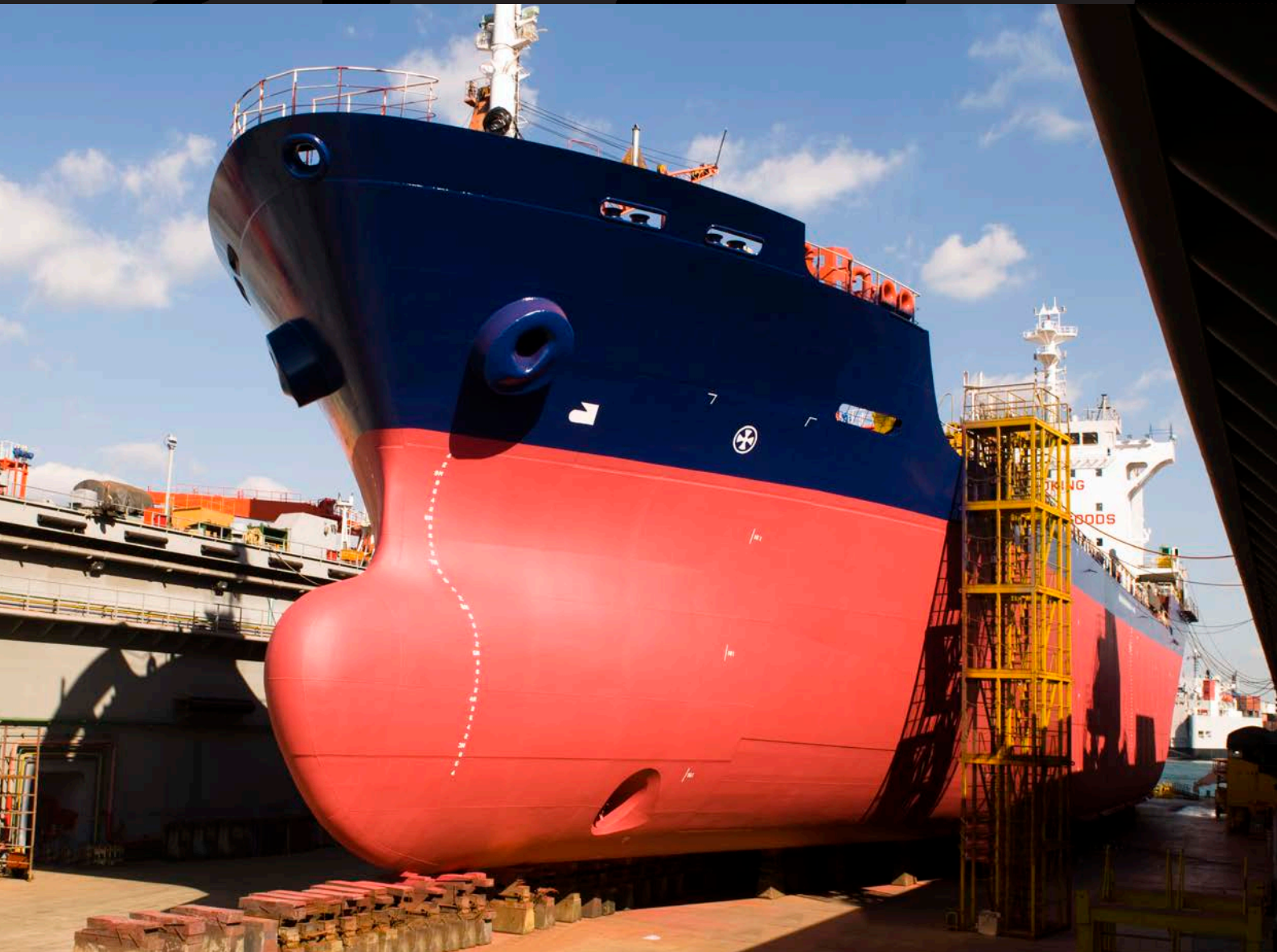


alma

act/cut for shipbuilding

CAD/CAM for sheet metal cutting



The reference CAM solution for nesting and sheet metal cutting in the shipbuilding and marine industry

act/cut

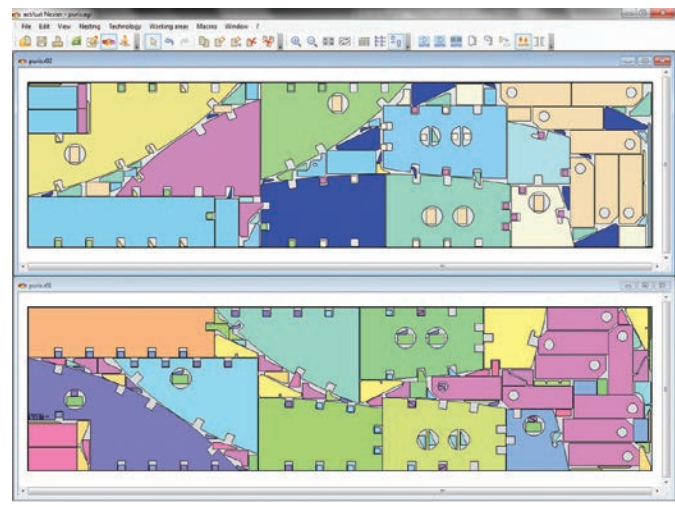
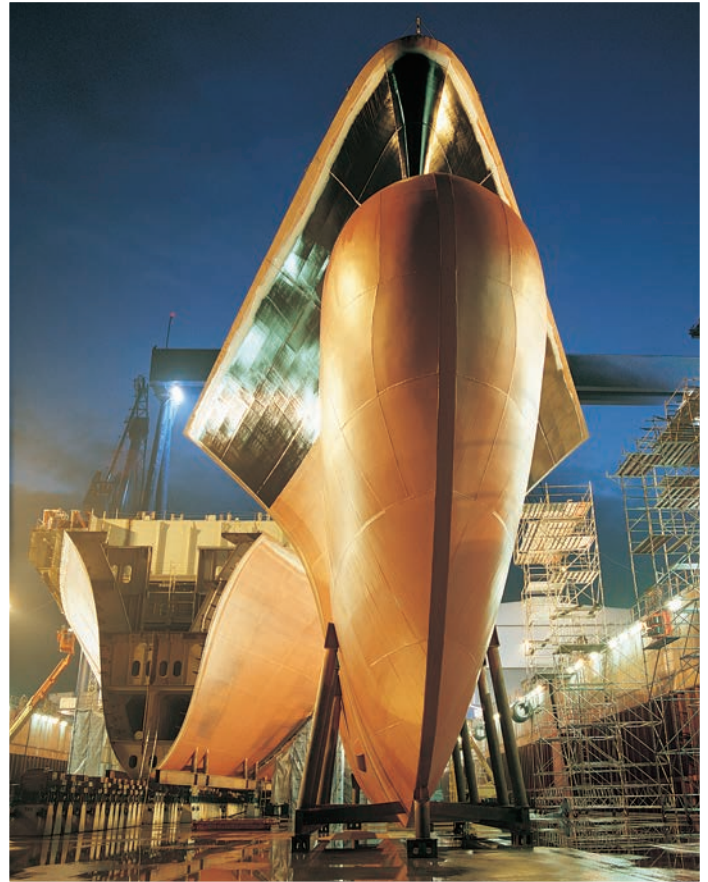
The most productive CAM software for sheet metal cutting

Sheet metal cutting is a key link in the shipyards manufacturing process. It can become either a bottleneck hampering the whole production, or a huge productivity and profit booster.

To be really efficient, the programming system for sheet metal cutting machines must perfectly answer shipyard necessities. It must:

- Manage the plasma cutting and oxy-cutting technologies as well as all the specific processes used in the shipbuilding industry.
- Fit in a continuous workflow from product design (CAD-PLM systems), to the production management and ERPs and to the manufacturing process (machines).
- Reduce to a minimum the necessary preparation and production kick-off time as well as the machine's cycle time.
- Contribute to maximizing material use by optimizing nesting.

Thanks to its unequalled expertise of sheet metal CAM and to its 30 year shipbuilding industrial experience, Alma is fully equipped to deal with these criteria. The "act/cut for shipbuilding" solution is an unrivaled source of productivity for all shipyards integrating sheet metal cutting and marking.



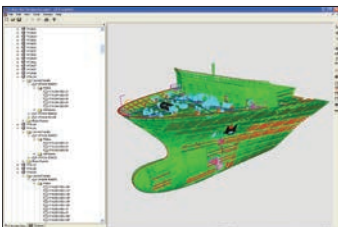
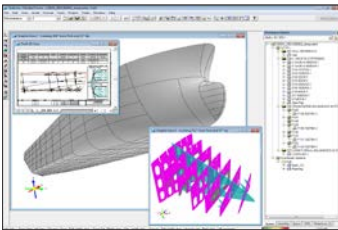
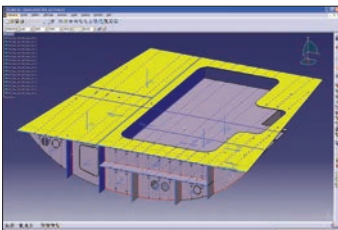
act/cut benefits:

- Optimization of the machines technological potential.
- Reduction of preparation and programming times.
- Saving of material.
- Reduction of cycle times and increase in machines productivity.
- Reduction of costs related to machine consumables.
- Increase in the quality of produced parts.
- Improvement of the workshop's organization.
- Improvement of production's response time.

“ With the aid of act/cut, 21 man-hour savings per block and 3 % more savings on plate material costs is attained using automatic nesting. In addition, the usage and stock management of remnant plates further saves plate resources, production time, and costs. ”

Stalin P. Ybiernas - Keppel Singmarine Philippines

Key features



Integration with CAD enables the extraction of geometric files and the preparation of elementary parts, to make them ready for machining.

A complete, craft-oriented solution for cutting machine programming (plasma, oxy-cutting, etc.).

Integration of all shipbuilding specific functions: bevel cutting management, symmetrical dual sheet cutting, management of the various marking and sanding processes, marking of alphanumeric texts, etc.

Integrated powerful optimization tools (nesting, tool path calculation).

A peerless, highly capable, nesting module (flexible, fast, efficient).

Full management of off-cut and remnant sheets.

Full automation capabilities.

Integration with CAD-PLM systems and more specifically with shipyard-dedicated solutions (Catia, SmartMarine, Tribon M3). It fully manages geometrical file extraction and part preparation before machining: removal of lower face markings, automatic marking of the chamfers along the edges, automatic marking of part reference, repositioning of misplaced texts, etc.

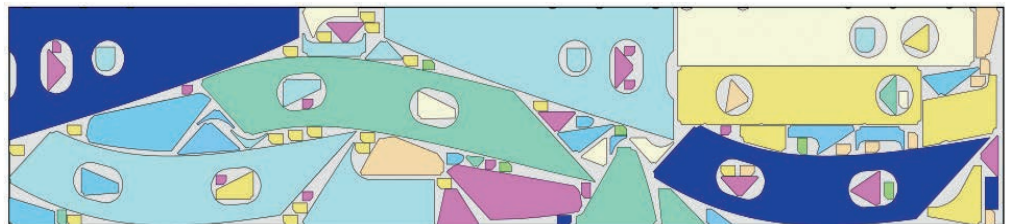
Integration with ERP: management of parts to produce, sheet and remnant sheet management, automatic creation of launching orders according to the machines' characteristics, forwarding of management data regarding cutting operations.

Software organization similar to yard organization (working block by block, management of identical ships, naming conventions of NC files, etc.).

Pre-nesting option to optimize sheet purchase according to nesting results.

An open and customizable system (data import/export, workshop documents, etc.).

Possible integration of other cutting or machining processes (bar cutting, robot welding, etc.).

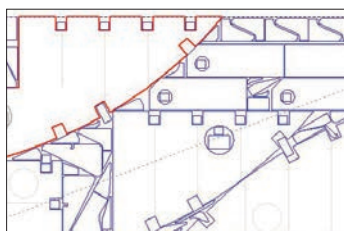
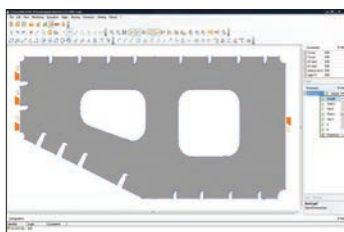


Alma's in-depth knowledge of shipbuilding specifications enables act/cut to meet both our requirements and our methodology, working by blocks or integrating with our production management system, for example, in addition to the power of nesting and tool path optimization.

Frank Rauchenecker - Volkswerft Stralsund (P+S WERFTEN GmbH)



A solution perfectly adapted to plasma cutting and oxy-cutting within shipyards



Strong performance of automatic nesting for a single torch, thanks to the six powerful computation algorithms which work in combination to calculate the best result.

Multi-torch nesting available either in automatic or interactive mode (with the calculation of the smallest possible gap between the torches, smaller than the height of parts which may be embedded with themselves), including numerous multi-torch nesting strategies according to machine capacities and to production needs.

Management of symmetrical dual sheet cutting.

Management of programmable bevel heads, automatically preparing the program: computing the pass sequence and offsets, automatically generating the reconfiguration loops and overall profile to take into account the maximum bulk of the part in the nesting, assigning cutting conditions according to the material, thickness and bevel angle combination.

Sheet thermal deformations are taken into account thanks to various features: parts cut out in several passes, specific sequences destined to spread the heat on the sheet...

The number of piercings can be limited in several ways: continuous cutting, chain cutting, common cut between two parts.

Skeleton cutting to facilitate the evacuation of the remnant.

Optimized management of remnant sheets and off-cuts of any shape.

Management of all the processes that can be combined with oxy-cutting and plasma cutting: piercing systems, marking systems (zinc powder, needle, stylus, alphanumerical marking by ink jet or plasma, etc.), sanding systems...

Management of the tags required to hold cut out doors to the sheet.

Height control management during cutting (beveled or straight).

Lower face machining, if any, such as markings.

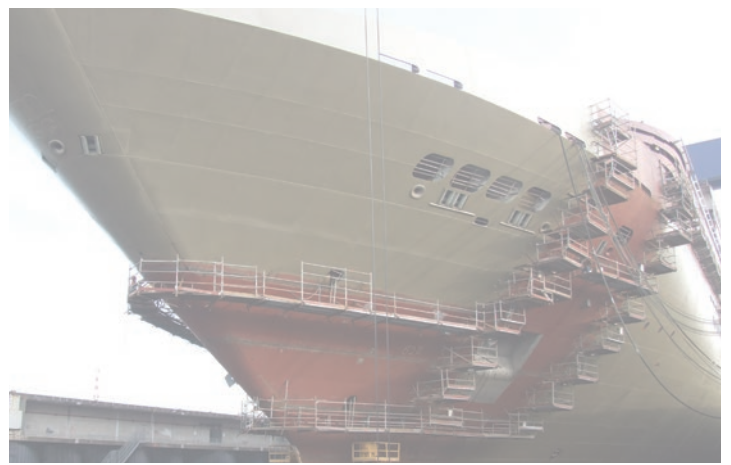
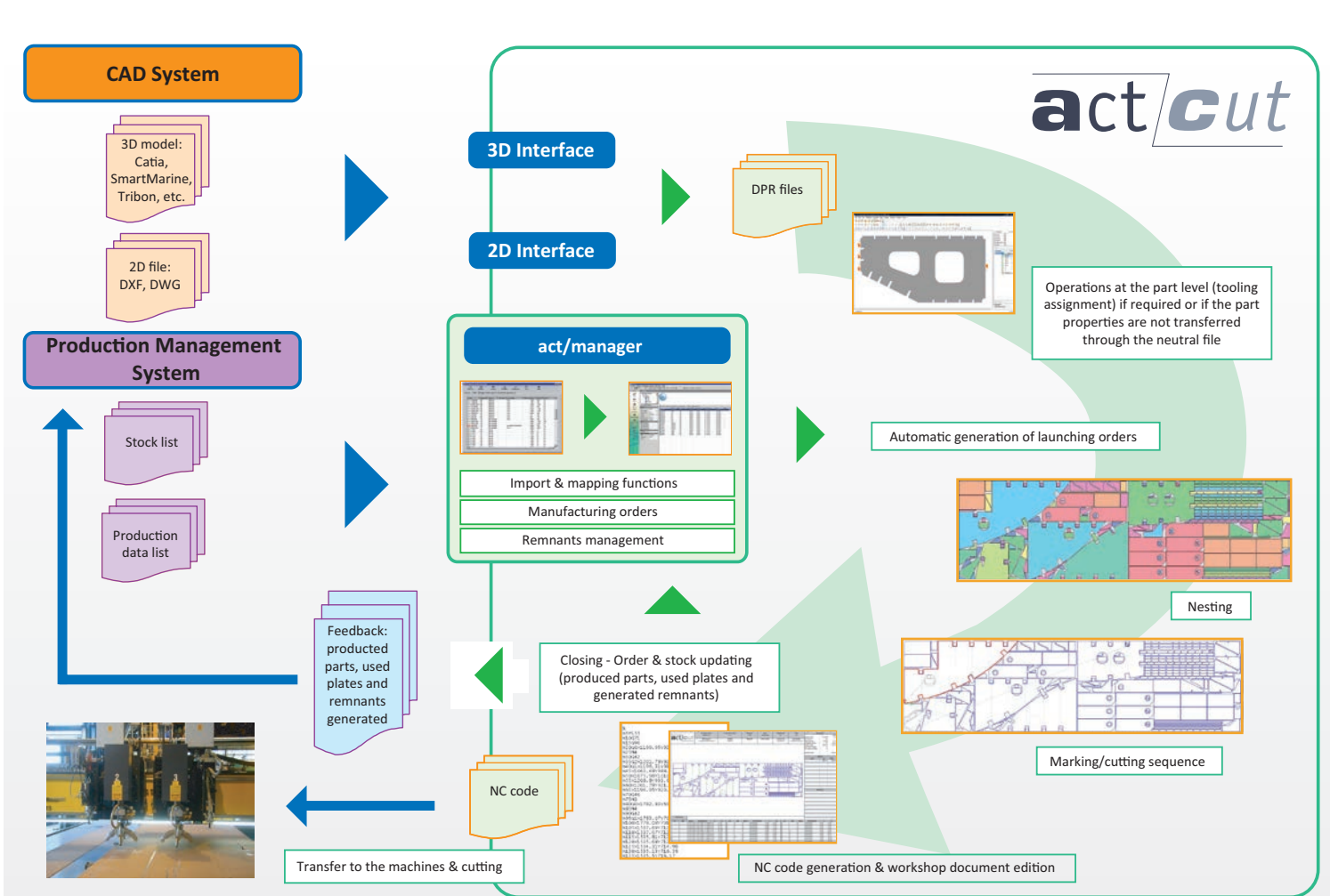
Piloting specific machines (Esab plane panels, Messer, etc.), pseudo parallel cut, etc.

NC files automatic generation (post-processing) according to the machine's capabilities (max. thickness, bevels availability, etc.).

“ With the setting up of our new ERP, we intend to streamline our nesting processes and harmonize our CAM tool range. Using act/cut as our single CAM tool enables us to do so. This solution has several benefits: simplification of the communication between the ERP and act/cut, operators versatility, possibility to switch manufacturing orders from a workshop to another, easier maintenance and support.

Yann Crépeau - STX France ”

An integrated process between CAD, Production Management and sheet metal cutting



“ The reactivity and strong support quality of Alma enabled us to integrate their solution to our production system and processes, deploy it and use it faster than expected. Thanks to Alma, we managed to reduce by 3 the nesting programming time. While maintaining a strong reliability in the nesting results, reaching averages of almost 93% of efficiency thanks to the power of act/cut’s automatic nesting. ”

Wang Ru Chuan - Guangzhou Wenchong Shipyard Co., Ltd.

A leading CAD/CAM software company with unrivaled expertise in the marine industry



Alma, a leading sheet metal CAD/CAM software developer, has been active in the shipbuilding and marine industry for over 30 years. Saint-Nazaire's Chantiers de l'Atlantique (now STX France) actively contributed to the first of Alma's developments. They have been using Alma software since the early eighties, and it was used to build the ocean liner "Sovereign of the Seas". Since then, Alma has accumulated an unrivaled expertise within the field and equips numerous ship, and offshore platform construction yards. Alma's "act/cut for shipbuilding" is a vital instrument for both the shipbuilding and sheet metal fluid jet cutting fields.

Thanks to its subsidiaries (Brazil, China, Germany, Italy, USA) and its distribution network, Alma is represented in many countries.

An alliance of expertise and close partnership with its clients:

- Unrivaled expertise of CAM for cutting, in depth knowledge of the cutting craft and of all technological processes used in shipyards and offshore platform yards.
- Established partnerships with strategic shipyard suppliers (CAD-PLM software developers, ERP solutions integrators, design and studies subcontractor service machine manufacturers).
- Quality-driven technical partnership built to last, from draft specifications draft to post-installation support.
- Close ties with clients thanks to a strong international presence (subsidiaries and dedicated distributors).

They have chosen Alma

Akerboom (NL)	L&T Shipbuilding (IN)
Bharati Shipyards (IND)	Lürssen Werft (DE)
Blohm + Voss (DE)	Manche Industrie Marine (FR)
Skipshelling Blom (NL)	Mazagon Dock Limited (IN)
CSSC Guangzhou Huangpu Shipbuilding (CN)	Meyer Werft (DE)
Chantiers Merré (FR)	Mitsubishi Heavy Industries (JP)
Constructions Mécaniques de Normandie (FR)	Nordic Yards (DE)
COSCO Shipyard Group (CN)	Nuovo Arsenal Cartubi (IT)
DaeKyung Industrial (KR)	Öswag Werft (AT)
DCNS (FR)	OSX Brasil (BR)
DongSung (KR)	Petrovietnam Marine Shipyard (VN)
Ecovix / Engevix (BR)	Projemar (BR)
Flensburger Shipyards (DE)	P+S Werten (DE)
Goa Shipyard (IN)	RMK Marine (TR)
Guangzhou Wenchong Shipyard (CN)	Scheepswerf Gebr. Kooiman (NL)
Garden Reach Shipbuilders & Engineers (IN)	Sina (KR)
Itaguaí Construções Navais (BR)	Shanghai Shipyard (CN)
Jiangsu Modern Shipbuilding Technology (CN)	Shin Hyun (KR)
Keppel Fels (SG)	Socarenam (FR)
Keppel Shipyard (SG)	STX France (FR)
Keppel Singmarine (PH, SG)	Wuhu Xinlian Shipbuilding (CN)
Linssen Yachts (NL)	Yantai CIMC Raffles (CN)



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