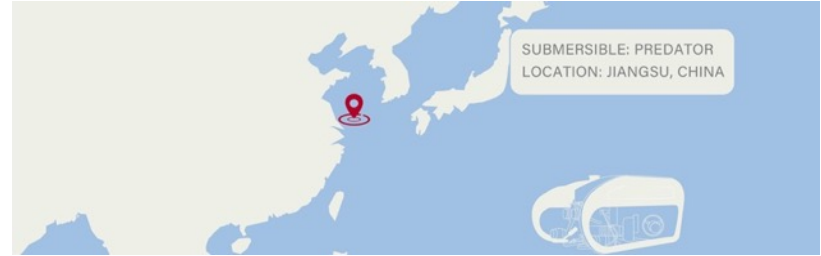
Customer	: Jianguo Jingtai
Asset	: Predator
Location	: Jianguo, China
Activity	: Subsea inspection of two monopile foundations and J-tube condition
Year	: 2020

Overview

In 2020, SBSS was contracted by Jianguo Jingtai to conduct the subsea inspection of two monopile foundations and J-tube condition in the Dongtai offshore wind farm, which was developed and operated by Luneng, Jianguo.

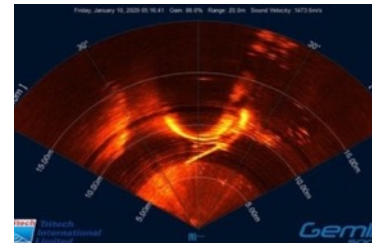
Project Highlight

SBSS mobilized the owned and operated inspection class ROV “Predator” for this important work. This ground breaking project marked a turning point in the Chinese offshore wind O&M sector as it was the first occasion in which such technology was utilised. Our successful project delivery demonstrated the feasibility of this methodology and its added-value to customers when compared to conventional inspection delivered by divers.



Asset

Predator, a 300m depth-rated inspection class ROV, has been developed to meet the demanding need for rugged and reliable underwater viewing systems. The ROV features a color-zoom camera and Tritech sonar, which is widely utilized in subsea inspection, research and survey work.



Renewables Services

Case Studies

Longyuan Dafeng Offshore Wind Export Cable Installation

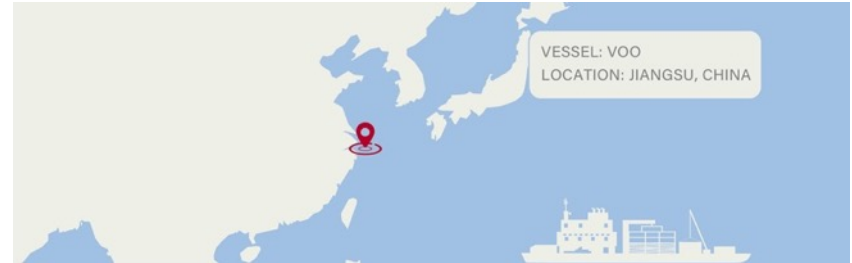
Customer	: Shanghai Foundation
Vessel	: VOO
Location	: Jiangsu, China
Activity	: Installation and burial of 19.5km 220kV export cable
Year	: 2019

Overview

In 2019, SBSS was contracted by the Shanghai Foundation to install 19.5km of 220kV export cable in the Dafeng offshore wind farm, which was developed and operated by Longyuan, Jiangsu.

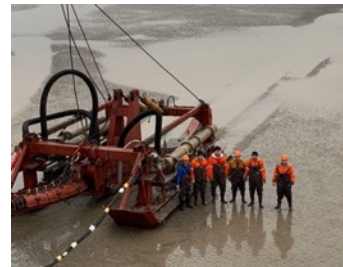
Scope of Work

- Transportation & Installation of 1 x19.5 km 220kV export cable
- Shore-end landing and J-tube pull-in to offshore sub-station
- Export cable burial to 3m below the seafloor



Value Added

By bringing our extensive deep water cable installation experience to bear, SBSS achieved precise cable laying, exacting cable burial and ahead-of-time project delivery for this shallow water project during the testing East China Sea winter season.

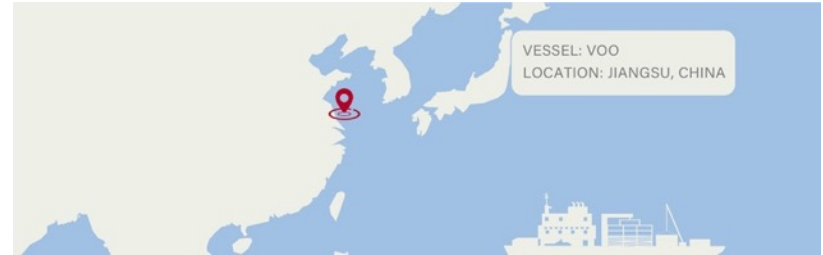


Renewables Services

Case Studies

Datang Binhai Offshore Wind Export Cable Installation

Customer	: Shanghai Foundation
Vessel	: VOO
Location	: Jiangsu, China
Activity	: Installation and burial of 23km 220kV export cable
Year	: 2017



Overview

In 2017, SBSS was contracted by the Shanghai Foundation to install 23km of 220kV export cable out to the Binhai offshore wind farm, which was developed and operated by Datang.

Scope of Work

- Transportation & Installation of 1 x 23 km 220kV export cable
- Shore-end landing and J-tube pull-in
- Export cable burial to 3m below the seafloor

Value Added

Exceptional SBSS attention to detail and experienced project management ensured seamless communication among various parties including the developer, local authorities and suppliers. SBSS is proud to have delivered this project to a satisfied customer.



Renewables Services

Case Studies

Power cable installation for the Voith Tidal Current Turbine

Customer	: Voith
Vessel	: CS Fu Hai
Location	: South Korea
Activity	: Installation of 3.5km 11kV power cable for tidal current turbine system
Year	: 2010



Overview

In the winter of 2010, SBSS mobilized CS Fu Hai to South Korea and successfully delivered the first tidal turbine cable lay project in the Korean peninsula.

Project Highlight

Despite challenging strong surface currents, SBSS's experienced offshore team positioned the termination box precisely on the seabed within the Jangjuk Channel



POWER UTILITY SERVICES



Power Utility Services



Cable Storage



Shore-end Landing



Specialist Cable Ships



Project Management



**Pre-Project Planning
&
Cable Installation**



**Cable Route
Services**



**Trenching
&
Protection**



**Subsea Survey
Solutions**

Power Utility Services

Our Expertise



Pre-project Planning & Cable Installation

Proven capabilities in delivering solutions for challenging projects

- Permitting and route survey
- Pre-lay grapnel run (PLGR) and surface lay
- Shore-end landing and beach works
- Cable and pipeline crossing
- Cable testing



Burial and Protection

Cutting-edge assets deliver precision

- Simultaneously lay and burial of low to high voltage power cable
- Post-lay inspection and burial (PLIB)
- Customized protection solution (mattress, articulate pipe etc.)



Inspection and Repair

10-Year Guardian of China Southern Grid's 500kV Power Cable

- ROV-supported burial inspection
- Shallow and deep water repair solutions
- Cable recovery and testing
- Other remedial works

Power Utility Services

Our Competitiveness



Integrated Services

Our comprehensive set of services covers the **lifecycle** of submarine power cable from pre-project planning, route survey, PLGR, shore-end landing, cable installation, trenching to ROV-supported inspection and repair.



Customized Solutions

We are capable to create **effective solutions** tailored to customers' needs. Such solutions include the bundled laying of three cables for the Jindo-Jeju Interconnector project and 6m burial for the Bangladesh Sandwip project.



Chinese Expertise

Strategically located in Shanghai, China, we are geographically closed to Asian cable manufactures which enables us to offer a **“one-stop” solution** from cable transportation to installation in one package. This will not only significantly reduce the risk of cable damage by avoiding transpooling activities but also achieve substantial schedule and cost savings.











QT1000

QT1000 is a purposely-designed trenching ROV with 1,000 horse power and can bury cable **up to 3m** below seabed. Sealion III is equipped with the state-of-the-art **TSS 440 and 350 dual cable tracking systems**, which provides constant cable and pipe location data to enable burial accuracy.

Power Utility Services

Track Record

	Fushan Xuwen Phase One Forth Inspection Burial inspection of 3X30km 500kV power cable	2020	Fushan Xuwen Phase One Risk Spot Inspection ROV inspection of 24 risk spots	
VOO China China Southern Grid			VOO China China Southern Grid	
	Bangladesh Sandwip Installation of 2x15km 33kV power cables with maximum 6m burial depth	2019		
VOO Bangladesh BPDB & ZTT			Wando-Jinsan Interconnector Surface lay and PLIB of 12km 22.9kV power cable with articulate pipe protection	
VOO Bangladesh BPDB & ZTT			Surface lay and PLIB of 12km 22.9kV power cable with articulate pipe protection	
	Fushan Xuwen Phase One Third Inspection Burial inspection of 3x25km 500kV power cable	2018		
CS Fu An China China Southern Grid			CS Fu Hai & CS Fu An South Korea Haechun	
	Jindo-Jeju Interconnector Route survey for 100km as-laid HVDC power cable between Jindo and Jeju island	2017		
CS Fu Hai South Korea LS Cable & System			Eastern Europe Interconnector Installation and burial of 16x13.8km 220kV power cables	
CS Fu Hai South Korea LS Cable & System			VOO Eastern Europe SGAL	
		2016		
		2016		
		2015		
		2014		
			Margarita Island to Chacopata Surface lay and PLIB of 2x31km 230kV power cables	



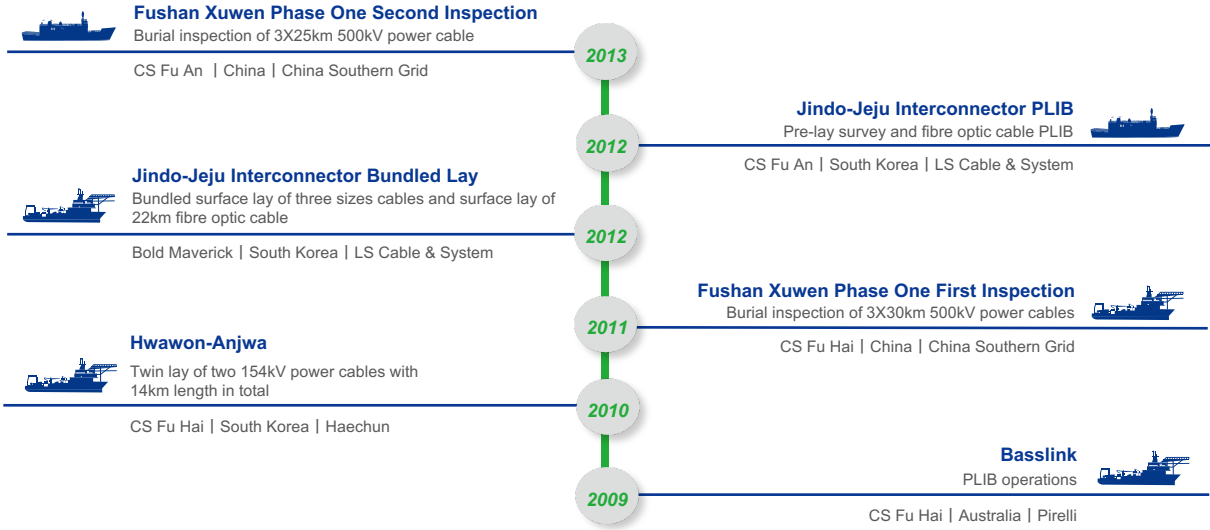
Bangladesh Sandwip (2018)



Wando-Jinsan Interconnector (2017)

Power Utility Services

Track Record



Jindo-Jeju Interconnector Bundled Lay (2012)



Basslink (2009)

Power Utility Services

Case Studies

Bangladesh Sandwip

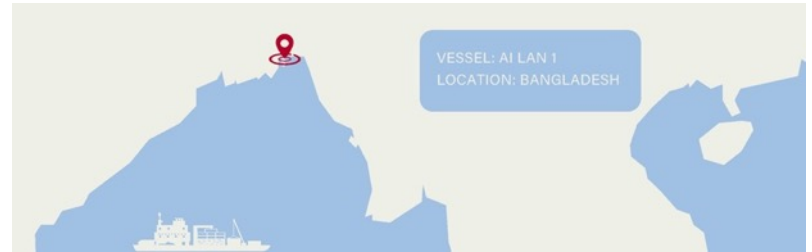
Customer	: Bangladesh Power Development Board
Vessel	: Ai Lan 1
Location	: Bangladesh
Activity	: Installation of 2x15km 33kV power cables with maximum 6m burial depth
Year	: 2018

Overview

SBSS, in consortium with cable manufacturer ZTT, was awarded by Bangladesh Power Development Board in 2017 to install two 15km 33kV power cables between Barabkunda and Sandwip islands in Bangladesh. This project was the first long distance submarine composite power cable project in Bangladesh.

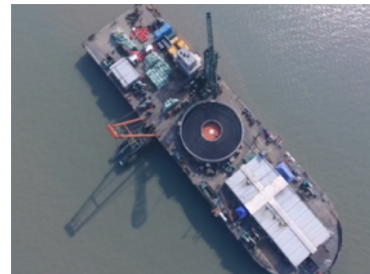
Scope of Work

- Installation of 2 x 15km 33kV power cables
- Cable burial up to 6m water depth
- Cable landing



Key Challenges

In partnership with ZTT, SBSS successfully delivered this turnkey project and overcame the operational difficulties of a lack of local resources, deep cable burial depth and a significantly long, 2.4km landing distance.



Power Utility Services

Case Studies

Jindo-Jeju Interconnector Bundled Cable Lay

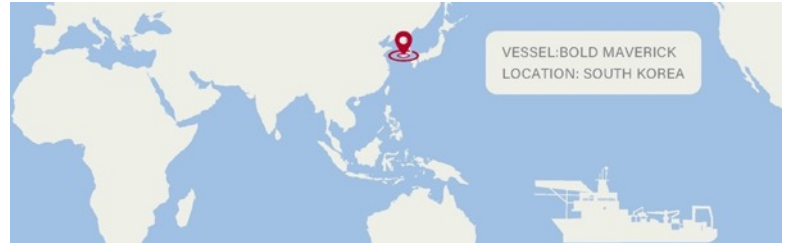
Customer	: LS Cable & System
Vessel	: Bold Maverick
Location	: South Korea
Activity	: Bundled surface lay of three various sized submarine cables and an additional surface lay of 22km fibre optic cable
Year	: 2012

Overview

SBSS were contracted by LS Cable & System for the installation of power and FO cable in Jindo, South Korea. Bold Maverick, SBSS's DP2 multi-purpose vessel, completed the bundled surface lay of two power cables and one FO cable in Pole 1 totaling 15km in length and 22km FO cable in Pole 2.

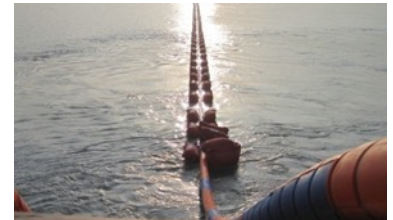
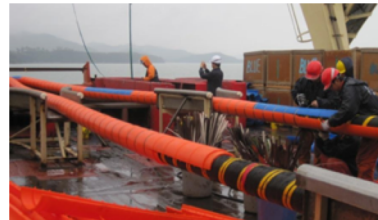
Scope of Work

- Cable loading at Donghae Port, South Korea
- Bundled surface lay of three sizes of cable including two power cables and one FO cable, surface lay of 22km FO cable
- Supply and installation of cable protection system
- Shore end landing at Jindo



Technical Highlight

The installation involved the bundling and simultaneous lay of three different sized cables which were fed from two separate cable tanks onboard Bold Maverick. Two power cable engines were perfectly synchronized for the installation work with the three cables passing through an onboard bundling machine before being laid over a bespoke stern chute.



Power Utility Services

Case Studies

Wando Jinsan Power Cable Installation and PLIB

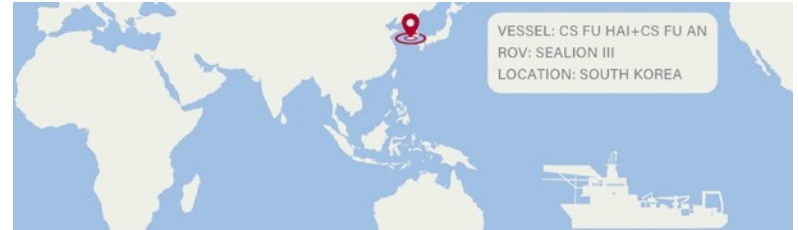
Customer : Haechun
Vessel : CS Fu Hai & CS Fu An | **Burial Tool: Sealion III**
Location : South Korea
Activity : Surface lay and PLIB of 12km 22.9kV power cable
Year : 2017

Overview

In 2017, SBSS, in collaboration with Haechun, deployed both DP2 multi-purpose vessel CS Fu Hai and DP1 cable maintenance vessel CS Fu An for the power cable surface lay and PLIB operation connecting Wando and Jinsan in South Korea.

Scope of Work

- Cable loading in South Korea
- Surface lay of 12 km of 22.9kV power cable
- The installation of Articulated Pipe cable protection
- Shore end landings
- PLIB operation



Project Highlights

For the purpose of cable protection, our client requested that articulated pipe be applied to the entire cable length of 12km of power cable. During the surface lay, the demanding articulated pipe installation procedure was carefully followed, ensuring a constant cable lead. Consideration was also given to ensuring that there was sufficient slack to enable effective post lay burial by ROV.



Power Utility Services

Case Studies

Jindo-Jeju Interconnector PLIB

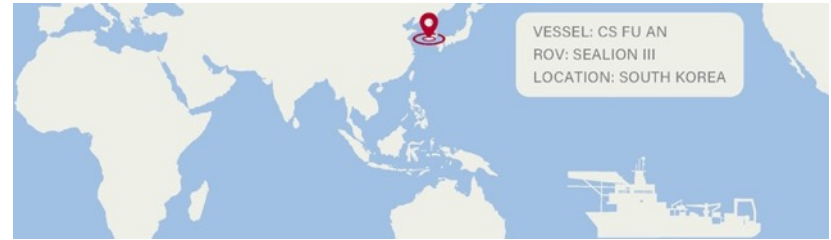
Customer	: LS Cable & System
Vessel	: CS Fu An Burial Tool: Sealion III
Location	: South Korea
Activity	: Pre-lay survey and fibre optic cable PLIB
Year	: 2012

Overview

Following the successful delivery of Jindo bundled lay project, SBSS were contracted by LS Cable yet again for the FO cable PLIB between Jindo and Jeju island, South Korea. DP1 cable ship CS Fu An equipped with jet trenching ROV Sealion III completed the pre-lay survey and PLIB work in just one month.

Scope of Work

- FO cable PLIB
- Pre-lay survey utilizing Sealion III



Technical Highlights

During the PLIB operation, SBSS's subsea team overcame various technical challenges including hard seabed conditions and the large power cable diameter. Through innovative ROV modification and superb offshore work SBSS successfully delivered the project on time.



Power Utility Services

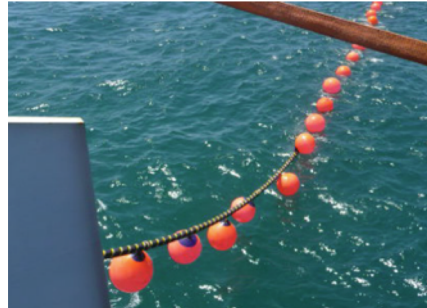
Case Studies

Margarita Island to Chacopata Power Cable Installation and PLIB

Customer	: LS Cable & System
Vessel	: CS Sovereign Burial Tool: Atlas
Location	: Venezuela
Activity	: Surface lay and PLIB of 2 x 31km 230kV power cables
Year	: 2014

Overview

In 2014, SBSS was contracted by LS Cable & System to install a power cable system linking Margarita Island with the Venezuelan mainland. C.S. Sovereign, a DP2 cable installation vessel owned by the Global Marine Group, was chartered by SBSS to perform the work.



Scope of Work

- Direct shore end installation
- Surface lay of 30km AC 230KV XLPE power cable
- Surface lay of 30km AC 230KV XLPE power cable with integrated fibre optic cable
- Post lay inspection & burial of the two laid power cables plus two additional power cables previously laid
- Burial distance of some 60km
- Seamless shore end installation

**OIL AND GAS
SERVICES**



Oil and Gas Services

○
**Project
Engineering**

○
**Specialist
Cable Ships**

○
**Project
Management**

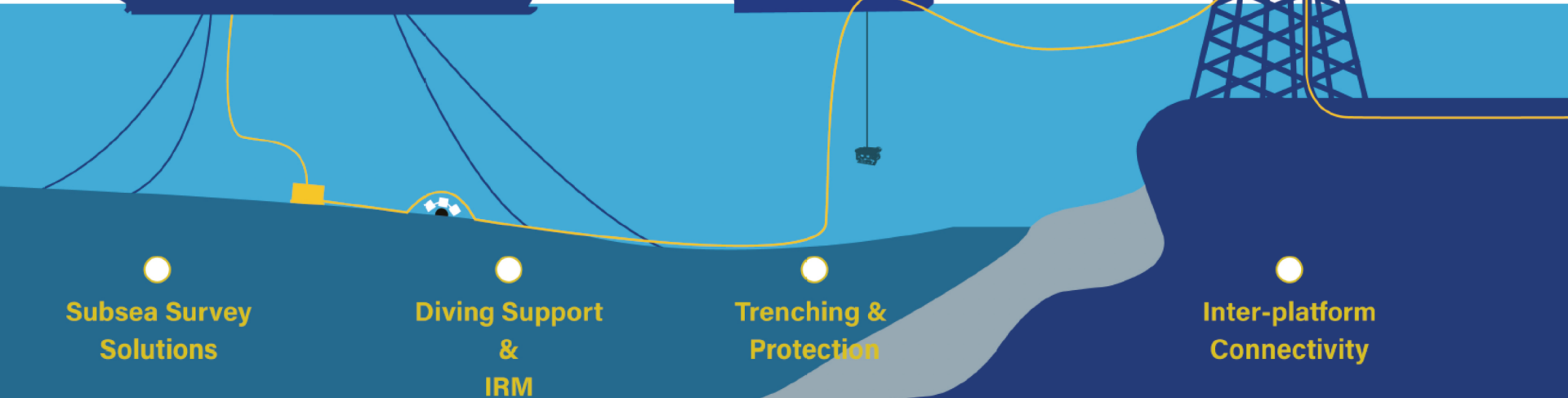


●
**Subsea Survey
Solutions**

●
**Diving Support
&
IRM**

●
**Trenching &
Protection**

●
**Inter-platform
Connectivity**



Oil and Gas Services

Our Expertise



Subsea Cable and Flexible Pipe Installation
Proven track record with BP, Shell and CNOOC

- Desktop study and route survey
- Inter-platform and shore-to-platform cable installation
- Flexible pipe installation and J-tube works
- Shore-end landing and beach works
- Cable and pipeline crossings
- Cable testing



Burial and Protection
Cutting-edge assets deliver precision

- Inter-platform and shore-to-platform cable burial
- Post-lay inspection and burial (PLIB)
- Pipeline trenching
- Customized protection solution (mattress, articulate pipe etc.)



Diving Support and IRM Operations
Customized and cost-effective solutions

- ROV-supported inspection, repair and maintenance (IRM) works
- DP2 vessels supporting saturation diving operations

Oil and Gas Services

Our Competitiveness



Track Record

SBSS stepped into the O&G market in 2003 with the first project delivered in the Dong Fang 1-1 field, since then we have completed **30 projects** in this sector across the globe, including BP Tangguh Extension in Indonesia, Shell Cili-Padi in Malaysia, Qatar Barzan in the Middle East and various offshore O&G fields in China.



QHSE Standards

Keeping a high standard in Quality, Health, Safety and Environment (QHSE) management is at the heart of our day-to-day operation. Our project delivery in **Tangguh Extension** field for Saipem and BP as the end user in 2019, is exemplary of our commitment in pursuit of outstanding QHSE performance.



Chinese Expertise

Strategically located in Shanghai, China, we are geographically closed to Asian cable manufactures which enables us to offer a **“one-stop” solution** from cable transportation to installation in one package. This will not only significantly reduce the risk of cable damage by avoiding transpooling activities but also achieve substantial schedule and cost savings.










QT1000

QT1000 is a purposely-designed trenching ROV with 1,000 horse power and can bury cable **up to 3m** below seabed. Sealion III is equipped with the state-of-the-art **TSS 440 and 350 dual cable tracking systems**, which provides constant cable and pipe location data to enable burial accuracy.

Oil and Gas Services

Track Record

 <p>BP Tangguh LNG Expansion 16.5km of inter-platform connectivity and 41.2km export cable installation and burial , including HDD cable landing</p>	2019	<p>Wenchang O&G Field 19.3km of 35kV inter-platform connectivity</p> 
 <p>Huangyan O&G Field 52.4km of 35kV inter-platform connectivity including post-lay burial operations</p>	2014	<p>Bold Maverick Indonesia Saipem</p>
<p>Bold Maverick China COOEC</p>	2014	<p>Enping O&G Field 46.5km of 35kV inter-platform connectivity</p> 
<p>Panyu and Liwan O&G Field Pipeline trenching and free span correction through ROV supported grouting</p>	2014	<p>Bold Maverick China COOEC</p>
<p>Bold Maverick China COOEC</p>	2014	<p>Huangyan O&G Field Installation of mattress protection</p> 
 <p>Naga-Pelikan 50km of inter-platform connectivity including post-lay burial operations</p>	2014	<p>Bold Maverick China COOEC</p>
<p>Bold Maverick Indonesia Swiber</p>	2013	<p>Qatar Barzan 6 segments of inter-platform connectivity</p> 
	2013	<p>Bold Maverick Qatar Subtech</p>



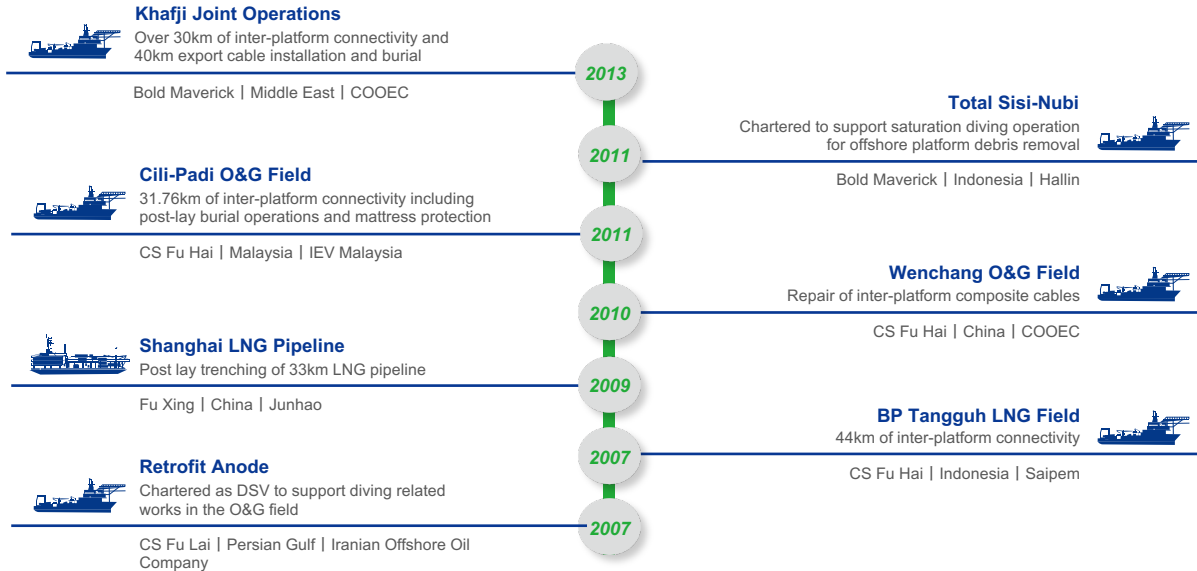
BP Tangguh LNG Expansion (2019)



Qatar Barzan (2013)

Oil and Gas Services

Track Record










Cili-Padi O&G Field (2011)



Wenchang O&G Field (2010)

Oil and Gas Services

Track Record

 PTT Gulf of Thailand Chartered as DSV to support diving related works in the O&G field CS Fu Lai Thailand Hallin	2006	Sakhalin Phase 2 Chartered as DSV to support diving related works in the O&G field CS Fu Lai Russia Saipem	
 Modec Indonesia Chartered as DSV to support diving related works in the O&G field CS Fu Lai Indonesia Hallin	2006	Chunxiao O&G Field Installation and burial of 20km power cable CS Fu Hai China COOEC	
 Cuel Gulf of Thailand Chartered as DSV to support diving related works in the O&G field CS Fu Lai Thailand Hallin	2005	Lamma Gas Pipeline Installation of mattress protection CS Fu Lai Hongkong Hallin	
 Xijiang O&G Field Chartered as DSV to support riser system removal	2005		



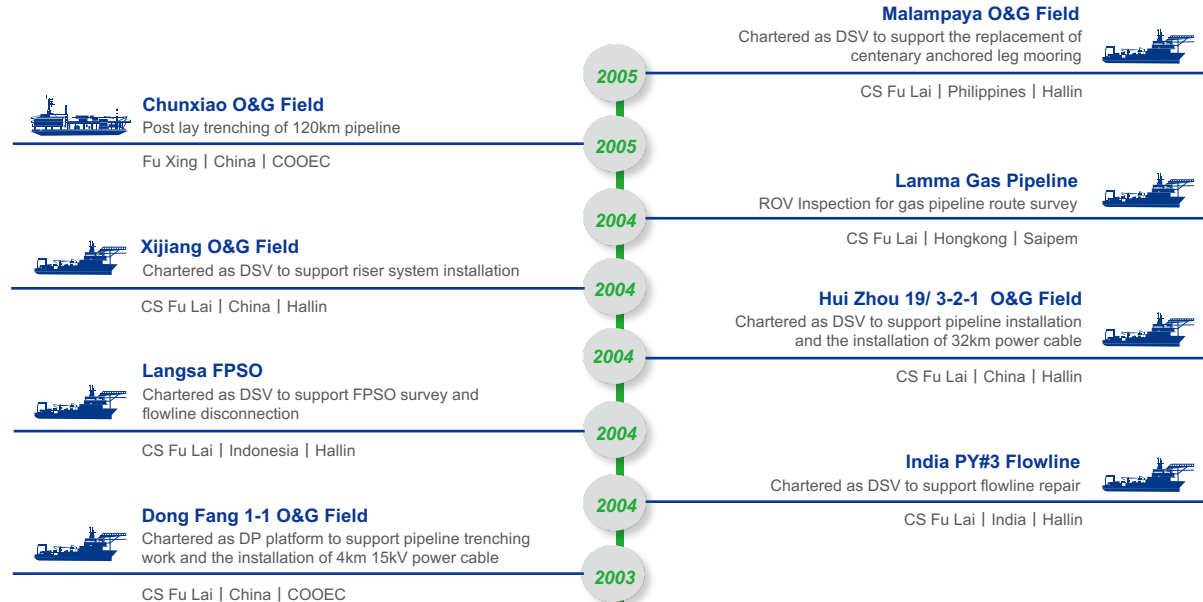
Sakhalin Phase 2 (2006)



Chunxiao O&G Field (2005)

Oil and Gas Services

Track Record



Hui Zhou 19/ 3-2-1 O&G Field (2004)



Dong Fang 1-1 O&G Field (2003)

Oil and Gas Services

Case Studies

BP Tangguh LNG Expansion

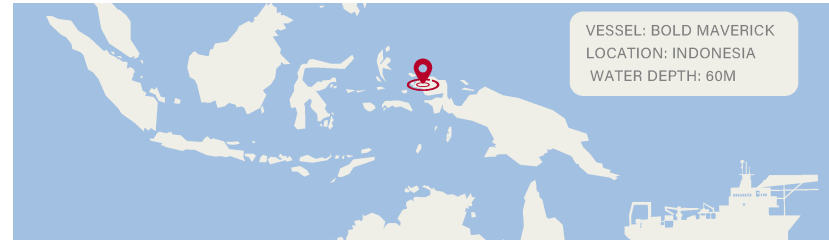
Customer	: Saipem
Vessel	: Bold Maverick
Location	: Indonesia
Activity	: 16.5km of inter-platform connectivity and 41.2km export cable installation and burial , including HDD cable landing
Year	: 2019

Overview

In September 2017, SBSS was awarded by Saipem a contract to install 3 composite cables for the Tangguh LNG Expansion Project operated by BP Berau. This was the second project awarded to SBSS by Saipem following the installation and burial of 44km composite cable for Tangguh LNG back in 2007.

Technical Highlight

The O&G industry is renowned for its high QHSE management standards as well as the requirement for meeting as-planned project delivery. SBSS not only successfully passed the series of strict QHSE audits but also overcame multiple operational challenges including cable ploughing in strong surface currents and in close proximity to in-service pipelines. Substantial engineering work, a complicated permit application procedure in Indonesia and the threat of local infectious diseases also challenged our team. SBSS again proved our reliability as a trusted long-standing service provider to Saipem.



Scope of Work

- Transportation & Installation of 16.5km composite cable from the WDA to ROA platforms operating to a maximum water depth of 60m
- T&I of 28.8 km composite cable from the WDA platform to ORF (onshore)
- T&I of 12.3 km composite cable from the ROA platform to ORF (onshore)
- Shore-end landing, HDD, ploughing and J-tube pull-in



Oil and Gas Services

Case Studies

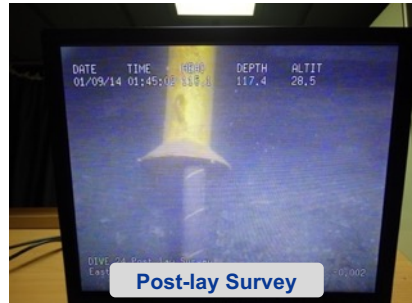
Wenchang / Huangyan / Enping / Liwan / Panyu Offshore O&G Fields

Customer : COOEC Vessel : Bold Maverick + CS Fu An Location : China Year : 2014	Enping	46.5km of 35kV inter-platform connectivity
	Huangyan	52.4km of 35kV inter-platform connectivity, PLIB and mattress protection
	Wenchang	19.3km of 35kV inter-platform connectivity
	Panyu	Pipeline trenching and free span correction through ROV supported grouting
	Liwan	Pipeline trenching and free span correction through ROV supported grouting

Overview

In 2014, SBSS was contracted by COOEC, a wholly subsidiary of CNOOC, to conduct a series of inter-platform cable installation and a wider range of subsea support works for its 5 major offshore O&G fields in the East and South China Seas. The fields were Wenchang, Huangyan, Enping, Liwan and Panyu.

The ahead-of-schedule delivery of the projects reinforced SBSS's reputation and capability as a solution-leading marine service provider.



Oil and Gas Services

Case Studies

Qatar Barzan Inter-platform Cable Connection

Customer	: Subtech
Vessel	: Bold Maverick I Burial Tool: Sealion I
Location	: Middle East
Activity	: 6 segments of inter-platform connectivity
Year	: 2013

Overview

The Barzan Gas Project was a vital project to sustain and fuel major infrastructural projects in Qatar. The \$10.3bn project was implemented by RasGas, a joint venture (JV) of Qatar Gas and ExxonMobil.

In 2013, SBSS was awarded by Subtech Group (a subsidiary of James Fisher and one of the key marine contractors in the Middle East), a contract to support the cable inter-connectivity of 6 platforms.

Key Challenges

The tight installation schedule and short vessel mobilization window were the key challenges that SBSS faced. Supported by skilled onshore and offshore staff and experienced in-house project managers, SBSS effectively mobilized Bold Maverick to Abu Dhabi within one month of contract signature.



Scope of Work

- Installation of over 100km of inter-platform fibre optic and power cables
- ROV-support subsea works
- J-tube pull-in and cable protection application



Oil and Gas Services

Case Studies

Cili-Padi O&G Field Inter-platform Connectivity

Customer	: IEV Malaysia
Vessel	: CS Fu Hai Burial Tool: Sealion II
Location	: Malaysia
Activity	: Over 30km of inter-platform connectivity and 40km of export cable installation and burial
Year	: 2013

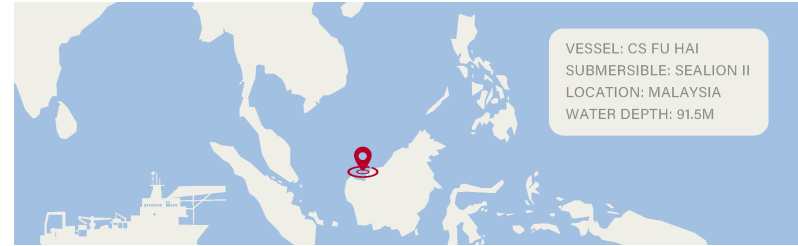
Overview

In 2011, SBSS was contracted by IEV to install a 31.76km power cable between the platforms F23R-A and CDPR-A (Cili-Padi) situated in Sarawak Malaysia. The Cili Padi field is operated by Shell Malaysia. This power cable is vital to oil production and is critical for the power supply and remote monitoring of the Cili Padi platform.

Project Highlight

The project required precision cable laying along a given route and the work was fulfilled by SBSS's highly maneuverable DP2 cable lay vessel CS Fu Hai with 200hp work class ROV onboard.

Thorough pre-op audits were conducted by the client and the high management standards of SBSS's vessel, crew and project team were recognized allowing us to meet the uncompromising demands of QHSE.



Scope of Work

- T&I of 31.76 km of power cable connecting platform F23R-A and CDPR-A in maximum water depth of 91.5m
- J-tube pull-in and concrete mattress installation
- Post-lay burial utilizing Sealion II ROV



QHSE COMMITMENT



QHSE Commitment

Safety Moment

SBSS take offshore safety seriously and within our internal procedures is a requirement that our offshore staff regularly submit Safety Observation Cards (SOS cards) reporting on both unsafe or safe performance practices that they witness onboard.

Through the implementation of our SOS card procedure, not only are unsafe practices reported on and corrected in a timely manner, but also the information can be shared within our fleet as "Lessons Learned".

We are proud of the safety culture engendered in S.B. Submarine Systems. We constantly strive to improve our safety record. When the job is done our crews must return home safe to their families.



SBSS Captain of CS Fu Hai submitted the 1000th SOS card.

PEOPLE | CSR | LATEST NEWS



Our People

People power the future.

SBSS's Project Managers have a combined experience in managing submarine cable projects of more than one hundred years.

Our senior offshore staff have worked in the submarine cable business for decades and possess a wealth of operational experience in the sector.

Our onshore technical solution team and fleet operation people are former cable ship Captains, Senior Engineers, Senior Cable Engineers and Senior Subsea Engineers who have a practical understanding of our business and the specialism of cable installation & cable burial.



Corporate Social Responsibility

Fu Tai Shanghai Rescue

On the 1st November 2022, Fu Tai rescued three seafarers in East China Sea during a cable repair operation.

Shanghai Maritime Bureau, Wusong Traffic Management Bureau and East China Sea Rescue Bureau speak highly of SBSS's professionalism during this rescue.



CS Fu Hai Papua New Guinea Rescue

On the 18th December 2018, one of our cable lay vessels, CS Fu Hai, rescued ten stranded seafarers in Milne Bay province in Papua New Guinea.

The sea conditions during the rescue were harsh but our offshore team successfully recovered the crew of MV Lousianne, who had been adrift for 36 hours, and subsequently towed their vessel to Port Moresby.



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**LINKING THE WORLD
LIGHTING THE FUTURE**
