experience No 04



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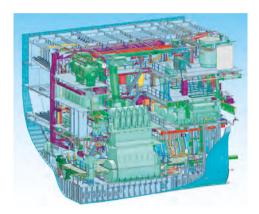
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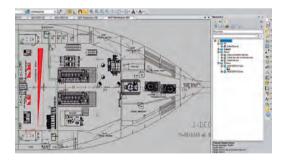
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CADMATIC Marine eXperience 04

Linnankatu 52, 20100 Turku, Finland, tel. +358 2 412 4500, info@cadmatic.com, www.cadmatic.com. The CADMATIC Marine eXperience Magazine Marine is published twice a year by CADMATIC Oy. Cover picture: eBrowser model image of National Geographic Endurance courtesy of Ulstein Verft. CADMATIC believes that all information provided in this publication is correct at the time of printing. CADMATIC is not responsible for any inadvertent errors.

Working from home - efficient and seamless work sharing

The Covid-19 pandemic has brought unprecedented challenges to the business world. When countries went into hard lockdown in March of this year, several companies were forced to temporarily close business operations and many of our customers asked employees to start working from home.



At CADMATIC, we realized that our standard licencing agreement needed to be amended so that our customers and their subcontractors could use CADMATIC software from home. As such, the licenses are temporarily not connected to geographical locations.

For almost 2 decades, the CADMATIC work sharing or distributed design system has been used effectively by our clients to share work between teams located in different locations across the globe. The main goal has been to access the most efficient design resources available. During the pandemic, it has also proved invaluable to keep designers working efficiently on design projects from home. I am happy to hear that the transition to working from home has been seamless in this regard at least, despite its many other challenges.

It will be interesting to see whether working from home will become commonplace after the pandemic, or whether we will revert

to business as usual. As a software development company, we have managed to weather the storm so far. Fortunately, we can provide our customers with the same levels of support regardless where our employees are located.

I am happy to see that the Marine business world did not come to a complete standstill during the pandemic. Ulstein Verft in Norway, for example, managed to deliver the eye-catching National Geographic Endurance polar expedition cruise ship to Lindblad Expeditions Holdings, Inc. in mid-March. CADMATIC was used for the basic and detailed design of the vessel's hull and outfitting. See the writeup about the Endurance in this edition of the magazine.

We also have an article about Pella Sietas shipyard in Hamburg Germany, one of the longest-standing CADMATIC clients that has used our software for more than 25 years. They are currently using CADMATIC, amongst others, for the design of a massive icebreaker of ice class 7. CADMATIC is used on the project for the vessel's hull class approval, hull and outfitting detail design, the generation of a wide range of production drawings including installation and manufacturing, as well as for the creation of hull and pipe fabrication CAM files.

In this edition, we furthermore highlight some interesting software developments and tools. These include the new Web API interface to PLM and design applications, as well as introductions to CADMATIC Electrical and CADMATIC Draw, which have both been welcome additions to the CADMATIC product family.

I wish you happy reading.

Geert Tepper

Vice President, Marine Industry

Exploring the Arctic in Style

ULSTEIN delivers National Geographic Endurance polar





Ulstein Verft in Norway has delivered the eye-catching National Geographic Endurance polar expedition cruise ship featuring the iconic ULSTEIN X-BOW® design to Lindblad Expeditions Holdings, Inc. The National Geographic Endurance is the first of two sister ships being constructed for Lindblad by Ulstein Verft, CADMATIC software was used for all the basic and detailed design of the vessel's hull and outfitting.

The steel cutting of the vessel was started on 5 January 2018. The vessel was launched on 7 December 2019 and sea trials were successfully conducted on 17 February 2020, after which the final construction phase began. The cruise ship was officially handed over to Lindblad on 16 March 2020.

Passengers on The National Geographic Endurance will be able to access the outside environment from anywhere on the ship.

The National Geographic Endurance is Lindblad Expeditions' first polar newbuild. It features a Polar Class 5 rating, which allows for "year-round operation in medium first-year ice, which may include old ice inclusions". This will enable it to venture far into polar areas. The vessel is named after the Endurance used by the Irish Antarctic explorer Sir Ernest Henry

Shackleton, who led three expeditions to the Antarctic in the early 20th century.

Passengers on the vessel will be able to access the outside environment from anywhere on the ship, while its innovative expedition craft loading system will ensure that they can get ashore quickly and safely to explore the unique arctic environment.

The cruise ship's patented X-BOW® is key to its design; it has a greater displacement volume to distribute the force more evenly across its surface. The powerful wave-slicing action provides a smooth ride in adverse conditions, and even reduces spray on deck for superior observation. This makes the vessel perfectly suited for adventures to far-away places.



More about the ULSTEIN X-BOW®

The ULSTEIN X-BOW® concept was launched in 2005. The X-BOW has a tapered fore ship shape with a different volume distribution as well as sectional angles. The bow pierces small waves and reduces pitching and bow impact loads in bigger seas.

Compared to traditional bulbous bow shapes, the X-BOW® has a greater displacement volume, which distributes the force more evenly across its surface. This enables the ship to remain more stable during poor weather conditions, increas-

ing comfort for passengers and crew alike.

Currently, more than 100 vessels with this bow concept are being constructed or are in operation around the world.

Impressive cruise vessel portfolio

Over the years, ULSTEIN has made a name for itself for innovative designs of offshore and special vessels. The designs gained prominence thanks to the ground-breaking X-BOW® design. In recent times, it has also built up an impressive portfolio of cruise vessel designs and several

expedition cruise vessel construction projects of ULSTEIN designs are currently underway in different locations.

One example of a recent construction is the Greg Mortimer, which was delivered by China Merchants Heavy Industry to SunStone Ships Inc. in 2019. The vessel features the ULSTEIN CX103 design and is operated by Aurora

Expeditions. It was the first expedition vessel to feature the ULSTEIN X-BOW® design.

CADMATIC Hull was used for the generation of basic hull structure class drawings and CADMATIC Outfitting for the design of part of the main equipment of the vessel. The construction of the vessel's sister ship, the Sylvia Earle, is set to be completed in 2021.

The Greg Mortimer, delivered in 2019, was the first expedition vessel to feature the ULSTEIN X-BOW® design.





CADMATIC 3D model image of the National Geographic Endurance.



Berulf Lefdal, Head of Hull Structure at ULSTEIN, has had first-hand experience of how CADMATIC software use has developed at ULSTEIN over the years.

CADMATIC user since 1995

ULSTEIN has been a CADMATIC software user since 1995. According to Børulf Lefdal, Senior Principal Engineer – Head of Hull Structure at ULSTEIN, they started using CADMATIC back then to optimize piping production by creating links between isometric drawings and NC bending machines.

"This was one of the many benefits we achieved by implementing CADMATIC. We also did block drawings and production documents for steel production. It started with detail engineering for hull and machinery (piping), but within a few years we also started designing foundations, steel outfitting and electrical components," says Lefdal.

Currently, ULSTEIN uses
CADMATIC for a wide range of
design disciplines including basic,
detail and some conceptual
design, hull construction, machinery, piping, electrical, steel
outfitting and accommodation
departments of vessels, and
HVAC systems.

Børulf indicates that CADMATIC has many useful features and



powerful and the interface is easy to use."

advantages but feels that the eBrowser deserves special mention.

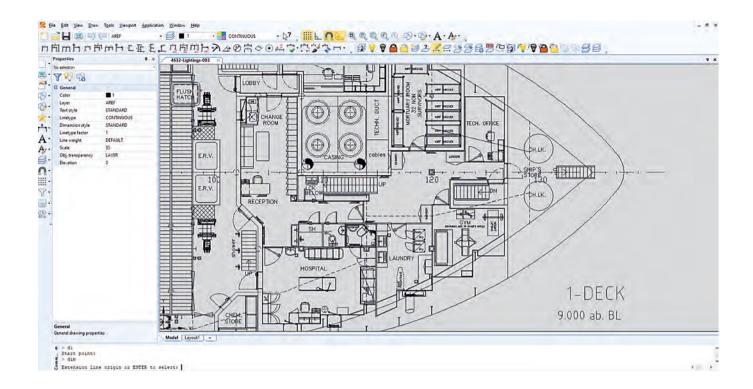
"eBrowser is powerful and the interface is easy to use. It is used throughout the whole concept, basic and detail engineering phase, but also in purchasing, sales and production."

He also indicates that the management of distributed design projects (simultaneous design by design teams in different locations) with the help of the CADMATIC Co-Designer has been important for ULSTEIN.

"The distributed engineering possibilities with the HDX and COS servers has been important. We have set up links with other CADMATIC users such as J&J Marine Design and Solution (Slovakia), Forss Marine (Russia), Niestern

Sander Scheepsbouw BV, and our own company Ulstein Poland," Berulf explains.





Introducing CADMATIC Draw

- 2D Drafting module

CADMATIC Draw is a 2D drafting module for the creation and editing of documents in 2D or 3D with familiar CAD functionality and full DWG, DXF, and IFC compatibility.

CADMATIC Draw's drafting and editing commands are like those used in other software packages, which makes it intuitively easy to use and enables use without training requirements.

It is suitable for editing any type and size of drawing: It can edit both 2D and 3D drawings from any software package and supports a broad range of file formats. Its genuine compatibility unlocks efficient use of old CAD archives and enhances collaboration between project parties. CADMATIC Draw's common templates and user symbol libraries in multi-user environments ensure a high standard of output documentation and easy-to-manage teamwork in projects.

Flexible licensing options

CADMATIC DRAW is available in a flexible range of licensing options to suit different needs.

Workstation licenses are for single computer use and allow the deactivation and activation of the license on another computer. The license verification is done via the network and, therefore, no USB dongle is needed.

Floating network-based licenses are for virtual or local servers with installation on all desired computers. As with workstation licences, no USB dongle is needed. Users can borrow floating network licenses from the server for offline use when needed

Time-based licenses allow users to make use of the license for a specified period without a long-term commitment.

Download trial version:

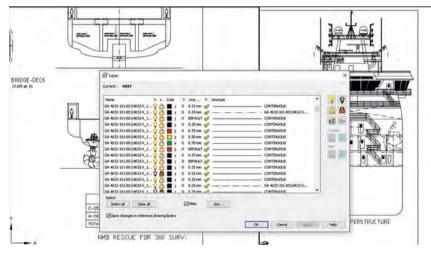


CADMATIC Draw has a familiar interface and AutoCAD keyboard shortcuts. It supports efficient work with layers, blocks and a symbol library for final markup of drawings to ensure consistent documentation.



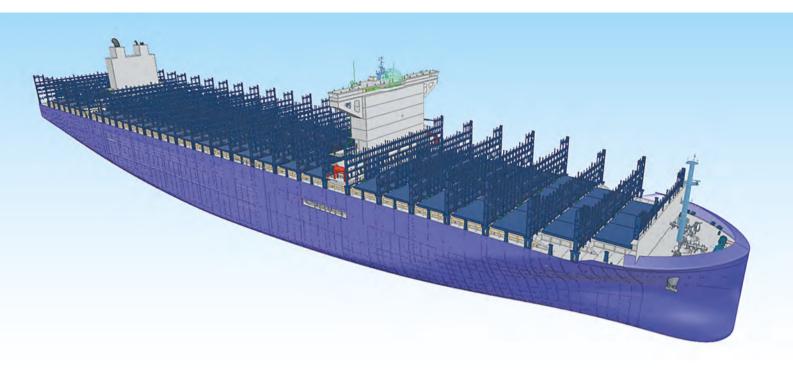
Key facts

- Flexible licensing: for single users, floating network-based licenses and timebased licenses
- Easy to use with all familiar 2D drafting and DWG functionality
- Compatible with all commonly used file formats: DWG, DXF, IFC and many more
- Unified drawing standards and forms with the possibility for user-specific settings



Technical details

- Genuine compatibility with DWG, DXF, IFC and other file formats
- Customizable menus and toolbars, AutoCAD keyboard shortcuts and selection style
- Easy tools to work with symbols, blocks, layers, and layer groups, attributes, dimensions, embedded objects and navigation assistance
- Includes export to Excel of BOM symbols
- Paper size / model space for layouts and viewports
- Import formats: DWG, DXF, IFC 2x3, PDF, BCF, WMF, EMF, BMP, JPEG, PNG, TIFF, GIF
- · Export formats: DWG, DXF, PDF, BCF, BMP, WMF, EMF



SDARI

Integrated 3D design combines the best of both worlds

Established in 1964, the Shanghai Merchant Ship Design and Research Institute (SDARI) is one of the largest ship research and design companies in China. The affiliate of the China State Shipbuilding Corporation Limited has developed more than 1,200 different vessels. It has used CADMATIC software since 2008 for piping design, diagrams, hull design, and communication and is currently testing CADMATIC for duct and cable tray design, as well as the eShare information management solution.

To date, the institute has done the detail design of a 49000 DWT chemical tanker, 2750 TEU container vessel, 120000 DWT bulk carrier, 2500 TEU container vessel, 85000 DWT bulk carrier, 23000 TEU container vessel, and a 65000 DWT semi-submersible ship with CADMATIC. It has also implemented the software in some offshore projects.

SDARI are planning to expand their scope of CADMATIC use.

"In the future, we will use CADMATIC as an important platform for full 3D design implementations and promote

3D model images of a 23000 TEU container vessel designed by SDARI with CADMATIC.



SDARI Vice-President Li Lu has been impressed with how CADMATIC diagrams drive 3D modelling.



the software for all design projects including transportation ships, offshore engineering ships, and cruise liners," says Li Lu, SDARI Vice-President.

Integrated 3D design - NAPA and **CADMATIC**

SDARI has implemented an integrated approach to 3D design where different software packages are applied. In practice, this is realized via collaboration between different design disciplines based on a single data source. In SDARI's

view, different disciplines have divergent requirements and focus areas for software, while the different software packages also have their own strengths.

"Therefore, our strategy is to have the best of both worlds. We combine multiple software packages to realize integrated design. NAPA is powerful in ship general design as well as calculations, while CADMATIC's strengths are piping design, 3D layout, and diagrams. With the help of establishing a complete set of design

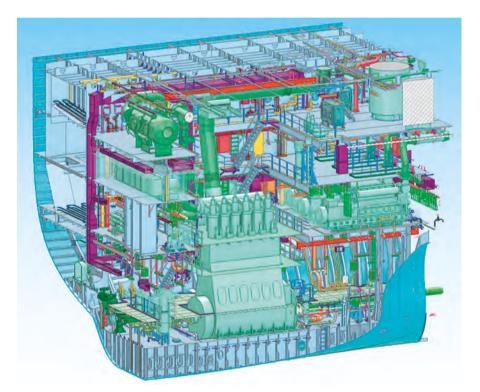
standards, we can integrate models from different software packages," Li Lu explains.

Meeting Chinese production standards

Over the years, SDARI has worked closely with CADMATIC support staff to customize the software to suit SDARI's design modes and habits. These developments have helped to align the institute's standards and 3D design and has further increased the efficiency of 3D design.

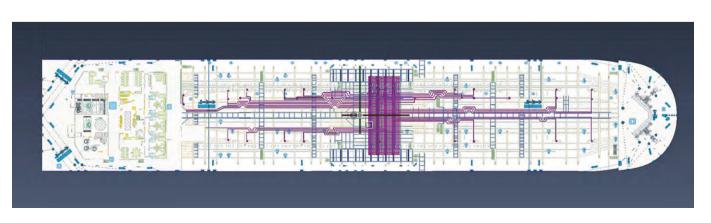






SDARI has completed the production design of the engine room area of a 49000 DWT chemical tanker with CADMATIC.

3D model image of a 49000 DWT chemical tanker designed by SDARI with CADMATIC.



"CADMATIC helps us to avoid mistakes when updating or transferring drawings."

"We believe that after accumulating more experience, improving skills and developing better tools, a complete transition to CADMATIC 3D design will bring SDARI more benefits," Li Lu adds.

The close collaborative relationship between SDARI and CADMATIC continues and is currently focused on implementing the software in production.

SDARI has already used CADMATIC for the production design of the engine room area of a 49000 DWT chemical tanker and the mid-body area of an 85000 DWT bulk carrier. Much collaborative work has been done behind the scenes to meet challenges and to ensure that the production standards of Chinese shipyards are met. This has been successfully achieved for areas such as hull modeling, design coding, nesting, and profile production,

while outer plate expansion, secondary line drawing, and symmetrical modeling still require development.

According to Li Lu, SDARI is collaborating with CADMATIC to meet challenges related to standards for air ducts, structural background drawings and to improve the standard configuration of CADMATIC Hull and Outfitting.

"After solving these remaining challenges, we plan to select suitable projects to implement CADMATIC software more comprehensively for production design," says Li Lu.

Combining 3D modelling and production design

Li Lu has been impressed with the powerful way CADMATIC diagrams drive 3D modeling.

"It enables detailed design to facilitate production design and modeling and combines these two design phases on one platform. Moreover, it avoids mistakes when updating or transferring drawings," Li Lu explains.

Information management tools

The CADMATIC eBrowser project review tool has been in use for several years already at SDARI. It is used to compress models into a single document, after which SDARI employees take it with them to customer meetings.

Li Lu indicates that the eShare information solution is also currently being tested.

"eShare is an excellent platform to easily realize communications and collect feedback among shipyards, design offices and design owners. It provides interfaces to other management systems as well. We look forward to seeing how this tool can add value." Li Lu concludes.

More about SDARI's services

SDARI provides all-round technical services ranging from feasibility studies, conceptual design, basic design, detail design, and production design. SDARI's products include bulk carriers, container vessels, liquid cargo ships, ore carriers, RORO / ROPAX and MPVs, specialized engineering vessels, offshore

support vessels, offshore engineering vessels, offshore platforms, and cruise liners.

The institute boasts a team of more than 500 state-certificated ship design engineers, most of whom are proficient in both 2D and 3D design and skilled in using various advanced software packages.





Who is Pekka Lehtinen?

I am 60 years old and have lived in Turku Finland my whole life. I am technically minded, logical and curious with a B.Sc. in Engineering and an M.Sc. in Economics. I have three adult daughters, one grandson, two-and-a-half-year-old Kaspian, and two more grandchildren on the way later this year.

Once a week. I play badminton and floor ball and I try to do some yoga at least once a week to stay flexible. I am also currently studying a little German and Russian. My house requires constant attention and when I have free time. I read as much as I can.

How and when did you end up at **CADMATIC?**

I started working first for CADMATIC's mother company Elomatic in 2007. At the time, I had my own one-man company working in the IT sector with IBM computers. IBM computers were disappearing gradually, and I had to think about doing something else. I also wanted a change after having done IT work with administrative applications for 20 years. At Elomatic, I worked as a deck outfitting, HVAC, and machinery designer.

At the end of 2014. I noticed an open position for an application specialist at CADMATIC. I decided to apply and was lucky enough to get the job.

What is your current position and what are your most important tasks?

I am an Application Specialist. I have two main tasks, maintaining our Delivery Example Project and working at our help desk where I help our customers to find solutions to any challenges they may have. The Delivery Example Project is the project that is delivered to our customers with the installation

media. It contains a lot of different components and acts as an example to the customer as to how different things should be created and used in a project.

My work is divided about 50/50 between those two tasks and I consider them to be equally important. If I could choose just one, I would say the help desk is the most important.

What are the most challenging aspects of your work?

We have many rather large applications and we do not often get the same questions from customers. It is challenging to remember how all the applications work. You may remember that you did something similar a couple of years ago, but what was it exactly?

Another challenge is giving customers short and clear answers that cannot be misunderstood. Prioritizing is another; I usually have many tasks waiting and I have to decide the order in which tasks should be tackled

What do you like most about vour work?

The possibility to learn more all the time. I could not do the same job from day to day without the possibility to learn more. In this position, I learn new things all the time. It is impossible to know everything about our fast-developing applications. It is also interesting to see how the software evolves and becomes more comprehensive and better all the time.

What have been the biggest changes in your work over recent years?

I have only been in this position for five years, so not that much has changed. One change has been the introduction of communication tools like Microsoft Teams.

Before we used to communicate mostly by email, nowadays mostly with Teams. Another change has been the merging of the customer service organization in the Netherlands and Finland. We are now under the same umbrella and we have regular global meetings via Teams.

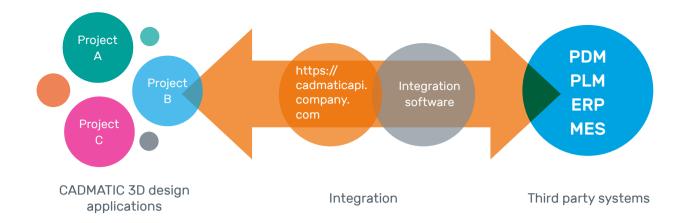
You recently did an exchange to India. How did it come about and what was the experience like?

In April 2019, some colleagues from India trained with us in Finland. I thought it would be a good idea to visit them in India, which they advised would be better after the rainy season. I visited our office in Mumbai for four weeks in November.

It was nice to get to know the Indian culture. The food, traffic. climate, and religion are all very different from Finland. The way of working, however, is quite similar. My Indian colleagues are hardworking, smart, polite, and friendly people. I find it hard sometimes to understand the Indian accent, so I hoped that my understanding would improve during the visit. My colleagues were very patient with me and in the end. I understood them quite well.

How does cooperation with the international offices work?

Although CADMATIC is very international, our activities are still mostly local: Think global, act local. It is still easier to communicate with colleagues that are in the same office. If there are problems that cannot be solved locally, we ask our colleagues in other offices for advice. We also have regular global Microsoft Teams meetings to stay on top of what is happening in our customer service around the world.



CADMATIC Web API

The CADMATIC Web API enables the transfer of project data between CADMATIC applications and Product Lifecycle Management (PLM) or Product Data Management (PDM) systems. It eliminates the gap in information flows between these systems, makes project data more coherent, and reduces repetitive work.

CADMATIC Web API brings all project related data (PDM/PLM/ERP) closer to CADMATIC designers and thus ensures the highest possible design quality and that data is easy to find. In some cases, it may also make it easier to estimate the costs of changes.

CADMATIC Web API supports reading, creating and updating documents, part attribute data, objects with position IDs and

attributes, and document metadata, and fetching document publication files

CADMATIC Web API is a REST API that enables users to create interfaces from third party systems, for example, ERP or PLM/PDM, to and from CADMATIC products, such as CADMATIC Outfitting and 3D Plant Design. CADMATIC Web API is used by a project-specific integration software client that can make simple HTTP requests over the network.

Examples of use cases for the integration

- Linking equipment, valve or instrument purchasing and modelling process with CADMATIC 3D model library
- Management of product breakdown structure
- Documents and 3D model revisioning management
- Status control and progress follow-up
- 3D model export and imports from different CAD systems

Benefits of CADMATIC Web API

- CADMATIC Web API enables querying objects and their attributes from a third party system to CADMATIC design tools. This can be useful for example when a PLM system is used to generate position IDs and manage the attribute data, or the work breakdown structure.
- If the product lifecycle management system contains
- the document name, metadata, and other attributes, they can be used directly in CADMATIC design tools. Documents with correct attributes can be created with CADMATIC Web API.
- CADMATIC Web API allows linking the purchasing or modelling process to the CADMATIC 3D model library.



The two first software releases of 2020 were packed with new features for many products. Standouts include the new Web Api that connects CADMATIC products to PDM/PLM systems as well as the inclusion of the Electrical module for the first time

2020T1 highlights

- The new CADMATIC Web API allows connecting CADMATIC products and PDM/PLM systems and transferring project data through an integration software.
- Outfitting and 3D Plant Design features improved support for VDI and integrated Development Environment for creating CADMATIC scripts among other additions.
- P&ID module can now import and export object attributes using the DEXPI standard.

- Hull Applications sport numerous additions for basic, detailed and production design stages and updates for NAPA interface, XML export and PDMS export.
- Improved usability for users and administrators for Information Management products.

Follow link for detailed 2020T1 Release highlights:



2020T2 highlights

- P&ID supports additional specifications for pipelines and includes a new object type
 - terminator
- Outfitting & 3D Plant Design supports 3D editing permissions based on locations and object types, has additions for cable route management, improved representation of rotated valves in isometrics, and sister project management

- The Shell application for Hull supports additional hole types, dimensioning of curved lines and rotation of 2D items. The Hull Application has numerous additions for production features and Napa Steel import
- The new Hull version that uses the COS system is available for pilot use (not for use in production)
- eBrowser supports visualization of cables and has additions in VR view mode. The new point cloud format significantly speeds up the loading of laser-scanned data in all applications.
- Downloading documents for offline use includes more options, highlighting of document links can be based on any visual style, and custom mark-up types is supported.

Follow link for detailed 2020T2 Release highlights:





Pella Sietas designing massive icebreaker with CADMATIC



Ehlert (Outfitting) and left: Andreas Claus (Hull).

In December 2019. Pella Sietas Shipyard in Hamburg, Germany announced the signing of a contract for the construction of a massive icebreaker of ice class Icebreaker7. The vessel is set to be delivered to ROSMORPORT in Russia in 2023.

CADMATIC software is being used for the vessel's hull class approval, hull and outfitting detail design, the generation of a wide range of production drawings including installation and manufacturing, as well as for the creation of hull and pipe fabrication CAM files. In addition, the CADMATIC eBrowser review tool is used on the project for supervision purposes by the shipyard and the customer.

According to the CADMATIC Administrators, Harry Ehlert

(Outfitting) and Andreas Claus (Hull), at Pella Sietas, the design of the completely new type of vessel and its very high ice class, as well as the related production processes make the project especially challenging. This included the use of hull plates, profiles and pipes according to the Russian classification society.

The 120 m-long icebreaker will be able to sail through ice of up to 2.5 m in thickness thanks to the flat and curved underside of its bow. The vessel will do duty in the Arctic

Ocean as part of ROSMORPORT's large fleet of icebreaking vessels. ROSMORPORT provides icebreaking assistance services to vessels in 15 freezing seaports of the Russian Federation and their approaches as well as vessels in ice fields and other sea waters.

Experienced CADMATIC user

Pella Sietas has used the CADMATIC Hull application for more than 25 years. In 1998, when CADMATIC Hull was already in use, the shipyard started looking for a suitable 3D CAD system. After testing several systems, it was decided

to also start using CADMATIC Outfitting software. The integration with the Hull application and the very easy handling were key factors in this decision

Efficient visualization and navigation in the 3D model

Harry Ehlert is responsible for customizing the administration of the CADMATIC database, as well as the interfaces to Hull, CAM, and ERP. He is satisfied with CADMATIC's performance.

"The main difference between CADMATIC and other software packages is the very efficient visualization and navigation in the 3D model. For outfitting tasks, it is very comfortable, and it makes it easy to keep the focus on project tasks, instead of using the time for navigation. With CADMATIC, you can manage any challenge," says Harry.

A better overview of materials in 3D model

Pella Sietas indicates that CADMATIC has improved the shipyard's work significantly. Features like inline equipment for the basic layout, piping, and isometrics and spools are greatly appreciated.

The Pella Sietas shipyard on the south bank of the Elbe river in Hamburg, Germany.



The software gives the shipyard a better overview of all the materials in the 3D model and allows them to use CAM benefits for both hull parts and pipes. "Actually, CADMATIC helped us to be more open-minded with regards the integration of ERP systems and other systems in the future," Harry adds.

Business and efficiency benefits

Tools like the CADMATIC eBrowser and CoDesigner are also widely used at Pella Sietas. eBrowser is used throughout the whole company to reduce the amount of drawings. It is also used by

customers and sub-contractors. The CoDesigner is used for the exchange of basic design information via FTP.

"CADMATIC makes it easy to keep the focus on project tasks, instead of using the time for navigation."

"Like all software programs, improvements and adaptions could always be made according to our needs, but overall it is very easy to use and works well. I think companies that do their own engineering and production, engineering site offices, or even companies that do not do their own engineering will benefit greatly by using CADMATIC software," Harry concludes.





Pella Sietas in brief

- Shipbuilding in Germany since 1635
- · Located in Hamburg, Germany on the south bank of the Elbe river
- · Offers ship concept and ship design, basic design, detail design, nesting and coding, plasma cutting and deforming, section and block construction, dock assembly and commissioning and testing.
- Builds ships of up to 180 meters long, 38 meters wide and with weights up to 12.000 tons.

CADMATIC Electrical

Comprehensive solution for electrical and automation design and documentation

In August 2019,
CADMATIC acquired
Finnish software company Kymdata Ltd and its CADS software.
CADS software is a market leader in Finland and Estonia and an excellent complement to CADMATIC's design and information management applications in the Marine business segment.

Electrical and automation engineering connected with 3D modeling and cable routing provides support for multi-disciplinary design, comprehensive engineering, and project information management.

CADMATIC Electrical used in conjunction with 3D Ship Design and eShare ensures consistency of project information and eliminates interdisciplinary errors. It integrates the 3D information model, electrical and automation installation project data, manufacturing information, and overall construction data in the project with suppliers' data and PDM/PLM/ERP data.

Suitable for wide range of electrical and automation design

CADMATIC Electrical is suitable for a wide range of electrical and

automation design needs, such as electrification and instrumentation, machine automation, and logic design. It can create circuit diagrams, motor schemas, electrical arrangement drawings, control schemas and wiring, IO-schemas (PLC and automation controlling systems), process instrumentation, and oneline diagrams. Projects can be generated using template drawings and information in Microsoft Excel.

CADMATIC Electrical is a handy tool for the design and documentation of energy supply, lighting, heating, process electricity, telecommunication and security systems, among others. Its basic functions include symbols, wirings, cable routes, and centers, for example. It also automatically calculates group lengths, short-circuit currents, outputs and voltage drops, BOM and more.

The software includes 2D and 3D formats as well as switchboard schemas: groups, centers, supply etc.

Read more:



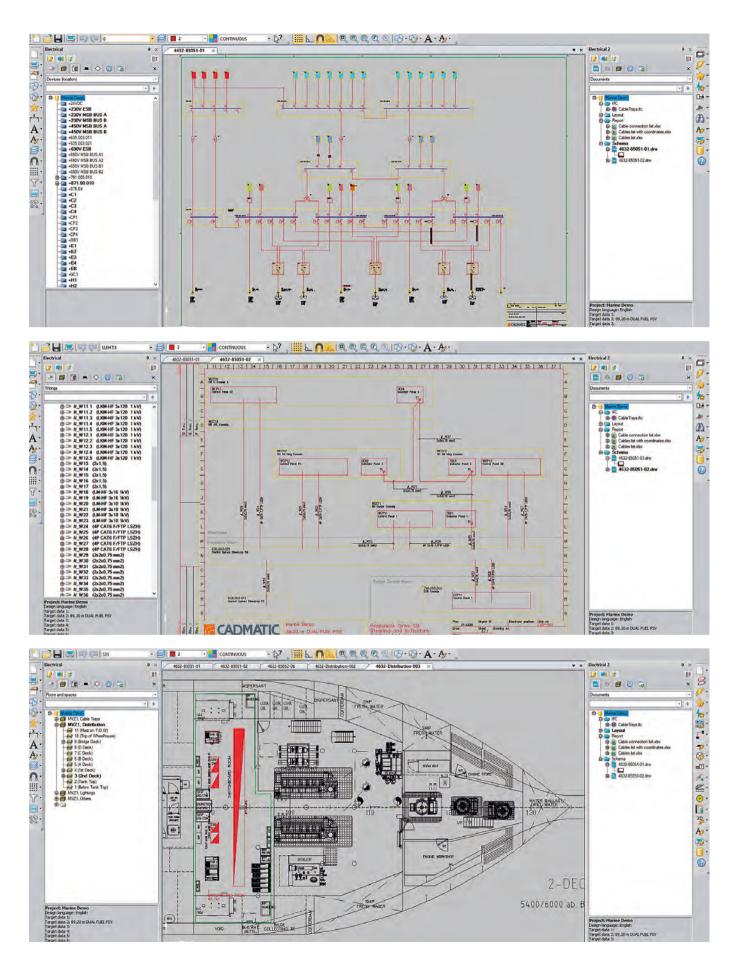
(next page top) Single-line diagram in CADMATIC Electrical

(next page center) Connection diagram in CADMATIC Electrical

(next page bottom) Electrical arrangement drawings in CADMATIC Electrical

Key features

- Effective and scalable; well suited to large- and smallscale design
- Easy-to-use tools for as-built documentation, design and quantity calculation
- Multi-user and database-based features for efficient teamwork
- Centralized data management allows editing data wherever needed
- Automated, fast and easy generation of customizable reports
- Installation drawings available in 2D/3D





Developments at CADMATIC

China and South Korea

The beginning of 2020 has been a busy period for some of CADMATIC's regional offices.
CADMATIC has opened a new office in Qingdao, China and expanded

its presence in South

New office in Qingdao, China

CADMATIC's customer base in the Chinese maritime industry has been growing strongly in recent years. To actively promote CADMATIC and support local customers, a new office was opened in Qingdao in April 2020.

Qingdao is famous for its ideal location. As the biggest foreign trade port in the north of China, the Qingdao Port is connected with more than 700 harbors worldwide.

Qingdao Beihai Shipbuilding Heavy Industries Co., Ltd, CNPC Offshore Engineering Company Limited as well as its production base are all located in Qingdao.

The Ballast Water Management Convention and the Sulfur Emission Restriction Order have led to the rapid growth of the Chinese ballast water treatment and desulfurization market. Improving design capabilities and design specifications have become primary goals.

Korea.



regional offices

The CADMATIC office in Qingdao will support Chinese design offices and shipyards in increasing competitiveness and efficiency.

Increased presence in South Korea

CADMATIC has increased sales and service resources in South Korea to serve the growing market.

CADMATIC activities in South Korea are focused on the marine and shipbuilding business segment. In addition to CADMATIC's longstanding Busan-based partner MTI Corporation, more local technical support resources are being added to serve the key and growing

Busan is a maritime logistics hub in Northeast Asia and boasts the 5th largest port in the world. The city is a center of marine science and R&D and home to Korean Maritime Institute (KMI).

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- CADMATIC's headquarters are located in Turku, Finland.
- We have staff in Australia, China, Estonia, Hungary, India, Italy, the Netherlands, Russia, Singapore, South Africa, South Korea, Spain, Sweden and the UAE.
- We have certified resellers and support partners in 12 countries in Europe, Asia, America and Africa. Our growing customer base includes over 6000 customer organizations in 60 countries.



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