



#### **MARINE SOLUTIONS**

We embark on a journey to redefine Marine Industry standards.



# SHIPBUILDING & MARINE TECHNOLOGY

VERKAAN's affiliated company in Korea, named SUNGDONG, is engaged in building highly-efficient and eco-friendly ships through an optimized flow production at the smart Yard with a World-Class on-land shipbuilding sustem.

SUNGDONG SHIPBUILDING & MARINE ENGINEERING has positioned itself as the trustworthy partner of ship owners and shipping companies around the world by building ships with the finest quality vessels in the world.



Sungdong Shipyard

#### On-Land Shipbuilding Methods & Advantages

As the first large - scale shipbuilder in the world that adopted the On-land shipbuilding as a main building method, SUNGDONG SHIPBUILDING & MARINE ENGINEERING has the original technology to launch a ship maximum 220,000 DWT on ground. SUNGDONG launched a ship in the shortest period of time On-land in 2006. In 2008, it succeeded in building 175,000 ton bulker, the biggest size in the history of On-land Shipbuilding. In 2009, it build a 6,500 TEU container ship On-land for the first in the world. in 2013, it built a 8,800 TEU containership, 157,000 ton shuttle tanker, 350,000 BBLS FSO On-land.

Ring Pre-erection
Multi Point Erection

Side-Shifting Self Driving Bogie System GTS Method

#### **ECONOMIC**

- \* Ships can built without dock facilities.
- \* The required precedent work can be carried out entailing with reduction of working man hour.
- \* A floating dock can be used as another berth.
- \* The free access to materials and equipment is allowed.

#### SAFE

- \* Workplace on-land is much safer than dry dock.
- \* Vessels to be launched are in stability due to the patented technology with which same pressures are placed on any parts of a ship.

#### **EFFICIENT**

- \* Ships can be built in any places
- \* A variety of building methods can be applied.
- \* High turnover rate of yard.
- \* Quality can be thoroughly gauranteed, even the painting on the bottom of a ship.

#### **ENVIRONMENT-FRIENDLY**

\* Since most of the construction work should be completed on-land marine pollution can be minimized considerably.

#### Ring Type Pre-Loading

Ring Type Pre-Loading is a method designed to reduce work time. Blocks are set up and loaded as a single unit from the bottom to the top. The shape of the arrangement resembles a ring. This method reduces the number of blocks and hence the time for loading, thereby improving the turnaround of yards.









Side-Shifting is a method whereby a vessel is completely built outside the assembly area, moved onto a skid rail, and launched into the sea. This eliminates the need for the complete construction of a vessel on the skid rail, leading to improved work efficiency, productivity, and cost-efficiency.

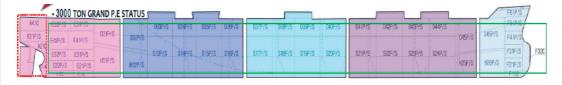
## GTS ( Gripper - Jacks Translift System )

Gripper-Jacks Translift System is designed to move the ships built on-land to the sea by launching it without the use of a dry dock but with the use of balanced gripping force on the ship. GTS is a proprietary technology developed at SUNG-DONG, which enables the movement of super-heavy objects in safe and expedient ways.



#### **Multi Point Loading**

Multi Point Loading is a method whereby various loading points are established on a skid rail so as to simultaneously divide a vessel into various groups according to those points. Without requiring additional equipment, this method allows groups of blocks to be loaded according to their completion order without having to start from the stern, and to be easily moved and joined together, thereby facilitating the process dramatically.



#### **Self Driving Bogie System**

The Self Driving Bogie System makes it possible to launch a ship on its own without the help of other equipment by installing hydraulic motors and decelerators on the bogie train. In addition to dramatically reducing the launching time of ships, it is an innovative system that makes it possible to build large containerships and offshore plants

## SOx scrubber for Marine Diesel Engines

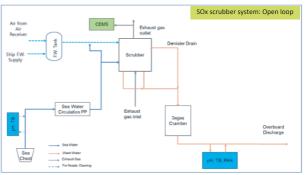
STI started its own SOx Scrubber development?-from 2006, which is called as Cyclone SOx Scrubber System. This system has a very high?mixing efficiency of exhaust gas and spraying water using various sea water spray methods and cyclone technology. As a result, SOx Scrubbers from STI is compact and light-weight so that it can replace existing pipe sections or silencer units.

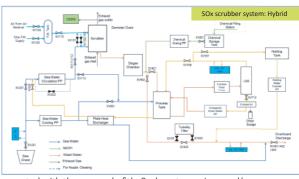
#### **CUSTOMIZATION:**

- \* Open Loop and/or Closed Loop, and their Hybrid operation
- \* Washwater treatment as per the IMO MEPC auidelines
- \* Control sustem redundancu
- \* Historian server to store operation data for over 5 uears
- \* Automatic operation? as per the SOx/CO2 ratio

#### **CHARACTERISTICS:**

- \* No need to setup additional scrubber tower
- \* No need for 'bypass' line towards the scrubbers
- \* Weight addition by the scrubber system can be compensated with the removal of the?exhaust gas pipes and/or silencers
- \* Can be applied on most of the retrofit projects without making any major changes to the ship structure.





## **EDUCATION R&D VISION**

## The Technology Innovation & Development Section

VERKAAN, contributes to the enhancement of customer satisfaction level and service quality by expanding the scope of EP&CM business and steadily developing application technologies to strengthen the technical power at work site. Also, the technology research center strives to achieve the mid-term management strategy, Vision 2022 of Verkaan Engineering through R&D activities such as perform the national research & development project to create businesses as a new growth engine based on key technologies.

VERKAAN is specialized in Evaluation, Feasibility & Preparation of Marine, Oil and Energy plans of Iran-Korea team for Busan and Caspian Sea offices using our specific software, COMFAR.

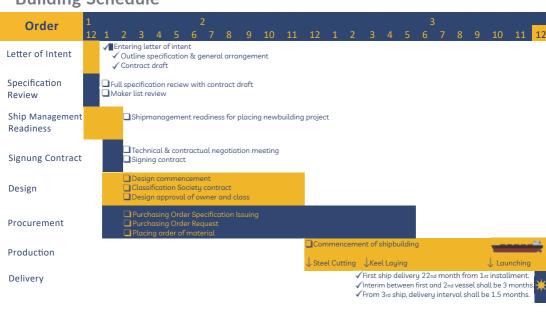


LNG Carrier (6+1) Negotiation Meeting - 2015 Seoul

## Marketing

Our core team, is available to you for placing order in all kinds of cargo vessels, tankers, bulk carriers, LNG and LPG in large and small sizes, MR size, Afra Max, Pana Max, VLCC and ULCC and Also, in purchasing and repairs, our experienced team will help you with the best quality and the lowest price with the world standard and technical expertise of the ship.

### **Building Schedule**



## **Project Team Leaders**



**Lee, Jongho**Project Leader

-Samsung Heavy Industries -Sungdong Shipbuilding -Technip Shell FLNG -Ocean rig Drillship -Statoil Johan Sverdrup -Zvezda Russia / Aframax



**Tae Kyu**Senior Designer,

-Kangnam & Hyundai Heavy -Yantai Raffles Offshores -STX Dalian Offshores -Samsung Heavy Industries -DSME





Park, Su Gon

-Conoco / Saipem Drill Ship -South Pars Gas, SPD1/2 SPP -Total Dalia FPSO -Modec Oveng / Okume -Total FPSO / Songa Semi Rig -Shell FLNG/Zvezda Planning



Kwak, Heung Chul Engineering

-Samsung Heavy Industries/Hull -SHI / P.Technique -E & Tech/ P. Technique -SoTECH / P. Technique -Statoil Johan Sverdrup -Zvezda/P. Technique Chief Eng



Young Kyu
Head of Design

-DSME Production Technique -Sungdong Shipbuilding, shipyard construction -COSCO/Production Technology -B & P Engineering ( Chief)



Son, Yu Seung Procurement

-Shinyong Shipyard -Sungdong Shipbuilding -A-one Inspection -Samwoo ENG -KJMS -Zvezda Aframax/MR tanker



**Jung, Hwiyoung** General Affair

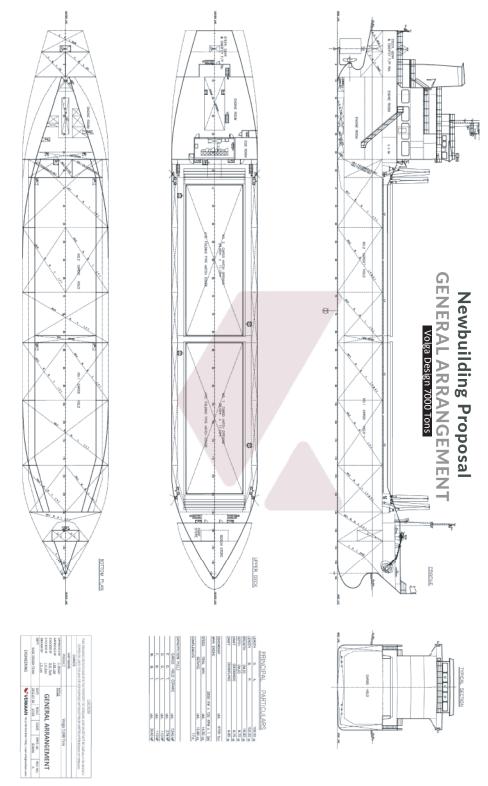
-Sungdong Industrial -Sungdong Heavy Industries -Sungdong Shipbuilding -Audit & Administration



Kim, Sung Ha

Senior Designer

-Samsung Heavy Industries -Shuttle, Container, FPSO -Zvezda/Condtruction planning -Production & Execution -Production & Execution Manger -Aratic Shuttle & COT project



### **ABOUT US**



Mr. HONGJUN JUNG CHAIRMAN / FOUNDER

VERKAAN is specialized in Marine Industry, Trade Industry, Automotive Industry and some other exclusive Manufacturing Industry, such as shipping container, shipbuilding equipment and blocks.

In 2010, International Verkaan Company was founded by three members, Mr. HongJun Jung, who established and found SUNGDONG SHIPBUILDING & MARINE ENGINEERING, which was ranked as the world top 10 shipbuilder in South Korea. Mr. ByeongHo Gye, who used to be an International Managing Director of SUNGDONG, and Dr. Javad Omati, who completed doctoral programs in Pusan National University in South Korea.

VERKAAN is legally registered in Middle East region and actively participates in the business with Asia clients

#### **OUR MISSION AND VISION**

To build strong relationship with clients, we developed customer loyalty program through continuous communication, ensuring quality, and maximize customer satisfaction by optimizing the processes and stages in the new technology.

Our challenges have no limits. We will challenge ourselves to our limits.

Dr. OMATI / CEO







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