

对船舶每个学科、结构和分布系统，只需约1至2周就能学有所成
It takes about one to two weeks to become productive in each discipline of hull, structure and distributive systems



智能设计

新软件发布旨在为船舶设计者提供直观制图的方法

Intelligent design

A new software release aims to provide intuitive drawing capabilities for vessel designers

海

上项目需要数千份文件，为工人提供明确的、最新的建造信息。为尽可能地缩短建造时间，设计师们在产品模型全面完成或确定最后变更前，开始绘制管道图、布置图和装备图。设计师们在绘制和维护建造图纸时，通常需要花费数千个小时。

通过使用ShipConstructor三维船舶建筑设计软件，建造图纸能够智能连接至3D产品数据模型。软件将过时的图纸或不一致的地方告知设计师，使设计师能够在更新所有修改部件、项目信息和材料清单期间，自动更新过时图纸。

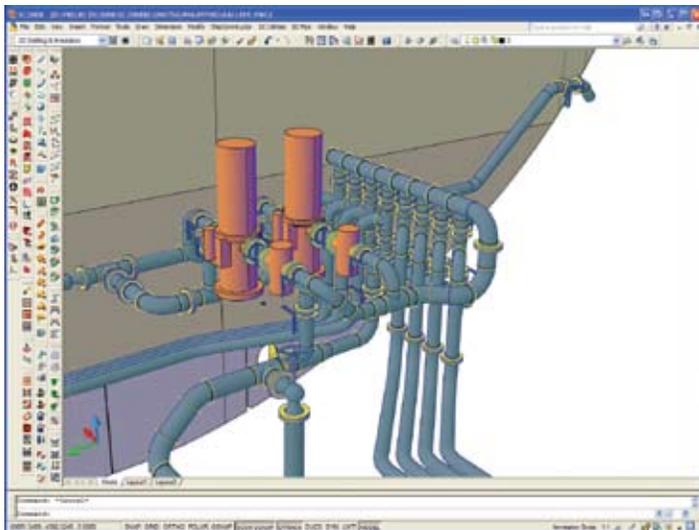
作为该过程的一部分，ShipConstructor提供模型发生变更的部件的详细信息。这种信息有助于建造图纸最终的变更，并有助于确保潜在的、代价巨大的错误不会出现在建造阶段。

从设计部门至建造车间，ShipConstructor都能提供唯一来源的数据，将船舶设计师的构思转化为一艘船舶或近海结构。富含数据的产品模型为文件提供了清晰的建造和项目管理信息，包括嵌套图纸和NC数控代码、组装图、管道图、外形图、布置图和建造报告。据它的开发人员称，ShipConstructor的应用程序设计界面，使定制应用程序非常简单，它将企业各个系统严密地整合起来，包括销售、购买和核算，以及进度安排和规划，乃至设计分析以及产品使用寿命管理。

由于ShipConstructor相对易学——对船舶每个学科、结构和分布系统，只需约1至2周就能学有所成；学员能够通过开发商的网站进行在线培训，公司也能够根据客户自身的项目进行在线培训。这些培训方案，有助于满足国际社会对经验丰富、博学多识的海事和造船厂人员的需要——ShipConstructor如是说。

目前，全世界六大洲共有300多个组织持有6000个ShipConstructor软件许可证，这些组织包括Austal船舶公司(Austal Ships)、Vripack游艇公司(Vripack Yachting International)、迪拜干船坞公司(Dubai Drydocks)、Northrop Grumman舰船系统部(Northrop Grumman Ship Systems)和美国通用动力集团公司(General Dynamics)。

在产品模型全部完成前，设计者开始绘制管路图、布置图和装配图
Designers start spool, arrangement and assembly drawings well before the product model is fully completed



A marine project requires thousands of documents to provide workers with unambiguous, up-to-date production information. To minimise time to production, designers start spool, arrangement and assembly drawings well before the product model is fully completed or the last change requests have been incorporated. Designers often spend thousands of hours generating and maintaining production drawings.

With ShipConstructor, production drawings are intelligently linked to the 3D product data model and the software informs designers about obsolete drawings or clashes. The software enables the designer to initiate an automatic update of the obsolete drawing, during which all modified parts, project information and bills of material are updated.

As part of this process, ShipConstructor provides detailed information about the parts that were changed in the model. This information facilitates final changes to the production drawing and helps to ensure that potentially costly errors do not reach production.

From design office to production floor, ShipConstructor provides a single source of data to transform a naval architect's vision into a ship or offshore structure. The data-rich product model provides documentation for clear production or project management, including nest drawings and NC-code, assembly drawings, pipe spools, profile plots, arrangement drawings and production reports. According to its developer, ShipConstructor's Application Programming Interface makes it simple to create custom applications that provide tight integration with enterprise systems including sales, purchasing and accounting; scheduling and planning; engineering analysis; and product lifecycle management.

Because ShipConstructor is relatively easy to learn – it takes about one to two weeks to become productive in each discipline of hull, structure and distributive systems – students can train online through the developer's website, or the company can provide on-site training based on the client's own project. These training options are helping to fill the international need for skilled and knowledgeable marine and shipyard staff, says ShipConstructor.

Over 6,000 ShipConstructor software licenses are used on six continents by more than 300 organisations including Austal Ships, Vripack Yachting International, Dubai Drydocks, Northrop Grumman Ship Systems and General Dynamics.

DP3 pipelay vessel

A-System of Korea chose ShipConstructor to design and construct a DP3 class pipelay vessel for Saipem to be built at Yantai Raffles Shipyard. The vessel is 290m long with a breadth of 39m and will support deepwater developments worldwide. The ice strengthened new build

DP3铺管船

A-System韩国软件开发公司选择ShipConstructor在烟台Raffles船厂为Saipem设计并建造一个DP3级铺管船。该船长290米，宽39米，将支持全世界范围的深水开发。破冰新结构将装备一台600吨的桅杆起重机、两台50吨的铺管龙门起重机，而且它将能容纳538人。ShipConstructor将被应用于绘制船舶的船体结构以及舾装的零件图和装配图。

杂货船

12500吨的Tay Son船在Vinashin HaLog造船厂下水，这标志着越南海事组织订购的8艘船中的第一艘完工。该船造价超过1千万美元(合人民币7500万)，其长136.4米，跨度为20.2米，吃水深度为11.3米。HaLong使用ShipConstructor软件，根据其需要满足的规范，按时并在预算内完成了Tay Son的建造。

ShipConstructor软件基于AutoCAD的3D船体表面建模系统，用于船体表面的放样和修正，从而使表面非常光滑，偏移量非常小。结构模块用于套样和3D装配图内部结构的建模和细化。HaLong承认，这个模块帮助他们建造了高精度的Tay Son结构。利用ShipConstructor，HaLong减少了45%至50%的制造时间，并且节约了30%至35%的建造成本。

will be equipped with a 600 tonne mast crane, two 55 tonne pipe handling gantry cranes and it will accommodate 538 people. ShipConstructor will be used to develop detail and shop drawings for the ship's hull structure and outfitting.

General Cargo vessel

The launch of the Tay Son, a 12,500 tonne ship, at Vinashin HaLog Shipyard marked the completion of the first of eight ships ordered by the Vietnam Maritime Corporation. Built at a cost of over USD 10m (RMB 75m), the vessel measures 136.4m in length, spans 20.2m, and has a draught of 11.3m. HaLong used ShipConstructor software to produce the Tay Son to exacting specifications on time and under budget.

ShipConstructor's AutoCAD-based 3D Hull Surface Modeling was used to loft and fair the hull surface, resulting in a smooth surface and an offset table of high quality. The structure module was used to model and detail the internal structure for nesting and 3D assembly drawings. HaLong credits this module for helping them to produce the Tay Son's structure with high accuracy. By implementing ShipConstructor, HaLong



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Workboat 作业船



Commercial 商船



Ferry 渡轮



Rig 钻井平台



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Courtesy General Dynamics Team: Austal Ships Pty. Ltd., Australia and Austal Ships, USA; Bender Shipbuilding & Repair Co., Inc., USA and Guido Perla & Associates Inc., USA; Bodewes Shipyards B.V., The Netherlands; Genoa Design International, Canada and Marinette Marine Corp., USA; J. Ray McDermott Inc., USA & J. Ray McDermott Far East, Inc., Indonesia; Vripack Yachting International Naval Architects B.V., The Netherlands.



中东

据软件公司称，在中东地区，ShipConstructor软件已经成为在急速增长的近海船舶建造行业中相互竞争的建造者们首选的设计和建造的规范软件。

Lamprell能源公司是中东地区经验最丰富和最成功的升降式钻井油台的整修公司之一，它选择ShipConstructor，辅助波斯湾（世界发展最快的升降式钻井平台市场）的LeTourneau超级116E“超高级”升降式钻井平台的设计。Lamprell在海上工业中有30多年全业务升降式钻井平台整修的经营经验；它相信，ShipConstructor软件在设计和建造其首个新建设施的可靠性、易用性和参数优势。多达四个钻井平台的全包费为1.68亿美元（合人民币12.6亿）——不包括钻井管道和操作工具。

超级M2升降式钻井平台

总部位于中东的海上工业服务公司 (Maritime Industrial Services) 在最近获得了建造5个超级M2升降式钻井平台的合同（这些钻井平台要求在常用设备组合和设计变更方面有显著改进，以满足客户的要求），他们采用了ShipConstructor软件。SC 2008将用于设计挪威Mosvold Jackup A/S的两个钻井平台、KASM2-Petrodata的一个以及Orion Drilling的两个项目。每个钻井平台都价值1.578亿美元（合人民币12亿）。

化学品/成品油轮

加拿大的Genoa Design International和Aker Marine都使用ShipConstructor软件设计并建造首个在美国建造的188米普通结构规定的油轮。为总部位于得克萨斯州的AHL船运公司建造的三个49000 DWT化学品/成品油轮，计划将于2009年末长期租给美国的Shell Trading。

“Genoa Design承认，这些大项目完全超出了客户的期望。这就是为什么ShipConstructor是我们首选的建造设计软件的理由。” Genoa Design International董事长Leonard Pecore说，“我们与ShipConstructor的合作历史悠久，坚信该软件能够支持我们的创新项目。”

据ShipConstructor称，它的最新版本ShipConstructor 2008是市场上最直观的、基于AutoCAD的、三维船舶建模和规划制造的软件系统。它的性能包括：其与许多其它行业领先软件（例如Navisworks、Inventor、MaxSurf、Napa和Rhino）的完美兼容，以及并行的建造工程和产品数据管理。

experienced a 45–50 per cent reduction in production time and 30 to 35 per cent savings in production costs.

Middle East

According to the software company, in the Middle East ShipConstructor is established as the design and production planning software of choice for builders competing in the burgeoning offshore shipbuilding industry.

Lamprell Energy, one of the most experienced and successful jackup rig refurbishment companies in the Middle East, chose ShipConstructor to assist in the design and development of a LeTourneau Super 116E “ultra-premium” class jackup drilling rig for the Arabian Gulf – the world’s fastest growing jackup market. After more than 30 years serving the offshore industry with full-service jackup rig refurbishment, Lamprell trusts the reliability, ease-of-use and parametric advantages of ShipConstructor to design and construct its first new-build. The turnkey price of up to four rigs is USD 168m (RMB 1.26bn), excluding drillpipe and handling tools.

Super M2 Jackup rigs

When Middle East-based Maritime Industrial Services Company recently won contracts to build five Super M2 jackup rigs requiring significant improvements in the usual equipment packages and design modifications to meet client specifications, ShipConstructor was brought on board. SC 2008 will be used to design two of the rigs for Mosvold Jackup A/S in Norway, one for KASM2-Petrodata and two for Orion Drilling. Each rig is valued at USD 157.8m (RMB 1.2bn)

Chemical/product tanker

Genoa Design International and Aker Marine of Canada are using ShipConstructor to design and build the first 188m common structural rules tankers built in the United States. The three 49,000 DWT chemical/product tankers being built for Texas-based AHL Shipping Company are scheduled to go on long-term time charter to Shell Trading USA by late 2009.

“Genoa Design is absolutely committed to exceeding our client’s expectations on these large projects. That’s why ShipConstructor is our production design software of choice,” says Leonard Pecore, president of Genoa Design International. “We have a long history with ShipConstructor and trust unequivocally in the software’s ability to support our innovative projects.”

According to ShipConstructor, its latest release, ShipConstructor 2008 is the most intuitive AutoCAD based three-dimensional ship product modeling and production planning software system on the market. Its capabilities include seamless compatibility with many other leading tools like Navisworks, Inventor, MaxSurf, Napa and Rhino as well as concurrent production engineering and product data management. ■



First Class tankers: a new perspective



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