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editorial

# FINNISH-RUSSIAN CO-OPERATION IS AN IMPORTANT PART OF THE FINNISH MARINE CLUSTER HISTORY

*The ship-building market is facing tough times right now. Many projects have been postponed and it is impossible to predict how the global economy and the price development of oil and gas are going to impact future orders.*

*But Finnish ship-building has a history which tells us something about the ability to cope also in difficult times. One part of the history has been Finnish–Russian ship-building co-operation. After the Second World War, Finns built vessels, also icebreakers for Soviet Union and that was the starting point for the Wärtsilä icebreaker business.*

*Today, ships Vitus Bering and Aleksey Chirikov are examples of co-operation between Arctech and Sovcomlot, the largest shipping corporation in Russia. These are multifunctional icebreaking supply vessels, which can be utilised in many arctic areas. There is also a global need for such ships.*

*Arctech Helsinki Shipyard has also been awarded a contract to build a 16 MW icebreaker for the Russian Ministry of Transport. The vessel will be delivered to the client in August 2015. One year ago Russian Ministry of Transport ordered also an icebreaking rescue vessel, which Helsinki shipyard is building together with Yantar Shipyard. The ship will be delivered next year.*

*Finnish marine cluster is living in the changing marine technology world. We have to remember that sea is still mostly open from ice. The key question is that vessels can operate in all sea conditions and also in arctic ice.*

*Finnish ship-builders' recent focus is in the development of arctic vessel technology. But we have also a long tradition as builders of large cruise vessels. This means that the Finnish marine cluster has two strong legs under her. From this position, we can answer the hard challenges of the new marine world.*

***

*At the end of this magazine, you will find information about the companies of the Finnish marine cluster. It is an amazing package of know-how – these companies can build ships for all the seven seas to meet all circumstances.*

RISTO VALKEAPÄÄ
EDITOR-IN-CHIEF

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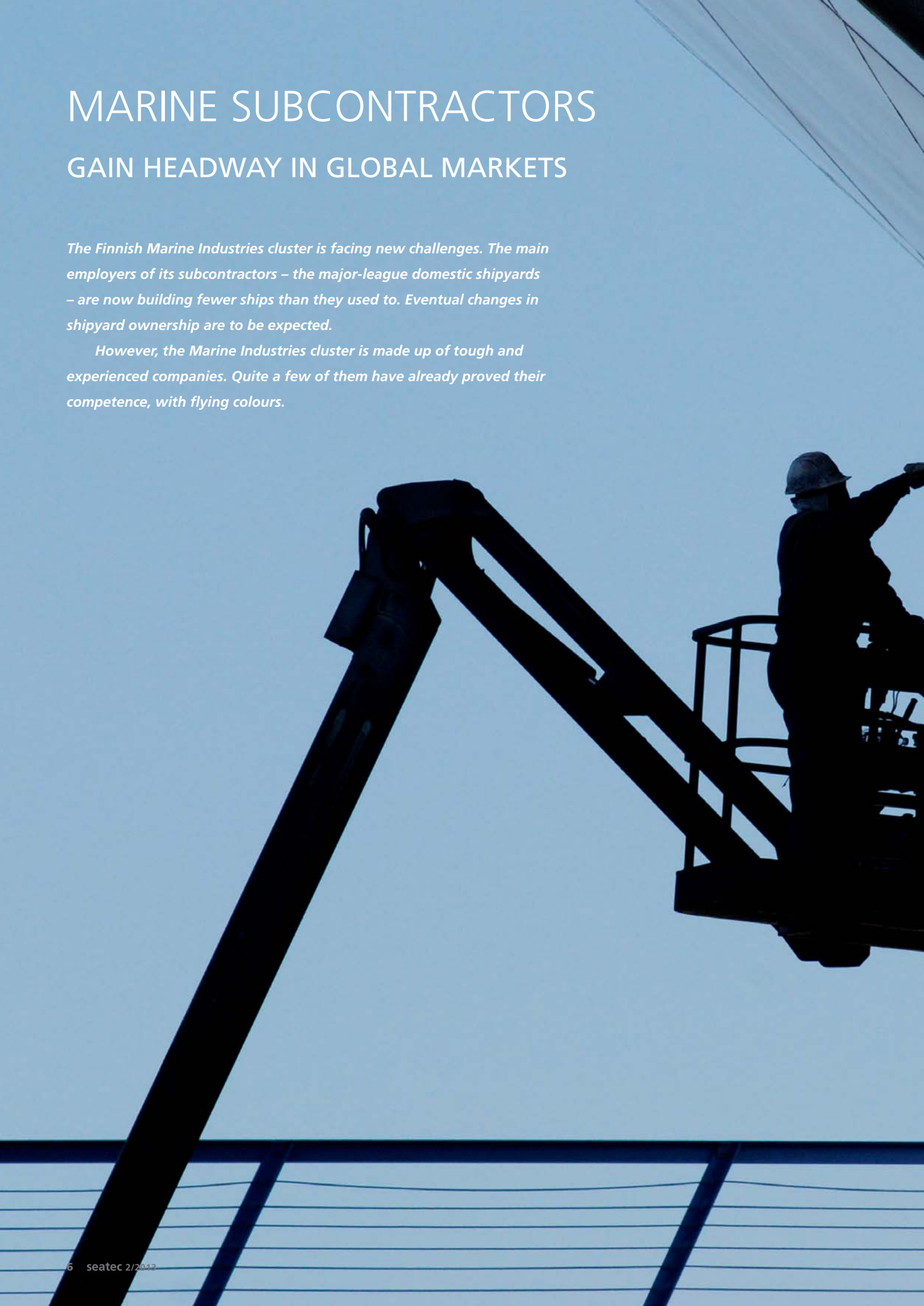
# MARINE SUBCONTRACTORS

## GAIN HEADWAY IN GLOBAL MARKETS

***The Finnish Marine Industries cluster is facing new challenges. The main employers of its subcontractors – the major-league domestic shipyards – are now building fewer ships than they used to. Eventual changes in shipyard ownership are to be expected.***

***However, the Marine Industries cluster is made up of tough and experienced companies. Quite a few of them have already proved their competence, with flying colours.***



Photos: STX Europe

Photo: Meyer Werft

*Finnish Marine Industries cluster companies have had long-standing cooperation with Meyer Werft's shipyard in Papenburg in Germany.*

Finland is known as a country full of innovative ship designers and hi-tech shipbuilding companies. The same attributes apply to the Marine Industries cluster subcontractors.

Many of those companies possess unrivalled know-how on the intricacies of modern-day ship assembly. They have participated in the production of such complex vessels as polar research vessels, ice-breakers, and oil-drilling platforms – among other things.

With this kind of experience, the Finnish subcontractor companies are more than ready to compete in the international shipbuilding markets. Here are a few success stories.

## CABIN DOORS FOR CRUISE SHIPS

Based in the coastal town of Salo in south-western Finland, the door manufacturing company Antti-Teollisuus Oy has for a long period of time been a subcontracting manufacturer of cabin doors for such major co-operative partners as Royal Caribbean International shipping line and Meyer Werft shipbuilders. The history of cooperation between the companies dates back to the 1990s.

"Just a while ago, we received a large-scale order of cabin doors for the American cruise liner 'Quantum of the Seas' currently being built at Meyer Werft's shipyard in Papenburg in Germany," Commercial Director Markko Takkinen from Antti-Teollisuus Oy rejoices.

Designed to carry 4 000 passengers, the 'Quantum of the Seas' will be complet-

*Many Finnish subcontractors are supplying parts and equipment to STX's shipyard in Saint-Nazaire, France.*

ed at Meyer Werft's shipyard by autumn 2014. The cabin doors are scheduled to be supplied from Salo to Germany by the spring of 2014.

According to Mr. Takkinen, Antti-Teollisuus Oy is specialised in manufacturing cabin doors that have been designated to fire-safety class B.

"The recent order covers all the cabins of the cruiser. This means it incorporates approximately 3 000 cabin doors."

While Antti-Teollisuus Oy has in the past few years been involved in a vast number of marine subcontracting projects, the global downturn in the field of shipbuilding has turned the tide and slowed down the markets to some extent for cabin door manufacturers as well.

"At the moment, our manufacturing volumes are down to about one half of what we usually produce. On the other hand, the year 2014 will be full of new possibilities."

Meyer Werft's order involves an option for a similar kind of order from Antti-Teollisuus for another cruise liner, 'Anthem of the Seas,' expected to be completed by spring 2015.

## NEW ORDERS ON THE HORIZON

At the present time, Antti-Teollisuus Oy employs 120 professionals in total.

"Some time ago, we recruited new personnel. Furthermore, we have added our capacity of temporary workers," Mr. Takkinen mentions.

Production lines need to be manned since Antti-Teollisuus Oy is also involved in marine subcontracting for at least one – eventually possibly both – of the German TUI cruisers being constructed at STX Finland's Turku shipyard.

"The order for the first TUI ship is for approximately 2 000 cabin doors. This project has already been started," says Takkinen.

He expects that Antti-Teollisuus Oy has a good chance to win the order for supplying the cabin doors for the cruise liner 'Oasis III' that STX France is building at Saint-Nazaire shipyard.

"For some time already, we have networked ourselves with a cluster of reliable suppliers of parts and raw materials. This has proved to be a good practice for a company that is largely involved with manufacturing highly specialised products."

## ON-BOARD WATER TREATMENT

Established in the 1990s, WatMan Engineering Ltd Oy is one of the leading suppliers of tailor-made water treatment equipment and plants in Finland. The company also supplies on-board water treatment systems to ships.

"We manufacture water treatment systems for various purposes. A while ago, we received an order for three sets of reverse osmosis devices for the cruise ship 'Norwegian Breakaway' that is now being built at Meyer Werft's shipyard," recounts

Mr. Juha Lintujärvi, Manager for Project Sales for WatMan Engineering Ltd Oy.

He notes that similar equipment will eventually also be supplied to Breakaway's sister ship, 'Norwegian Getaway.'

"In addition to these projects, we are currently involved in producing two reverse osmosis units to each of the TUI cruisers being built by STX Finland's Turku shipyard."

"With such devices, sea water can be converted to drinking water while the ship is at sea."

Mr. Lintujärvi estimates that marine subcontracting projects add up to close to one third – perhaps even one half – of WatMan Engineering's annual turnover.

"These types of marine projects have been on the increase. The word is out that we have a reputation as a supplier of high-performance products. Shipyards have sent us new queries."

"The possible downturn experienced by shipbuilders has not affected our operations. Finnish marine subcontractors are in demand all over the world," Lintujärvi asserts.

## AIR CONDITIONING EQUIPMENT NEEDED

Koja Marine specialises in the design and supply of maritime air conditioning systems.

"We will deliver the air conditioning systems for the cruise ship 'Oasis III' now being built at Saint-Nazaire in France. The contract was signed in April 2013," notes Mr. Esko Nousiainen, Director of the Finnish air conditioning supplier Koja.

System deliveries include equipment, electrical and automation installations as well as training and service.

"In the case of 'Oasis III,' Koja will supply all air conditioning equipment. The only exception is the ventilation system for the engine room. For that, we do not yet have a contract," Mr. Nousiainen mentions.

He maintains that a well-functioning air conditioning system has a significant effect on the comfort of the ship's passengers and crew. Comfortable temperatures and fresh air ensure a good night's sleep on board and make sea travel more enjoyable.

"The share of marine subcontracting in Koja's annual turnover is approximately one third," says Nousiainen.

Photo: Meyer Werft

## NEW DELIVERIES TO SAINT-NAZAIRE

Besides the 'Oasis III' shipments, Koja Marine is involved in the Royal Caribbean Sunshine project at Meyer Werft's shipyard in Germany.

"We will deliver all air conditioning systems needed for two cruise ships," recounts Nousiainen.

According to Mr. Nousiainen, the Meyer Werft project started for Koja Marine in September 2011.

"Koja Marine now has its hands full with marine subcontracting projects. If all the options in our contracts are realised, our manufacturing line will be busy up until the year 2018," he estimates.

"Koja Marine has been successful in getting delivery orders from abroad. Of course, the situation of the Finnish shipyards worries us. We would like to supply products to shipyards in Finland, too."

Koja Marine's deliveries to STX's Saint-Nazaire shipyard in France will commence in April 2014.

"These deliveries will boost employment within our company significantly in the year to come," Nousiainen affirms. ■

MERJA KIHL
ARI MONONEN

# Breaking the Ice

## ARCTECH HELSINKI PROVES ITS METTLE WITH A DUO OF ARCTIC-PROOF SUPPLY SHIPS

Photos: Arctech Helsinki Shipyard

***During the first 30 months of its existence, Arctech Helsinki Shipyard has already made a name for itself as an arctic expert. The biggest reference to date is the duo of icebreaking supply vessels ordered by Sovcomflot. The first vessel of the series, Vitus Bering was delivered to the client in December 2012. The sister ship, Aleksey Chirikov, was delivered to client Sovcomflot on Friday 19 April 2013. Like Vitus Bering, this vessel will travel all the way to Sakhalin area in Far East Russia, where it will supply the Arkutun-Dagi oil and gas field.***

The main mission for the pair is to supply the Arkutun-Dagi oil and gas production platform and to protect it from the ice. The vessel type has been designed for extreme environmental conditions and will be operating in thick drifting ice in temperatures as cold as minus 35 C°. The icebreaking capability of the vessel is extremely high, as it is able to operate independently in ice 1.7 meter thick.

Esko Mustamäki, Managing Director of Arctech Helsinki Shipyard, points out that 99 % of supply ships out there operate on open seas, with no ice in sight. For example, SCF Sakhalin – delivered by Helsinki shipyard in 2005 – belongs to the same rather exclusive club as Chirikov and Vitus.

## NORTH RISES AGAIN

Both vessels for Sovcomflot are similar measuring 99.9 m in length and 21.7 m in breadth. Their four engines have the total power of 18 000 kW and the propul-


**Arctech Helsinki Shipyard**
- specialises in arctic shipbuilding technology
- 50/50 joint venture owned by STX Finland Oy and Russian United Shipbuilding Corporation
- joint venture agreement signed December 2010
- located in Helsinki
- approximately 400 employees


sion power of 13 000 kW. As multipurpose vessels, these vessels are capable of carrying various type of cargo and they are equipped for oil combating, fire fighting, and rescue operations. The rescue capacity is for 195 persons.

Mustamäki comments that Vitus Bering and Aleksey Chirikov speak volumes about the excellent co-operation between Arctech and Sovcomlot, the largest shipping corporation in Russia.

"These state-of-the-art multifunctional icebreaking supply vessels can be utilised in many arctic areas in the future and I see a global need for such Arctic vessels", says Mustamäki.

## EYE ON STRATEGY

Sergey Frank, President of OAO Sovcomflot, says that Aleksey Chirikov will operate in a region that has been gaining increasing economic importance for Russia over the last several years.

"The ongoing development of projects on the continental shelf in the Far East with the active involvement of Russian companies will allow Russia to further strengthen its positions in the rapidly expanding Asia-Pacific region," Frank said, adding that the construction of vessels like Aleksey Chirikov is fully in line with the Sovcomflot strategy to expand company participation in industrial projects on Russia's continental shelf.

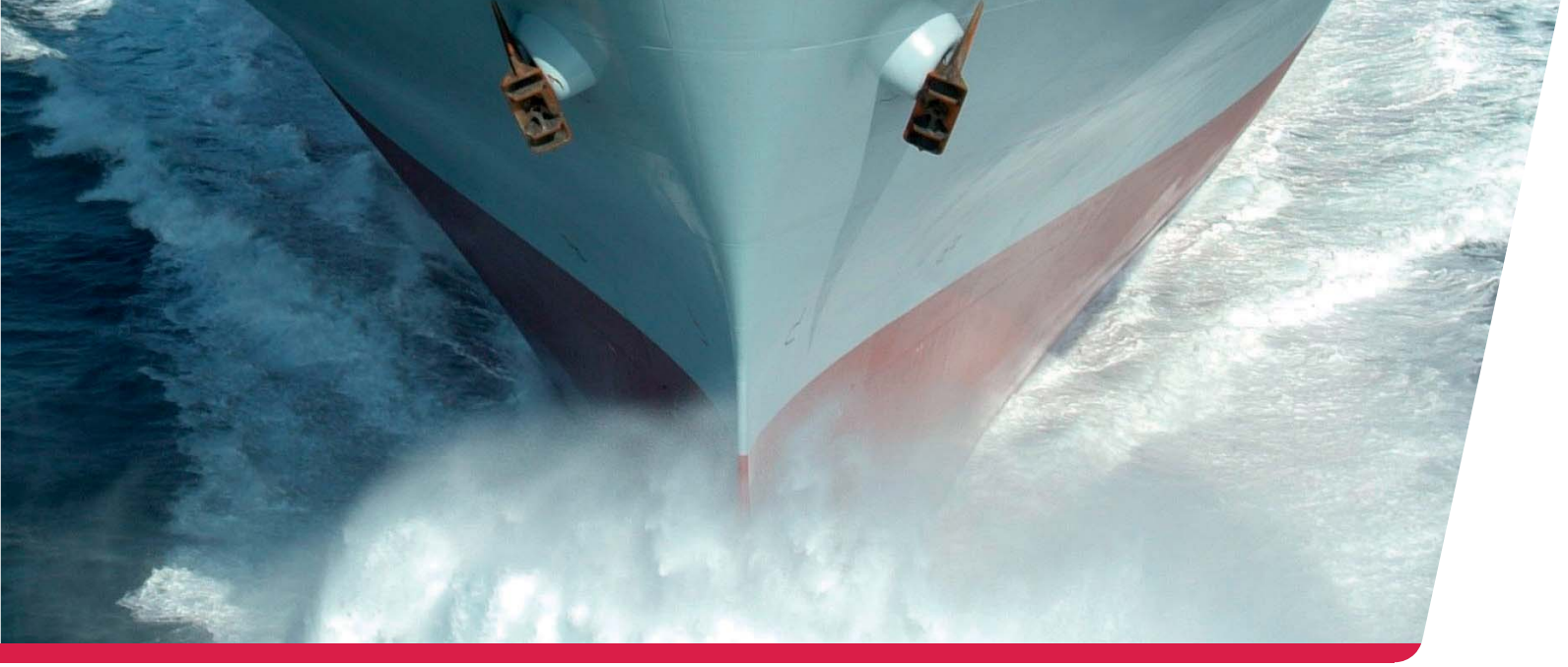
"Aleksey Chirikov and Vitus Bering bring together the very latest innovations in shipbuilding science and technology and are in high demand from both Russian and international oil and gas companies," Frank believes.

## VYBORG-HELSINKI COLLABORATION

The Helsinki Shipyard proved its mettle already with Vitus Bering as the technically advanced ship was delivered in two years – i.e. four months ahead of schedule. This was sure to increase the client's confidence in the shipyard – and now the future looks quite good for the Helsinki operation. In late December 2012 it was announced that Arctech Helsinki Shipyard has been awarded a contract to build a 16 MW icebreaker for the Russian Ministry of Transport. Helsinki shipyard won the contract together with OJCS Vyborg Shipyard and the total value of the deal is about EUR 100 million.

"The planning for the ship is done in Russia and it is already underway. We at the Helsinki shipyard will start work on the project next year," says Mustamäki. Arctech will be responsible of the construction, outfitting and commissioning of the vessel.

The vessel will be delivered to the client in August 2015. The icebreaker is planned to be used in year-round operation in the Baltic Sea and in summer season in the Arctic seas. The vessel is able to operate in temperatures as cold as –40 °C and the maximum icebreaking capability is 1.5 m.





The vessel belongs to series of three newbuilds ordered by the Russian Ministry of Transport from Vyborg Shipyard. In addition to the basic design, also the purchasing of major components and almost half of the vessels hull blocks will be provided by Vyborg Shipyard.

## FAMILIAR CLIENT

According to Esko Mustamäki, this order is very important for Arctech Helsinki Shipyard, giving the shipyard a good base work load for the next two years.

"It is also a positive continuation of the icebreaking rescue vessel, that Russian Ministry of Transport ordered a year ago, and which we are building together with Yantar Shipyard", Mustamäki observes. The first block of this vessel arrived in Helsinki in April, with floating out scheduled around June/July. The ship will be delivered next year.

Aleksandr Solovyev, the Managing Director of Vyborg Shipyard, is glad to see co-operation between Vyborg Shipyard and Arctech Helsinki Shipyard deepen with the new contract. Also, adding such a technologically advanced vessel to the order books allows both companies to present themselves as forerunners in building icebreaking special vessels.

The main tasks of the vessel are icebreaking and assisting of heavy-tonnage vessels in ice, towing of vessels and other floating structures in ice and open water. The vessel will also be used for fire fighting on floating objects and other facilities, assisting vessels in distress in ice and open water and also for cargo transportation.

The vessel will measure 119.8 m in length and 27.5 m in breadth. The four main diesel generator sets have the total power of 27 MW. The total propulsion power is 18 MW consisting of two full-circle azimuth thrusters.

## ROUGH SEAS STILL AHEAD

Looking ahead, Esko Mustamäki acknowledges that the ship-building market is facing tough times right now.

"This has, naturally, had an effect on us, too. Many projects which are likely to provide us with orders have been postponed."

Mustamäki says that it is impossible to predict how the global economy and the price development of oil and gas are going to impact future orders. He also observes that when a new oil/gas field is being launched, the over-all price tag of the operation is easily 10 billion dollars – and timing is everything.

"The ordering of ships for the project is a marginal part of the whole thing and will be realised only after the actual investment decision has been made." ■

SAMI J. ANTEROINEN

Photos: KONE Corporation

# Flow Onboard

## KONE'S ELEVATORS REIGN SUPREME ON THE SEAS – ESPECIALLY IN THE DEMANDING PASSENGER SHIP SEGMENT

***KONE has become the number one manufacturer of passenger ship elevators. According to Cãlin Hera, KONE has a pretty good lock on the throne especially when comparing units installed, but KONE is also strong when looking at the financial value of the contracts or number of passenger ships using KONE solutions, for instance.***

"We collaborate with all the major shipyards and ship-owners around the world and they do appreciate the fact that we're a global operator," Hera comments. With regards to the competition, KONE has an advantage here – the Finnish company's rivals have a more regional or local mindset.

But what do you have to do differently when you're taking elevators from land and putting them upon the waves? The first thing, Hera replies, that you have to recognise is that the "building is moving".

"We have to make allowances for pitching and rolling of the vessel to make sure that the people flow solutions we provide are always safe and work the way they should. This means, for instance, that the structure of the elevators is stronger and the cables more secure," Hera says.

### EYE ON THE PROFILE

Another thing comes from the people flow profile of a ship vs. that of an office building, for instance. While a regular building full of white-collar workers packs the elevators to the brim around lunchtime, with passenger ships there are two big "seasons":

"When the patrons embark and when they disembark, that's when the elevators have to perform to the best of their ability."

KONE has become "king of the waves" due to some shrewd business moves. Originally, the marine elevators were manufactured by the Danish company Dan Elevator which became a part of KONE's MacGregor business operations later on. While MacGregor moved on to Cargotec, marine elevators became a part of KONE.

Passenger ship elevators are, by far, KONE's forte in the marine segment, with ferries contributing as well. More recently, KONE has also made advances in the cargo department, installing elevators to cargo ships more and more. According to Hera, KONE has tried its hand in offshore, too, but is backing out of that business:

"We have been active in the Oil & Gas segment for several years; however, as we re-evaluated our marine business during early 2013, we realised it doesn't make complete business logic anymore, so we pulled out of offshore altogether," he confirms.

### WASTE NO TIME

With passenger ships, however, the evolution has been tremendous. As the size of the cruise ships has grown, there is more need for elevators. Also, the cruise lovers hate to spend their vacation standing around and waiting for the elevator.

The crowning achievement for KONE was delivering people flow solutions to the Oasis twins, the world's greatest cruise ships. With heavy traffic in all directions 24 hours a day, the Operation Oasis created (quite possibly) the most testing context for marine elevators ever. Smooth logistics on the 16-deck ships are simply a must, with elevators being the key to everything.

KONE delivered a total of 41 elevators to the ships. Equipment is hoisted by the economically and ecologically advanced KONE EcoDisc technology, using both space and energy efficient KONE MiniSpace and KONE MonoSpace solutions. Elevator modes are synchronised with the guest communication system so that disembarking instructions, for example, are automatically displayed on the elevators' LCD screens.

KONE also provided special-access elevators for guests with reduced mobility. Furthermore, two escalators were incorporated – rare equipment on ships. These help to speed up the flow of people, espe-

cially at those critical times of boarding and disembarkation.

## SIMPLY PLUG IT IN?

With regards to the Oasis duo, KONE used its tried-and-true Plug-in installation method. This means that elevators are pre-assembled inside the pre-manufactured shafts at the KONE factory in Hyvinkää, Finland, and then brought in as modules to the shipyard, lifted into position and welded to place.

This solution enables the early completion of the elevators; several of the elevators can serve the ship as logistics elevators already during the construction phase.

Hera admits that the whole process – especially the part where the modules are transported in one piece to the shipyard – may sound like a bit of a challenge.

"We have learned to master this process well and are very happy with the results," he says.

## GRACE GOES GREEN

The greenest reference to date is cruise ferry Viking Grace which started operations in January. KONE delivered a total of 14 KONE MonoSpace machine-room-less elevators and KONE MiniSpace elevators with compact machine-room, all powered by the KONE EcoDisc hoisting machine. These eco-efficient elevators are equipped with regenerative drives, which will utilise the braking energy of the elevators and generate it back as electric power.

"This will save up to 30 % in energy costs," says Hera, adding that Viking Grace's elevators are the most energy-efficient in the world. This is fully in line with the green profile of the ship, as Viking Grace is hailed as the most environmentally friendly passenger vessel to date.

In order to provide the optimal People Flow onboard the vessel, KONE assessed the passenger traffic with thorough calculations. According to Hera, KONE uses sophisticated traffic calculation tools to achieve smooth logistics on the seas:

"We work with the size and the layout of the ship and consult the ship-owners about the various options." ■

SAMI J. ANTEROINEN

# Fast Break

## MEYER WERFT BUILT NORWEGIAN BREAKAWAY IN JUST 18 MONTHS – THANKS TO SEAMLESS CO-OPERATION

***The Meyer Werft shipyard is in fine form. The Papenburg shipyard is putting out one high-profile vessel after another and the newbuilds are jam-packed with marine innovations. The latest showstopper is Norwegian Breakaway which was built in just 18 months.***

*Photos: Meyer Werft*

### Norwegian BREAKAWAY – Fast Facts

| | |
|---|---|
| Dimension | 146,600 GT |
| Length overall | 324.00 m |
| Moulded breadth | 39.7 m |
| Number of decks | 18 |
| Draught | 8,30 m |
| Engine output | 62,400 kW in total |
| Propulsion power | 35,000 kW |
| Speed | 21,5 knots |
| Number of passengers | 4,000 |
| Number of passenger cabins | 2,014 |
| Number of outside cabins | 1,508 |
| Number of inside cabins | 506 |
| Crew | ca. 1,600 |
| Number of theatre seats | 770 |
| Number of dining options | 27 |
| Total weight of applied paint | ca. 300 t |
| Total length of laid cables | 2,154 km |
| Total length of laid pipes | ca. 400 km |
| Flag | Bahamas |
| Classification | DNV |

Delivered on 25 April 2013, Norwegian Breakaway is the first of two Breakaway class ships the shipyard is building for Norwegian Cruise Line. The 146,600 GT cruise ship combines innovative design including The Waterfront and 678 Ocean Place with three unique decks of dining, entertainment and more, along with the largest aqua park and the largest ropes course at sea, and the first ever salt room in the luxurious spa. Norwegian Getaway, the sister ship, will launch in Miami on February 1, 2014.

Extensive tests and trials of all systems and intensive training of the crew kept everyone busy in the last weeks prior to the delivery in Bremerhaven. Nevertheless, Kevin Sheehan, Norwegian Cruise Line's Chief Executive Officer, was all smiles as the shipyard delivered the product. Sheehan commented that Norwegian


Cruise Line is elated to take ownership of the newcomer that has so many unique features, world-class entertainment and artfully designed staterooms.

## BIG ON BALCONIES

Along with its new design, this luxury liner offers guests a multitude of special features and comfort: approximately 75 % of the staterooms are outside staterooms, most of them with their own balconies. The ship also includes staterooms designed and priced for solo travelers (continuing the tradition that began on Norwegian Epic) along with The Haven by Norwegian, a top-of-the-ship complex that pampers guests with a range of suites, a private restaurant, lounge, covered pool area and sun deck.

Bernard Meyer, managing partner with Meyer Werft, noted that the shipyard set out to deliver a ship that would really stand apart. A key element in the effort was collaboration with the Norwegian team which Meyer called "outstanding".

"It's quite an accomplishment to build a vessel of this size and calibre in just 18 months."

## GOING GREEN

The latest engine technology, the diesel-electric pod drive system, improved hydrodynamics as well as effective energy saving, heat recovery or ballast water treatment guarantee an ecological cruise experience at significantly reduced operating costs. In addition, the ship was designed according to the latest security regulations.

The building of Norwegian Breakaway was supported by Germany's Federal Ministry of Economics and Technology and the federal state of Lower Saxony with an aid for innovation for a ship type design and the first use of innovative components.

Presently, Norwegian Breakaway is already hard at work serving cruise-lovers, performing seven-day cruises at Bermudas.

## FIRST RAY OF SUNSHINE

Still, there is something even more exciting in the pipeline. The first ship of the Project Sunshine is expected to be completed in October 2014 and the entire marine industry is interested to see what Royal Caribbean International is up to this time. After

bringing the cruise world Oasis, RCCL is going both small and multi-space with the newbuild.

The first steel-cutting for 'Quantum of the Seas' took place on 5 February, 2013 at Papenburg. The second ship, the 'Anthem of the Seas,' will be delivered in spring 2015.

Harri Kulovaara, Royal Caribbean's Executive Vice President, Maritime, is convinced that also this next class of ships will fascinate the company's guests. So far, Kulovaara is satisfied with the progress that has been made in the planning of the ship.

"Now the teams from Meyer Werft, their partners and the teams from Royal Caribbean International are faced with the task of making the ship come to life," he defines the challenge ahead. Having a tonnage of 167,000 GT, the Quantum class ships will offer capacities for approximately 4 100 passengers.

Bernard Meyer was present at the ceremony, too, remarking that the company is very happy to build these innovative ships for Royal Caribbean International and to continue the long-standing relationship between the two companies.

"We guarantee to deliver a cruise ship featuring an exceptional interior design, which meets the highest technical standards, is extremely energy efficient, and complies with the latest environmental technologies."

**LNG TANKER DEBUT**

In addition to luxury cruise liners, Meyer Werft has also a proven track record for building gas tankers. Liquefied Natural Gas (LNG) tankers, however, are something new for the shipyard. In January, Meyer Werft reached an important technological milestone as it completed its very first LNG tanker, the Coral Energy, for the Dutch owner Anthony Veder.

Coral Energy is the first ship of a new gas tanker type which is equipped with an eco-friendly dual-fuel engine. The tanker is operated with natural gas bringing the emissions of the vessel to extremely low values which are clearly below the prospective applicable limits for ECA-areas. The transported LNG is cooled down to minus 161°C.

The new tanker has a length of 155 m and a breadth of 22.70 m with a cargo capacity of 15 600 m³ and a maximum speed of 15.80 kn. Fully loaded with LNG the ship will have a draught of 8.20 m. Meyer Werft is intent on further developing this new propulsion system, so that the technology can also be used on passenger ships in the future. ■

SAMI J. ANTEROINEN

Photos: STX Finland

# New demand for Rauma shipyard's expertise in specialised shipbuilding

***Although the overall situation of STX Finland´s shipyards has been somewhat precarious in the recent months, the shipbuilders remain optimistic.***

*An aerial view of STX Finland's Rauma shipyard.*

At STX Finland Oy's Rauma Shipyard, there may well be good reasons for the workers to expect to have their hands full with ships to be built for a long time to come. Production of a large offshore patrol vessel for the Finnish Border Guard will keep shipbuilders busy for the remainder of 2013. Furthermore, new export prospects are dawning on the horizon.

While STX's South Korean owners are liable to lose some sleep going through their financing options, it's business as usual for the STX Rauma shipyard on the southwestern coast of Finland. And the business is shipbuilding.

"Right now, prospects for new sales orders appear to be better than half a year ago," says Mr. Toivo Ilvonen, currently Project Director for STX's Rauma and Turku shipyards' newbuildings. He was Director of Rauma shipyard until spring 2013.

"All in all, the situation of STX Finland's Rauma Shipyard now looks clearly better than it did just three months ago."

## INCREASING NEED FOR RESEARCH VESSELS

According to Mr. Ilvonen, the chances of Rauma shipyard for receiving new orders for specialised ships are continuously increasing.

"What's more, it seems that even new car ferries will soon be in high demand. In this domain, sales projects for new orders for Rauma shipyard already exist," he affirms.

"Also, negotiations for individual orders for research vessels have been ongoing."

The shipyard has in fact plenty of prior experience of building various types of research vessels in recent years.

In the summer of 2012, Rauma shipyard completed the production of RV Mirabilis, a fisheries research vessel built for use in Namibia. Just a couple of months

previously, in April 2012, the Antarctic research and supply vessel S.A. Agulhas II was also completed at Rauma shipyard. The latter ship was ordered by the South African Ministry of Environment and it is now being utilised for marine and meteorological research duties around South Africa's research stations in the Antarctic and Marion and Gough Islands.

## NEW MARKET AREAS FOR SHIPBUILDERS

It has been estimated that STX Rauma shipyard might find new potential customers in the Far East and South America in the near future. Ship orders from Finland may also turn up.

One potential end-user of a Rauma-built Antarctic vessel could be the Chilean Navy. Reportedly, Chile has a need for a specialised supply vessel to be utilised for shipments between the Antarctic and the South American mainland.

In January 2013, representatives of STX Finland's Rauma shipyard – along with Finland's Prime Minister – met with Chile's top leaders in Santiago, with a view to promoting various types of Finnish exports. Also present was Chile's Minister of Defence, Mr. Rodrigo Javier Hinzpeter. Rauma shipyard's aim is to be one of the participants in the bidding competition for Chile's new Antarctic supply vessel.

Another type of a special vessel that STX Rauma shipyard may end up building presently is a new ice-breaker.

Currently, a bidding competition for the design and production of a new ice-breaker is underway. With Rauma shipyard's long-term experience and expertise of Arctic and Antarctic vessels, it would appear that Rauma has considerably good chances of being summoned to build the ship. The decision is expected to be publicised in late 2013.

"In addition, it now seems that new markets are opening for shipbuilders even in Russia," Mr. Ilvonen points out.

## OFFSHORE PATROL VESSEL NOW UNDER CONSTRUCTION

At the present time, STX Finland's Rauma shipyard is in the process of producing a next-generation offshore patrol vessel. The ship has been ordered by the Finnish Border Guard. Production started on 22 October, 2012.

The patrol vessel has a length of 96 metres and a width of 17 metres. The vessel design is highly advanced technically, incorporating the latest technologies and environmentally friendly innovations for sustainable public procurement. The ship is equipped with machinery utilising liquefied natural gas (LNG) and diesel oil as fuel.

The requirements of energy efficiency and safe operation of the vessel in various kinds of accident situations have been taken extensively into account in the design of the ship.

Besides the usual border safety and frontier supervision missions, the offshore patrol vessel can be used for search and rescue operations, military national defence purposes, and underwater assignments – both independently and in cooperation with other authorities.

The ship will also feature substantial oil recovery capacity. The Finnish Environment Institute has been closely involved in the design of the vessel.

"Hull assembly for the offshore patrol vessel has now been started at Rauma shipyard. Already, approximately 50 percent of the ship is ready," Mr. Ilvonen says.

"The hull will be completed at the end of July 2013. After that, the final refurbishments and commissioning will take place. The vessel will be ready for operation by the end of the year." ■

MERJA KIHL
ARI MONONEN


*Rauma shipyard is building a new type of offshore patrol vessel for Finnish Border Guard.*

# Production of both TUI cruisers now underway at Turku shipyard

***Known for its expertise and proficiency in shipbuilding, STX Finland's Turku shipyard has recently suffered from the financing troubles of its Korean owners.***

***Changes in ownership may be expected later on, but the shipyard and its skilled workforce keep going at full speed. Production of the second cruise ship ordered by the German company TUI Cruises was started in late May.***


*Both TUI cruisers under production will be close to 300 metres in length*

rs under production
metres in length


Photos: STX Europe

*Shipyard Director Jari Anttila and CEO Richard Vogel of TUI Cruises seen at the start-of-production ceremony for the first TUI ship at Turku shipyard in November 2012.*

In early 2013, the prospects for STX Finland's Turku shipyard did not look very good. When the Finnish government refused a loan of 50 million euro's to Turku shipyard, the long-waited order for a new luxury cruiser was withdrawn. That ship is now being built at Saint-Nazaire shipyard, in France.

The precarious situation at the shipyard also came close to threatening the realisation of two other cruise ships. Turku shipyard had received the order for the first of them from TUI Cruises already in September 2011. The second TUI ship was ordered in November 2012 when production for the first cruiser was commencing at the shipyard.

However, in the spring of 2013, a financing contract was agreed upon by the Finnish government, STX, TUI Cruises, and the specialised financing company Finnvera. According to the terms of the contract, the state of Finland would for instance be prepared to purchase land areas of STX Finland's Turku shipyard – in the event that this would become necessary for the purpose of supporting the continued operation of the shipyard and the production of the TUI cruisers.

## BAFFLING NEWS FROM THE SHIPYARD OWNERS

The South Korean owners of STX's shipyards have recently kept sending mixed signals in regard to the shipyards' future ownership.

In early April 2013, Mr. Su-Jou Kim – CEO of STX Europe – announced that the international STX combine had no plans to sell Turku or Rauma shipyards to new owners. Mr. Kim was at this time reluctant to comment on STX's financing plans, but he maintained that the STX combine would hold onto both of these Finland-based shipyards.

Just a few weeks later, in the first days of May, the news that the Korean owners of STX would after all be willing to sell off their shipyards in Finland, France and China was published in South Korean newspapers.

The Marine Industry subcontractors in Finland issued a statement saying that they would now seek Finnish financing for purchasing a minority share of STX Finland's shipyards. In their view, such an arrangement would work best if the state of Finland could become one of the major owners in the shipyard company.

Not long after, Ms. Heidi Hautala – the Minister in charge of state ownership in business enterprises – noted that she did not believe that the state could take the role of the predominant developer and owner of shipyards.

"The very idea is obsolete. It sounds like a relic from a bygone era," she said on the radio.

## TUI CONTRACT NOT THREATENED

Soon after the news concerning the possible sale of STX's shipyards had been pub-

lished in early May, Mr. Jan Vapaavuori – the Finnish Minister of Industries – commented on the new situation on his Facebook pages.

"At this stage, it is quite impossible to assess what STX's stated intention to sell the shipyards is actually going to mean in practice," Mr. Vapaavuori noted.

"What is significant from the standpoint of the Finnish shipyards is that the possible eventual sale transaction will not basically affect the financing package for the TUI cruisers that are currently being built at STX's Turku shipyard."

The Minister pointed out that in any event, STX Finland ought to commit itself to pursuing further-reaching competitiveness on the shipbuilding market.

"After all, the formula for success of the shipyards will even in the future be based on strong privately-owned industrial operators, as well as on the operational competitiveness of the shipyards themselves," Vapaavuori emphasised.

## WORK STARTED ON THE SECOND CRUISER

In the shadow of the hollow-sounding statements of the ministers, the shipbuilders at STX's Turku shipyard keep building new cruisers.

An important milestone was reached on 24 May, 2013, when the keel-laying ceremony for the first of the TUI cruisers was arranged in Turku. On the same day, production of the second TUI ship was started.

The ships are scheduled for delivery in spring 2014 and spring 2015, respectively. Combined, these two vessels will bring some 11 000 man-years of labour to STX Finland's Turku Shipyard.

Speaking at the keel-laying ceremony, Mr. Richard J. Vogel – CEO of TUI Cruises – said he was quite satisfied with the work carried out so far on the first cruiser. He was also impressed by the good working atmosphere and team spirit at Turku shipyard.

"I am very happy that we are building these ships in Finland," Mr. Vogel stated.

Once completed, both of the TUI cruisers will be sophisticated and highly innovative cruise ships with a length of 294 metres and a width of 36 metres.

High balcony ratio will ensure that most of the passengers will have a possibility to enjoy their own balconies during the cruise. The ships will have a wide variety of restaurants, a theatre, a spa, a nightclub and a large deck area.

Each ship will have 1 250 staterooms, serve 2 500 passengers and have a crew of 1 000 persons. The cruise ships will have many environmentally friendly features, with a particular emphasis on the vessels' energy efficiency. ■

MERJA KIHL
ARI MONONEN

## BUSINESS RESIDENTIAL SERVICES

**BUSINESS LEVEL APARTMENT HOTEL IN CENTRE HELSINKI**
**FROM 51 EUROS/NIGHT**

Citykoti.com
Downtown City Apartments

# MARPOL waste requirements

## Can be managed by Evac systems

***New requirements for waste management by MARPOL can be managed through EVAC systems. The company has equipped thousands of ships with waste and sanitary products. EVAC is the natural single source provider of onboard waste management systems.***

From January 1st 2013, new requirements relating to the management waste of ships and rigs entered into force. All waste onboard, except food waste, has to be collected, or incinerated, according to the new IMO Marpol Annex V regulations. This requires storage space for waste onboard. In case there is not space enough compactors and other waste handling systems have to be acquired. Incinerators can be used, but not in all areas. For example in the Baltic Sea this is forbidden.

Evac can now provide a solution for the entire onboard waste handling needs.

The revisions to MARPOL Annex V as contained in resolution MEPC.201(62) prohibit the discharge of all garbage into the sea except as expressly permitted under specified circumstances for discharge of food waters, cargo residues, deck wash waters, and animal carcasses.

Evac's waste management solutions with all components, comes in a complete package making installation simple and efficient. It provides the shipyard and ship owner with a reliable and integrated solution with low installation and operational costs.

**FORTY YEARS' EXPERIENCE**

With more than 40 years on the maritime market, Evac has supplied equipment to more than 12,000 ships, including all types of cargo vessels but also cruise liners, passenger ro-ro ferries, vessels and rigs for the Oil & Gas offshore industry, naval vessels, submarines, fast ferries and superyachts. Evac provides complete onboard waste management solutions, including their quiet vacuum toilet collection system with ejectors, the MBR and ORCA types of wastewater systems capable of handling all black (sewage) and grey waters (from galleys, sinks, showers) and the food waste collection system, and dry waste and garbage handling, all meeting the strict environmental requirements of IMO, the International Maritime Organization.

Evac companies and representatives in more than 40 countries are responsible for the marine business worldwide. Evac companies have Lloyd's ISO 9001:2008 quality assurance and ISO 14001:2004 environmental standards certificates. ■

*More information: www.evac.com*

# WatMan SWRO

***It means less energy, less maintenance, less down-time, less costs and more customer satisfaction***

Seawater Reverse Osmosis (SWRO) rejects typically 98.5–99.5% of the salinity in one pass. In large-scale production, energy consumption creates a noticeable expense. In conventional SWRO systems, typical energy consumption varies from 6 to 10 kWh/m³-fresh water, depending on salinity, temperature and recovery rate among others. In state-of-the-art systems with energy recovery the energy consumption can be as low as 2...4 kWh/m³-fresh water.

On the other hand, 1-pass SWRO can produce fresh water with about 100 mg/l of chloride at its best. These high rejection systems always need an average feed pressure of 55–70 bars. So called 2-pass SWRO can remove even up to 99.9 % of the total salinity, meaning less than 20 mg/l of chloride, without significantly increasing the energy consumption. These high rejections are often required to achieve high potable water quality.

WatMan SWRO Systems can help you to produce extremely low-salinity fresh water with very low energy consumption. This means less energy, less maintenance, less down-time, less costs and more customer satisfaction. Less is sometimes more. ■

*More information: www.watman.fi*

# New generation in Lloyd´s Register in Finland

## The MLC is keeping Lloyd's Register staff in Finland busy

"The ILO Maritime Labour Convention (MLC 2006) will enter into force on 20 August 2013. The convention is of importance for the whole maritime industry and for all seafarers worldwide", Ms Päivi Björkestam, Field Operations Manager for Finland says.

"Auditing the MLC is making Lloyd´s Register in Finland very busy this summer. The classification societies are not only technical specialists, but also work to help secure the working conditions for sea farers", Ms Björkestam notes.

"The Convention prevents social dumping by updating and consolidating most of the ILO minimum standards concerning seafarers' working conditions, accommodation, health care and social protection. I see that we are going in the right direction. From the beginning of my career I have taken a holistic approach to ship design and operational safety. When I started to study naval architecture at the Helsinki University of Technology in Otaniemi I had an interest in promoting quality shipping operations and the safety of life at sea. Lloyd´s Register has offered me the possibility to work with these ideas in maritime industry since 1994", she says.

"In this business I have also learned to take a global viewpoint. The maritime industry is the world's first genuinely global industry, which requires an international regulatory response to the entire industry."

"Classification and certification has been part of our business for centuries. The services we provide are an essential link in the safety chain of the marine industry. However we also provide consultancy services and training which help clients identify business risks and go beyond basic compliance."

"Through our classification Rules and Regulations, we set safety and environmental standards for the design, construction and operation of ships. Our certification services are divided into a number of core areas, covering the needs of owners, operators, regulators and equipment manufacturers. Today our technical expertise is meeting the demand for ships that are designed and operated to perform better in every way, from the fuel they consume to the technologies and procedures they employ. And better performing ships means a better bottom line."

Lloyd´s Register is close to its clients: "Training our clients is an important part of our services. When we are close to our clients we learn about their business and role in the maritime industry. This helps us to share our insight and experience and make marine training relevant and effective", Mr Christopher Ridgewell, Marine Client Manager for Finland says.

When Country Manager Matti Niskala retied his duties were divided in two: Mr Ridgewell is responsible for business development and marketing and Ms Päivi Björkestam is in charge of field operations.

*Ms Päivi Björkestam and Mr Christopher Ridgewell in Helsinki city center June 2013.*

### LLOYD'S REGISTER AND LNG AS A FUEL

Lloyd's Register's Rules for Natural Gas Fuelled Ships is a general framework for using LNG as a fuel in ships. Viking Grace is one of the most advanced ships classified with these rules and Lloyd's Register and Wärtsilä are two of the main players in the LNG-as-fuel space.

"Environmental impact and fuels are important questions. Today and in the future I think that LNG will play an important role. Trials of other fuels such as methanol could lead to their adoption by ship owners" Mr Ridgewell says.

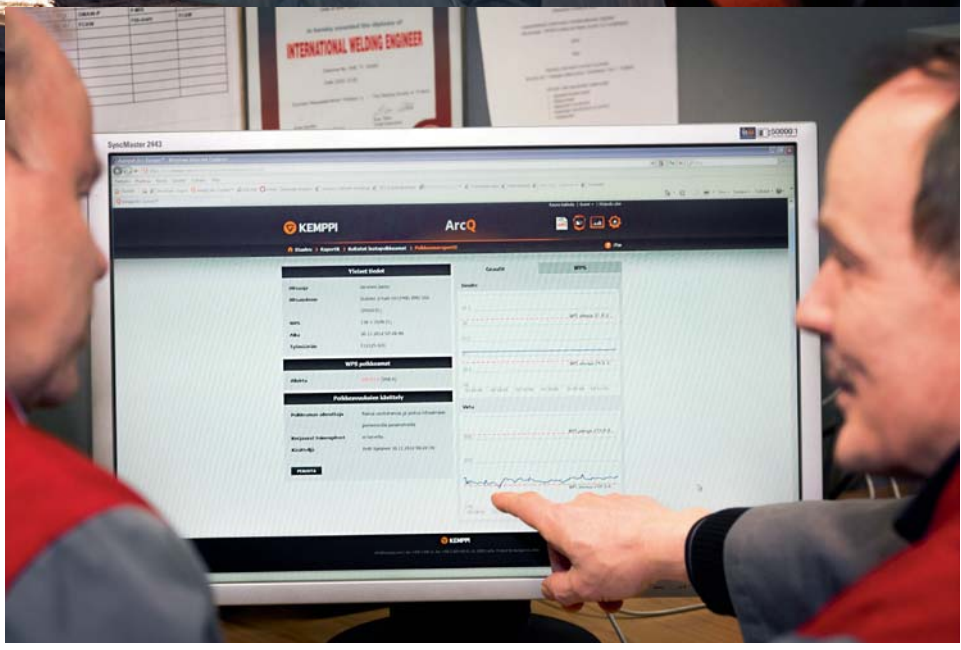
"The idea of a methanol-driven ship is relatively recent and we have also worked with our clients on other environmentally compliant technologies, such as bio-fuels, LPG, scrubbers, DME and also batteries."

If the sea trials go according to plan, a group of Scandinavian ro-paxes will be converted to methanol-as-fuel power in 2014. Some estimate the global production capacity of methanol to be around 90 million tonnes a year. With demand currently as low as 45 million tonnes this leaves an opportunity for the maritime industry, but the adoption of these technologies will be based on fuel price and available infrastructure. ■

RISTO VALKEAPÄÄ


*A welder at work with ArcQuality monitoring in the background.*

# Manage welding quality and productivity with Kemppi ArcQuality




*Management is analysing a deviation report.*

The Kemppi Arc System 2.0 module ArcQuality links together the two most important elements of welding production: quality and productivity. With the ArcQuality service, it is easy to make sure that the entire welding process is carried out in accordance with the welding procedure specifications. At the same time, monitoring by this service ensures that the welders are qualified to perform the tasks they are assigned.

Possible deviations are reported automatically and in real time. The system can also be used in preparation for maintenance operations, and the smart reader – the core of the system – compiles quality data even for weld-specific traceability, if need be.

The ArcQ system is based on the requirements set forth in the EN ISO 3834 welding quality management standard, which constitute a cornerstone of high-quality manufacturing.

The ArcQuality welding quality management solution is suitable for all producers who follow standards EN 1090, EN ISO 3834, ASME and NORSOK. ■

*More information:*
*wms@kemppi.com, www.kemppi.com*

# Merima top quality interiors already a quarter century

Merima is a state of the art turn-key public area interior supplier for newbuildings & refurbishments regarding Cruise Vessels & Car-Passenger ferries both old and new on the whole range. Onboard Norwegian Breakaway the range goes from outside pool area with water features and Bar to Ice Bar, Raw Bar, Salt Room and Teppanyaki Japanese restaurant and spaces between. Merima is able to build all public spaces up to pool and upper decks.

Recent Cruise Vessel orders include five (5) newbuildings of which three newbuildings at Meyer Werft in Germany, N.B. 692 "Norwegian Getaway", "Project Sunshine" for Royal Caribbean Cruise Line, N.B. 697 and sister ship N.B. 698, and two at STX Finland Turku shipyard, Cruise Ship for TUI Cruise, N.B. 1383 and her sister ship, N.B. 1384.

Latest on the Ferry market is RoPax ferry for CMAL, N.B. 764. German shipyard Flensburger Schiffbau-Gesellschaft mbH & Co. KG has awarded Merima contract of turn-key interior outfitting of all public areas. The ferry will be delivered 2014.

Two recently delivered car-passenger ferries; Spirit of Britain and Spirit of France for P&O Ferries was built in STX Finland Rauma shipyard. Merima turn-key contract with STX included interior outfitting of decks 8 and 9, total 8 000 square meters of restaurants, shops, lounges and lobbies.

*M/S Norwegian Breakaway entrance Le Bistro*

Latest refurbishments M/S Monarch of the Seas delivered in April 2013 in Bahamas additional to M/S Horizon a vessel of Pullmantur Ship Management/Croisière de France at Chantier Navale de Marseille delivered in 2012. ■

*More information www.merima.fi*

# The fabulous new M/S Viking Grace

## The greenest cruise ferry in the world saves water and energy with Oras' faucets

***Oras Group develops, manufactures and markets innovative high-quality faucets. Known for its user-friendly, ecological and safe faucets since 1945, family owned Oras is also the world's leading manufacturer of touchless faucets. Design cooperation with the Italian design company Alessi since early 2000 has made Oras one of the trendsetters in the industry.***

Ecological values have always been important to us. Decades of experience in developing water and energy saving solutions have ensured that ecological aspects are our strongest area of expertise. Today we provide entire product families of ecological smart faucets.

Oras presented the touchless, electronic faucets to the European HVAC market in the 1990s. As the world's leading manufacturer of touchless faucets our products represent the absolute peak of the market.

Touchless function is the most desirable faucet feature in any place where hygiene is a concern. Since 80 % of the microbes transmit from a person to another through the connection of hands, faucet choices play a significant role in the battle for better hygiene. Studies show that touchless smart faucets are more hygienic than single lever faucets. Naturally, since they do operate without touching the faucet. The surface of touchless smart faucet stays cleaner for longer. In the cruise ships, this is a convenient feature for the passengers. Touchless faucets are also safe since they cannot be left open accidentally. ■

*Touchless Oras Cubista smart faucets at public restrooms at M/S Viking Grace.*

*More information: SalesSupport@oras.com, www.oras.com*

# Parker Hannifin is leading the way for condition monitoring in the engine room

With the latest acquirement of Kittiwake, Parker Hannifin has increased their product offering for on-board condition monitoring. Kittiwake's long experience around in-service lubricants and fuel, together with Parker's traditional cleanliness monitoring equipment, enables the ship operators to finally get the benefits of condition based maintenance.

*Parker Digi Field Kit is a full scale chemical analysis toolbox for oil conditioning monitoring*


*Parker Thruster Scan is online tool for thruster oil condition monitoring*

Different on-line sensors like the Wear Debris Sensor and Oil Condition Sensor, together with chemical test kits ensure that the lubricants and fuels are fulfilling the requirements of the equipment manufacturers. Additional features like acoustic emission monitoring will bring the knowledge of potential failure even sooner to prevent the occurrence of costly damage, downtime or even catastrophic failures.

Kittiwake's ThrusterSCAN is a complete tool developed for monitoring the condition of the thrusters by measuring the wear metal particles and different oil properties together with oil moisture level. This unit has been developed together with major OEMs and it can also be retrofitted to existing thruster systems.

For the regular monitoring of engine oil, Parker Kittiwake's DIGI Field Kit is a simple and reliable tool. Based on the chemical reactions of the oil you can monitor several features like Total Base Number (TBN), water in oil in PPM figures, insolubles and also Total Acid Number (TAN). The kit also includes a simple tool to measure the viscosity of the oil compared to the new oil.

By measuring the oil quality we get information about a number of different parameters, but Parker can also offer solutions to heal some characteristics of oil. Portable purification systems (PVS) can remove not only the free water like some of the centrifugal and absorbing type solutions, but also the dissolved water which already weakens the oil properties. These PVS units are available in several sizes and Parker will also introduce a new version later this year, which is targeted for smaller units like thrusters and steering systems.

Together with extensive filter solution program for hydraulics, lubricating and fuel oil systems, different sensors and detectors make Parker Hannifin the leader in condition monitoring supplier in engine room applications. ■

*More information: www.parker.com*

# First Azipod® XO units in operation

Azipod XO is ABB's second generation propulsion unit, new design developed to improve the system efficiency and maintainability. First vessels with the new Azipod XO system started operation in 2012. These include two fast ferries with CRP concept (the conventional rudder behind the propeller is replaced by Azipod unit and the main and Azipod propellers face to each other and rotate to opposite directions) and cruise vessel Celebrity Reflection with twin Azipod installation. Further cruise vessel Norwegian Breakaway started operation in spring 2013.

The main new features of Azipod XO are
- improved hydrodynamic efficiency
- electrical steering instead of hydraulic one
- new innovative thrust bearing and propeller seal concepts with better maintainability
- improved safety when working inside the Azipod hull during maintenance
- new human interface with a possibility to get more valuable information to operate the ship more effectively and safely

During the factory tests, sea trials and first months of operation the success of the development project has been evaluated. Generally all the new features exceeded the expectations. Hydrodynamics has improved considerably compared to the Azipod VO design. In the Azipod hull there is enough space to make necessary maintenance for propeller seals and thrust bearings. The thrust pads and propeller shaft seals can be changed from inside the Azipod unit without drydocking the vessel. Although the final judgement of the reliability of the solutions can be made only after longer operational experience, there is not any reason to believe that these targets are not met. Heavy load tests during the development time and deep factory tests together with the experiences during the first months of operations support the trust to the selected solutions. ■

*More information:*
*www.abb.fi*

# SUPPORTING THE SHIPPING IN ICE CONDITIONS

***Turku Repair Yard as part of BLRT Grupp carries the heritage of North-European ship repair and conversion for shipping in winter navigation ambient conditions. With this as our roots the work procedures and collaborative attitude towards ship owners and other stakeholder enable the benefits to our customers.***

Short delivery time and flexibility are key drivers in daily operation and even under strong demand periods vessels for different missions are served. As an example in early June there was 6 vessels on simultaneous refit being: arctic tanker Kapitan Gotsky, Ice breaker Ymer, arctic research vessel Akedemik Feodorov, patrol vessel Tursas, cruise ferry Gabriella, cruise ship Kristina Katarina.

Our mission is to maintain the sea transportation in North-Europe by ensuring vessels competitiveness over their lifecycle offering maintenance, repair and retrofits flexibly and with total economic approach.

## LIFECYCLE APPROACH

Recently the understanding of lifecycle approach with revenues, capital costs, operational cost and business risks have been taken to decision table. This is a clear benefit to value added solutions whether integrated by end-user, investor or service provider. If the capital cost only is the decisive factor, the long term revenue potential and business risk might be worst not to mention easily estimated long term operational costs. It seems to be so self-evident and clear but still we see asset acquisitions with first cost only as decision criteria. Why is that?

There seems to be two answers. First is the natural asset play behavior with ships as floating assets. Wisely the cash rich shipping companies buy when inexpensive and sell when market value is high – this is the traditional way to be a billionaire in ocean going shipping.

The second reason is closer to markets described above and there is a lot to do for local academy, public and private side. That is the financing of short sea, infrastructure and natural resource support fleets. It seems that traditional equity topped with bank loan is currently only financing vehicles around in North-Europe (excl. Norway). In this model the lifetime revenue/cost is easily beautiful words only. With limited research on the topic it seems that only equivalent we can compare this region is North-America. There the fiscal tools are a lot further developed with Title XI, Marad vessels, Maritime Sealift etc. and true public private partnership is utilized to serve both sectors. In order for North-Europe to reach similar and even better tools and economic impact the lifecycle approach should be a lot more utilized.

The ROE for the investor, transport cost per unit for end-user, and NPV for service provider gives an opportunity to build win-win cases. Additionally the project based horizontal consortiums will make the case competitive and stronger for financing. For it to be strong the promises need to grow from value arguments into daily performance. Then the money should be there for healthy cases. Having said that, there is currently hesitation on first capital projects for post 2015 vessles. That could be assisted by local society in form of guarantees and junior notes for vessels in connection with local wellbeing. To move fast that could be some second hand ship acquisitions with conversion into environmentally friendly and fuel efficient asset. ■

*More information:*
*www.turkurepairyard.com*

# Bureau Veritas:
# Proud history as leading classification society in Finland

"Marine industry is trying to look forward all the time", observes Olli Kaljala, Country Chief Executive of Bureau Veritas Finland.

"More and more, we are seeing an energy-efficient future with strengthening environmental demands," says Kaljala.

"Sometimes it is also good to look back to history where there are milestones which changed the face of maritime. Among them, there are technical solutions which are built and maintained according to international rules and regulations based for safety."

Bureau Veritas has a long tradition to drawn upon, with operations in Northern Baltic Sea area having been largely coordinated from Finland which was once a part of Russia but at the same time autonomous country.

"It was the time of wooden ships. In Finland, in particular in Kristinestad in the second half of the 19th century, a large number of wooden sailing ships were classed by Bureau Veritas."

## SIX OFFICES IN THE NORTH

Today, the Bureau Veritas District Finland – Baltic Countries includes six offices: Helsinki, Turku, Tallinn, Riga, Klaipeda and Vilnius.

Bureau Veritas was established in Finland at an early stage. The society opened its first agency, with one surveyor in Turku, in 1858. In the 1870's there were already six surveyors in Finland, all of whom were not, however, permanent full time staff members. Their area of activity reached from Oulu in the North, along the Finnish coast all the way to Viborg, including Åland.

At that time, new sailing ships were increasingly classed, and shipbuilding flourished on the west coast, from Rauma north up to Oulu. Bureau Veritas was, in this context, in the leading position among classification societies in Finland.

Gradually, ships started to be built from steel. The Bureau Veritas rules followed the development and the surveyors were trained in the new technology. After the WW II, the activities continued through different agencies until Bureau Veritas' branch office was set up in Helsinki in 1984. ■

RISTO VALKEAPÄÄ

*Olli Kaljala with historic documents in the Helsinki office. For example, the Russian icebreaker Yermak (delivered in 1899), was classed by Bureau Veritas.*

# Wind Power Boosting The Vessels

***Oy Windside Production Ltd builds wind turbines for extreme conditions & demanding applications. Will hybrid-power ships put the wind back into shipping?***


**WINDSIDE TURBINES AS A PART OF FUTURE MARINE & OFFSHORE OPERATIONAL ENVIRONMENTS**

Over 30 years of design, engineering, manufacturing, and successful deployments to the world's most difficult terrain and most demanding environments proves beyond a doubt the quality & durability of Windside vertical wind turbines. Turbine systems have been deployed to Antarctica, North Sea, mountain tops, Sahara desert, Siberia, urban environments, and building integrated for LEED certification. The combination of robust but artistic look makes it possible to find new ways to use wind power.

Finland-based Oy Windside Production Ltd is a specialized manufacturer of robust, reliable vertical axis Windside wind turbine (VAWT) systems for extreme operating environments. The turbine generators provide AC/DC rectified power to charge batteries & provide power to DC electronics & systems. Joint consultation and design is critical to deliver the best solution for your needs and operational environment. ■

*More information: www.windside.com*

## Key Facts

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**25+ YEAR OFFSHORE LIFESPAN**

Built of heavy duty reinforced fiberglass, marine-grade aluminium, hardened steel, fully galvanized frames, high-quality bearings, and sealed electronics.

**UP TO 5 YEARS MAINTENANCE-FREE**

Optional automatic lubrication system extends maintenance intervals to 5 years

**SILENT, VIBRATION-FREE, AND SAFE**

Perfectly silent, less than 5dB & balanced for zero vibration. Safe to touch at all speeds.

PATENTED TECHNOLOGY
Member of IALA

# company directory

*Photo: Meyer Werft*

2 6 7 *See page 41*

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**Facts & Figures**
Personnel: 250
Established: 1889

**Specialty Areas**
ABB Marine and Cranes is the leading manufacturer of electric power, propulsion and vessel control systems. We are a global maritime organisation, providing reliable, safe and environmentally friendly solutions and qualified services to ship owners, operators and yards reducing operational costs and ensuring optimum vessel lifecycle.

8

## ABLEMANS OY

Härjänkurkuntie 46
FI-21250 Masku
Finland
Phone +358 2 439 6500
Fax +358 2 432 7441
ablemans@ablemans.fi
www.ablemans.fi

**Contact Person**
Timo Ylinen
Managing Director
timo.ylinen@ablemans.fi

**Facts & Figures**
Turnover: EUR 10 million
Personnel: 14
Established: 1987

**Specialty Areas**
Steel and Aluminium structures
Shipbuilding – Shiprepairing- Conversions – Outfitting. Large capacity.

1 2

## ACM-TRADING LTD

Ketunleivänkuja 4
FI-21110 Naantali
Finland
Phone +358 20 799 1400
Fax +358 20 799 1409
firstname.lastname@acm-trading.fi
www.acm-trading.fi

**Contact Person**
Kari U. Laiho

**Specialty Areas**
Complete PUSHPIN®-ATB-Coupler System for Pusher Tug and Barge combinations. Available models 2 or 3 pin executions, with electro-pneumatic or electro-hydraulic controls with modern PLC controls. New Model! PUSHPIN®-SliderRig – Coupler enabling to be engaged during loading and discharging. Pin forces from 150 Tons up to 3000 Tons, from River ATBs to Large Offshore ATBs, 11 systems in service. Concept design, Feasibility Studies and total installation engineering and supervision including class approvals with FEM-analysis. Electro-Hydraulic EHS Actuators for valve control and remote sounding systems with total BUSLoop systems for all kind of vessels. Cooling control systems for HT-, LT-, LO-, SW- etc. cooling circuits. Marine Pumps, Marine Butterfly valves in house already over 40 years experience.

1 6

## AKER ARCTIC TECHNOLOGY INC

Merenkulkijankatu 6
FI-00980 Helsinki
Finland
Phone +358 10 670 2000
Fax +358 10 670 2527
info@akerarctic.fi
www.akerarctic.fi

**Contact Person**
Mikko Niini
President
mikko.niini@akerarctic.fi

**Facts & Figures**
Turnover: EUR 7 million
Established: 2005
Parent Company: STX Finland Oy

**Specialty Areas**
Aker Arctic is running the only privately owned ice model testing facility in the world. The company continues the R&D work of the former Masa-Yards´ Arctic Technology Centre MARC in Finland, offering R&D services on maritime transport systems, ships, offshore structures and ports, ship and propulsion system design and ice navigation training.

8 *See page 9*

## ARCTECH HELSINKI SHIPYARD

Laivakatu 1
(P.O.Box 132)
FI-00151 Helsinki
Finland
Phone +358 10 622 20
Fax +358 10 622 2229
info@arctech.fi
www.arctech.fi

**Contact Person**
Esko Mustamäki, Managing Director
esko.mustamaki@arctech.fi

**Facts & Figures**
Personnel: 400
Established: 2010
Parent companies: STX Finland Oy and United Shipbuilding Corporation (50/50)

**Specialty Areas**
Arctech Helsinki Shipyard Inc. specialises in arctic shipbuilding technology and building of icebreakers, arctic offshore and other special vessels.

2 6

## AURAMARINE LTD.

P.O. Box 849
FI-20101 Turku
Finland
Phone +358 20 486 5030
Fax +358 20 486 5031
sales@auramarine.com
www.auramarine.com

**Facts & Figures**
Personnel: 100
Established: 1974
Parent Company: Hollming Ltd

**Subsidiaries & Representatives**
Auramarine Asia Ltd, China

**Specialty Areas**
Auramarine has wide-ranging experience in liquid flows and this craftmanship is utilised in designing and manufacturing of fuel oil supply systems, marine gas oil handling systems and ballast water treatment systems.

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2 5 6 7

## AUTROSAFE OY

Uranuksenkuja 10
FI-01480 Vantaa
Finland
Phone +358 9 2709 0120
Fax +358 9 2709 0129
autrosafe@autrosafe.fi
www.autrosafe.fi

**Contact Person**
Mikko Haapalainen
Managing Director
mikko.haapalainen@autrosafe.fi

**Facts & Figures**
Turnover: EUR 3,04 million
Personnel: 10
Established: 1995
Parent Company: Copertura Oy

**Specialty Areas**
Temperature sensors, pressure transducers. Fire alarm and Engine alarm systems. Wikrolux Led-technic based safety and guiding lights. Electrical sounders and flash alarms. Autrosafe Light Signal Columns.

1 2

## BEACON FINLAND LTD OY

P.O. Box 228
FI-26101 Rauma
Finland
Phone +358 2 8387 9500
Fax +358 2 8387 9510
beacon@beaconfinland.com
www.beaconfinland.com

**Contact Person**
Timo Rintala
timo.rintala@beaconfinland.com

**Facts & Figures**
Personnel: 12
Established: 1987

**Specialty Areas**
Ship Design Services; concept and basic design, strength and vibration analysis, design of tugs, pilot- and workboats
Equipment for Pusher-Barge combinations; design and manufacturing of JAK®- ATB Coupling System, mounting design & strength analysis
Solutions for Offshore Vessels; design and manufacturing of BeaCan™ Thruster Canister

1 9 *See pages 17 and 43*

## BUREAU VERITAS

Hermannin rantatie 10
FI-00580 Helsinki
Finland
Phone +358 10 830 8630
Fax +358 10 830 8690
helsinki@fi.bureauveritas.com
www.bureauveritas.com

**Contact Person**
Olli Kaljala
Chief Executive
olli.kaljala@fi.bureauveritas.com

**Facts & Figures**
Personnel: 65
Established: 1984 (Finland)
Parent Company: Bureau Veritas SA (est. 1828)

**Specialty Areas**
Survey of ships & ship equipment, classification of newbuildings
Inspection of industrial products & goods for international trade
Certification of management systems against international standards

4 *See page 11*

## CHAMPION DOOR

Pajatie 1
FI-85500 Nivala
Finland
Phone +358 8 445 8800
Fax +358 8 442 956
info@championdoor.com
www.championdoor.com

**Contact Person**
Jukka-Pekka Hakkarainen
Export Manager
jp.hakkarainen@championdoor.com

**Facts & Figures**
Turnover: EUR 6 million
Personnel: 40
Established: 1992

**Specialty Areas**
Very large fold-up shipyard doors, size of one door can be as large as 28 x 25 metres. Doors can also be manufactured in special frame-widths with no wind or size limitations.

2 4

## ELEKTROSKANDIA SUOMI OY

P.O. Box 360
FI-05801 Hyvinkää
Finland
Phone +358 10 509 311
Fax +358 10 509 3222
www.elektroskandia.fi

**Contact Person**
Juhani Lehtinen
Regional Director
SW Finland and Marine
juhani.lehtinen@elektroskandia.fi

**Facts & Figures**
Turnover: EUR 212 million (2012)
Personnel: 300 (2012)
Established: 1913
Parent Company: Rexel Group

**Specialty Areas**
Electrical wholesaling; Electrical items such as electrical installation materials, cables, cable racks, cable penetrations and seals
Also deliveries of all electrical items for marine business

9

## ENSTO ITALIA

*Saves Your Energy*

Via F. De Filippi 3
IT-20129 Milano
Italy
Phone +39 02 2940 3084
Fax +39 02 2952 4554
enstoitalia@ensto.com
www.ensto.com

**Contact Person**
Guglielmo Rutigliano
Sales Director
guglielmo.rutigliano@ensto.com

**Facts & Figures**
Turnover: EUR 260 million
Personnel: 1 600
Established: 1958
Parent Company: Ensto Group

**Specialty Areas**
Ensto's marine lighting products are designed for ship installations and can be customised to Customer's needs.

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2 6 7 See page 36

## EVAC OY

Sinimäentie 14
FI-02630 Espoo
Finland
Phone +358 20 763 0200
Fax +358 20 763 0222
firstname.lastname@evac.com
www.evac.com

**Contact Person**
Mika Karjalainen
mika.karjalainen@evac.com

**Facts & Figures**
Turnover: EUR 51,2 million

**Specialty Areas**
Evac is a global company. Evac designs, manufactures and markets environmentally friendly waste and wastewater collection and treatment systems for the shipbuilding and building industry. Skilled personnel, professional design and high-quality technical solutions have facilitated continuous growth, both in turnover and market share.

5

## EXIT-PAINIKE KY

P.O. Box 78
FI-61801 Kauhajoki
Finland
Phone +358 6 231 4034
Fax +358 6 231 4112
exitpainike@exitpainike.fi
www.exitpainike.fi

**Contact Person**
Timo Hakala

**Specialty Areas**
EXIT 6000 series emergency doors.
EXIT panic device)

7 8 9

## HOLLMING WORKS OY

P.O. Box 96
FI-28101 Pori
Finland
Phone +358 20 486 5040
Fax +358 20 486 5041
firstname.lastname@hollmingworks.com
www.hollmingworks.com

**Contact Person**
Markku Mänki
Managing Director

**Facts & Figures**
Turnover: EUR 68 million
Personnel: 550
Established: 2002
Parent Company: Hollming Ltd

**Specialty Areas**
In Sea, Offshore and SubSea section: Propulsion units, thrusters, nozzles, oilrig parts, anchor handling towing winches, secondary winches, streamer winches, gun winches, rudders, fairleads, subsea structures, pressure vessels and other demanding offshore constructions. Services also in Energy, Mineral, Process and Pulp&Paper sections.

1

## ILS LTD

Puutarhakatu 45
FI-20100 Turku
Finland
Phone +358 2 417 2200
Fax +358 2 417 2210
ils@ils.fi
www.ils.fi

**Contact Person**
Jyrki Lehtonen
Managing Director

**Specialty Areas**
Design of icebreakers and ice-going ships

2 7 9

## JOPTEK OY COMPOSITES

Kerantie 7-9
FI-81720 Lieksa
Finland
Phone +358 20 743 9150
Fax +358 13 523 710
info@joptek.fi
www.joptek.fi

**Contact Person**
Aku Lampola
Managing Director
aku.lampola@joptek.fi

**Facts & Figures**
Turnover: EUR 8,5 million (2011)
Personnel: approx. 90
Established: 1985

**Specialty Areas**
Modular balconies
Divider walls and handrails
Toilet and bathroom modules
Composite floors and walls
Sandwich structures

1 3 8

## JTK POWER OY

Teollisuustie 6
FI-66600 Vöyri
Finland
Phone +358 20 781 2313
Fax +358 6 361 0383
info@jtk-power.fi
www.jtk-power.fi

**Contact Person**
Timo Viitala
Managing Director
timo.viitala@jtk-power.fi

**Facts & Figures**
Turnover: EUR 20 million
Personnel: 73
Established: 1998

**Specialty Areas**
Large Diesel and Gas engines exhaust and intake silencers. Offshore-, paper- & pulp and other process industries large silencers. Also Valve seat inserts are manufactured for exhaust and intake valves, of both large and small diesel engines.

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2 7 See page 25

## JUKOVA OY

Jukovantie 20
FI-21430 Yliskulma
Finland
Phone +358 10 474 444
Fax +358 10 474 4290
jukova@jukova.fi
www.jukova.fi

**Contact Person**
Stefan Sundblom
stefan.sundblom@jukova.fi

**Specialty Areas**
Modular balconies
Sliding doors
Balcony divider walls
Glass railings

7

## KAEFER OY

Lehtimäentie 17
FI-21290 Rusko, Finland
Phone +358 2 437 9400
Fax +358 2 438 6692
kaefer@kaefer.fi
www.kaefer.fi

**Contact Person**
Janne Sirviö
janne.sirvio@kaefer.fi

**Facts & Figures**
Turnover: EUR 20 million
Personnel: 75
Established: 1977
Parent Company: KAEFER GmbH

**Subsidiaries & Representatives**
KAEFER OÜ, Estonia

**Specialty Areas**
Interior solutions for the shipyards and ship owners
Turnkey services for accommodation and public areas
All type of insulation services for marine industry

3 4

## KESKIPAKOVALU OY

Lastikankatu 21
FI-33730 Tampere
Finland
Phone +358 3 357 9000
Fax +358 3 364 5964
info@keskipakovalu.fi
www.keskipakovalu.fi

**Contact Persons**
Kimmo Markkula
Keijo Koivisto
Asmo Rantanen

**Facts & Figures**
Turnover: EUR 5,5 million
Personnel: 32
Established: 1956

**Specialty Areas**
Bronze parts of diesel engines
Bronze parts of propulsion machinery
Bronze parts of maneuvering machinery

2 6 7

## KOJA MARINE

P.O. Box 351
(Lentokentänkatu 7)
FI-33101 Tampere
Finland
Phone +358 3 282 5111
Fax +358 3 282 5404
marine@koja.fi
www.koja.fi

**Contact Person**
Esko Nousiainen, Director
esko.nousiainen@koja.fi

**Facts & Figures**
Turnover: EUR 32,7 million
Personnel: 182
Established: 1935
Parent Company: Koja Group

**Specialty Areas**
Air conditioning systems, air conditioning units
System design and material delivers
Cargo ventilation systems
Air Conditioning turn-key deliveries, HVAC electrical / automation systems

2 3 7

## KONEPAJA HÄKKINEN OY

Konekuja 4, FI-21200 Raisio, Finland
Phone +358 20 781 3400
Fax +358 20 781 3402
konepaja.hakkinen@konepajahakkinen.fi
www.konepajahakkinen.fi

**Contact Persons**
Mika Penttinen, Managing Director, mika.penttinen@konepajahakkinen.fi
Jukka Runola, Sales Director, jukka.runola@konepajahakkinen.fi

**Facts & Figures**
Turnover: EUR 46 million
Personnel: 360
Established: 1980
Parent Company: Konepaja Häkkinen Oy

**Subsidiaries & Representatives**
Tikkakosken Konepaja Oy and Rautpohjan Konepaja Oy

**Specialty Areas**
The most valued long term partner in supply of demanding machined casting, forging and welded steel components for a energy, inshore, offshore, subsea, maritime, mining, pulp and paper industries. Focus area medium and large size demanding components as well as small and medium batch products manufacturing's before mentioned industrial sectors."

2 6

## L & P LAAKSONEN & POIKA

Akselintie 1
FI-20200 Turku
Finland
Phone +358 2 515 4600
Fax +358 2 469 0861
contact@lplaaksonen.com
www.lplaaksonen.com

**Contact Person**
Harri Laaksonen
Managing Director

**Facts & Figures**
Turnover: EUR 1,2 million
Personnel: 9
Established: 1948

**Specialty Areas**
Lighting fitting for marine use
Decorative lighting fittings

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

3 9

## LAIVAKONE OY

Uranuksenkuja 1C
FI-01480 Vantaa
Finland

Posenerstr. 1a
D-23554 Lübeck
Germany

Phone +358 20 763 1570
Fax +358 20 763 1571
laivakone@laivakone.fi

**Contact Person**
Harri Elonen

**Facts & Figures**
Personnel: 20
Established: 1969

**Specialty Areas**
Ship engine repairs & services

4

## LAUTEX OY AB

P.O. Box 58
FI-03101 Nummela
Finland
Phone +358 9 224 8810
Fax +358 9 222 5447
sales@lautex.com
www.lautex.com

**Contact Persons**
Jarno Soinila, Sales Director, Phone +358 40 517 9502
Jussi Pärssinen, Sales Manager, Shipbuilding, Phone +358 400 268 851
Alexandru Filimon, Export Sales Manager, Phone +358 40 835 1804

**Facts & Figures**
Turnover: EUR 8 million
Personnel: 75
Established: 1951
Parent Company: Christian Berner Invest AB

**Specialty Areas**
Ceilings for ship accommodation and public spaces, such as metal panels, profiles, tiles and grating in aluminium or steel
Special ceilings, domes and beams etc.
Various finishes possible: real wood finish, digital coating etc.

1 *See page 37*

## LLOYD'S REGISTER EMEA

Aleksanterinkatu 48 A
FI-00100 Helsinki
Finland
Phone +358 20 791 8300
Fax +358 20 791 8301
helsinki@lr.org
www.lr.org

**Contact Persons**
Päivi Björkestam, Field Operations Manager
Chris Ridgewell, Marine Client Manager

**Facts & Figures**
Personnel: 30
Established: 1957 (Finland)
Parent Company: Lloyd's Register Group Limited

**Specialty Areas**
Ship and offshore: newbuilding & periodical surveys
Industrial inspections and certification
Consultancy

2 3 6 7

## MARINE DIESEL FINLAND OY

Eteläkaari 10
FI-22420 Lieto
Finland
Phone +358 20 711 8220
Fax +358 2 253 9121
marine.diesel@wihuri.fi

**Contact Persons**
Markus Hjerppe
Mika Aaltonen

**Facts & Figures**
Personnel: 40
Established: 1992

**Specialty Areas**
Main- and auxiliary engine repair and service
Total overhaul of all type of engines
Mechanical engineering
On-site machining
Conservation works after engine room fire or flooding
Well equipped workshop in Turku area and in Helsinki
CAT AMD, Kemel seals and bearings, Ingersoll Rand service

2 7 9

## OY MATATEC SERVICES AB

Länsilaituri 1
FI-20200 Turku
Finland
Phone +358 2 250 1852
Fax +358 2 250 1853
matatec@netti.fi
www.matatec.com

**Contact Person**
Magnus Ekman
magnus.ekman@matatec.fi

**Facts & Figures**
Established: 1983

**Specialty Areas**
Voyage Repairs and Maintenance on board, in ports, alongside yards
Berth
Upgrading and retrofits services for OEM partners

2 7 *See page 39*

## MERIMA OY

Tatti 10
FI-00760 Helsinki
Finland
Phone +358 9 350 9300
Fax +358 9 388 2133
contact@merima.fi
www.merima.fi

**Contact Person**
Ari Nylund
Export Manager

**Facts & Figures**
Turnover: EUR 25,5 million (2011)
Personnel: 60 (2011)
Established: 1987

**Specialty Areas**
Turn-key interior outfitting for cruise ships, ferries and Ro-pax vessels.
Cabin furniture deliveries

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

4 7

## METALLIASENNUS HUUHKA OY

Korpelantie 229
FI-21570 Sauvo
Finland
Phone +358 2 477 2900
Fax +358 2 477 2921
www.huuhkaoy.com

**Contact Person**
Pertti Huuhka
pertti.huuhka@huuhkaoy.com

**Facts & Figures**
Turnover: EUR 7,3 million
Personnel: 34
Established: 1987

**Subsidiaries & Representatives**
Pocadel Oy, Finland

**Specialty Areas**
Interior materials and outfit
Turnkey deliveries; shopping areas, restaurants, conference areas etc.
Fire door installations

2

## METOS OY AB

Ahjonkaarre
FI-04220 Kerava
Finland
Phone +358 20 439 13
Fax +358 20 439 4432
metos.marine@metos.com
www.metos.com

**Contact Person**
Taina Salonen
Director
taina.salonen@metos.com

**Facts & Figures**
Personnel: 700
Established: 1922
Parent Company: Ali Group

**Specialty Areas**
Galley equipment
Laundry equipment

4

## METSO MINERALS OY LOKOMO STEEL FOUNDRY

P.O. Box 306 (Lokomonkatu 3)
FI-33101 Tampere
Finland
Phone +358 20 484 4222
Fax +358 20 484 4233
minerals.lokomosteels@metso.com
www.metsolokomosteels.com

**Contact Person**
Timo Norvasto, Sales Manager
timo.norvasto@metso.com

**Facts & Figures**
Personnel: 250
Established: 1916
Parent Company: Metso Corporation

**Specialty Areas**
Lokomo Steel Foundry has been a pioneer in stainless steel production. In 1982 Metso Lokomo Steels began to manufacture vacuum steel castings using world's first "Vacuum Oxygen Decarburization Converter" VODC. Lokomo Steel Foundry's vacuum steel is marketed under the Vaculok® -trademark. Metso Minerals Oy Lokomo Steel Foundry is a member of Metso Corporation.

2

## OY NAUTI-ELECTRONICS AB

Motorgatan 11
FI-65170 Vaasa
Finland
Phone +358 6 317 2911
Fax +358 6 317 2912
sales@nautiele.fi
www.nautiele.fi

**Contact Person**
Leif Hagner
leif.hagner@nautiele.fi

**Facts & Figures**
Turnover: EUR 1 million
Established: 1983

**Specialty Areas**
Marine Electronics
Navigation
Communication
Interfaces

3

## OILON OY

P.O. Box 5
FI-15801 Lahti
Finland
Phone +358 3 857 61
Fax +358 3 857 6239
www.oilon.com

**Contact Person**
Jani Kurikka
jani.kurikka@oilon.com

**Facts & Figures**
Turnover: EUR 70 million
Personnel: 360
Established: 1961

**Specialty Areas**
Oil & gas burners for marine applications

7

## PARMARINE OY

Cabins and bathrooms:
P.O. Box 95
FI-30101 Forssa, Finland
Phone +358 3 777 7400
sales.marine@parmarine.fi
www.parmarine.fi

Fire doors:
P.O. Box 22
FI-79101 Leppävirta
Finland
Phone +358 17 570 211
sales.master@parmarine.fi

**Contact Person**
Risto Kallio
risto.kallio@parmarine.fi

**Specialty Areas**
Cabins and bathrooms
A60 hinged and sliding fire doors
A 60 SWT and LWT sliding fire doors
A60 fire walls
B15 cabin doors

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2 3

## PATRIA AVIATION ENGINE BUSINESS UNIT

Linnavuorentie 2
FI-37240 Linnavuori
Finland
Phone +358 40 869 2800
Fax +358 20 469 2801
www.patria.fi

**Contact Person**
Seppo Tamminen, Senior Manager
Diesel Engine Business
seppo.tamminen@patria.fi

**Facts & Figures**
Turnover: EUR 18 million
Personnel: 160
Established: 1947
Parent Company: Patria Oyj

**Specialty Areas**
Maintenance and overhaul of high speed diesel engines and related equipment up to 6 000 kW
Authorised MTU Service dealer
Maintenance and overhaul of industrial and marine gas turbines
Special repairs of parts for diesel engines and gas turbines

9

## PEDRO OY

Tehdastie 4-6
FI-15560 Nastola
Finland
Phone +358 3 873 900
Fax +358 3 873 9010
www.pedro.fi

**Contact Person**
Juha Lehtonen
Managing Director
juha.lehtonen@pedro.fi

**Facts & Figures**
Turnover: EUR 2,4 million
Personnel: 22
Established: 1988

**Specialty Areas**
Special furniture's for ships and hotels

2 9

## POCADEL OY

Korpelantie 229
FI-21570 Sauvo
Finland
Phone +358 2 477 2950
Fax +358 2 477 2971
pocadel@pocadel.fi
www.pocadel.fi

**Contact Person**
Markku Riekki
markku.riekki@pocadel.fi

**Facts & Figures**
Personnel: 12
Established: 1997

**Specialty Areas**
B15 and A60 fire rated glazings: - single doors - double doors - windows and glazed walls - B15 sliding doors

2 7

## PORKKA FINLAND OY

P.O. Box 127
FI-33101 Tampere
Finland
Phone +358 20 555 512
Fax +358 20 555 5288
www.porkka.fi

**Contact Person**
Petri Hiilloste
porkkapanel@huurre.com

**Facts & Figures**
Turnover: EUR 26 million
Personnel: 170
Established: 1962
Parent Company: Huurre Group Oy

**Specialty Areas**
Provision stores
Walk-in rooms in galleys/pantries Insulated doors
Insulated fire doors
A60, for cold stores

3 6 7

## PROJEKTIA OY

Tuulissuontie 21
FI-21420 Lieto
Finland
Phone +358 2 477 9200
Fax +358 2 477 9210
projektia@projektia.fi
www.projektia.fi

**Contact Person**
Paavo Mikkola
paavo.mikkola@projektia.fi

**Specialty Areas**
Turnkey deliveries of provision refrigeration; machinery and coolers
Pipe installations and automation
Cooling machinery for technical spaces and air condition
Water chillers
Unic service concept developed especially for fast moving transport

2 3 6 7

## PROMECO GROUP OY

P.O. Box 116 (Mettälänkatu 91)
FI-38701 Kankaanpää, Finland
Phone +358 20 759 5300
Fax +358 20 759 5301
promeco@promeco.fi
www.promeco.fi

**Contact Person**
Ville Ritakorpi, Sales Manager
ville.ritakorpi@promeco.fi

**Facts & Figures**
Turnover: EUR 56 million
Personnel: 420
Established: 2008

**Subsidiaries & Representatives**
KMT Group Oy, Finland, Promeco S.A., Poland, JAT-Asennus Oy, Finland, VM-Group Oy, Finland, Promeco Solutions Oy, Finland

**Specialty Areas**
Main switchboards, Motor starters, Cyclo converters, Electricity distribution centers, Data transfer control systems, Propeller control systems, Steering modules, Mech. and electr. engineering, FSW

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2

## PUTTEK OY

Jokitie 8
FI-37800 Toijala
Finland
Phone +358 40 832 0502
Fax +358 3 575 2550
info@puttek.fi
www.puttek.fi

**Contact Person**
Harri Syrjäläinen
Managing Director
harri.syrjalainen@puttek.fi

**Specialty Areas**
Pipe clamps and supporting systems for shipbuilding and offshore industry

7

## RAUMA INTERIOR OY

Hallitie 8
FI-26510 Rauma
Finland
Phone +358 2 8387 8200
Fax +358 2 8387 8210
info@raumainterior.fi
www.raumainterior.fi

**Contact Person**
Kari Wendelin
Managing Director
kari.wendelin@raumainterior.fi

**Specialty Areas**
Designed fixed and free-standing Furniture in various Materials especially for Passenger & Crew Cabins, but also for Restaurants, Nightclubs, Coffee Shops, Conference Rooms (Wardrobes & Racks, Dressing Tables, Cabinets, Coffee Tables, Desks, TV-stands, Beds in Wood and Metal, Nightstands, Sofas, Resin Coated Dining Tables, Bar desks, Decorative Columns etc.)

1 4 5 7

## RENOTECH OY

Sampsankatu 4 B
FI-20520 Turku, Finland
Phone +358 10 830 1600
Fax +358 2 254 3745
rt@renotech.fi
www.renotech.fi

**Contact Person**
Bob Talling, +358 50 558 1806
bt@renotech.fi

**Facts & Figures**
Turnover: EUR 1 million
Personnel: 5
Established: 1994

**Specialty Areas**
MED Certified products, B + D. GRG decorative wall and ceiling elements, mouldings and sculpture work. DGG light-weight gypsum board. Renopur decorative surface finishes, paint effects, marbling, wood graining, gilding, paintings and art work. Stonemix textured mouldings and finishes. Renofix non-combustible glues. Fireshield acoustic and fire proofing. RenoImage silk printing and 3-D release films. Acoustic flooring and floor screeds. B-15 elements and draught stop.

2

## ROLLS-ROYCE OY AB

P.O. Box 220
FI-26101 Rauma
Finland
Phone +358 2 837 91
Fax +358 2 8379 4804
rolls-royce.finland@rolls-royce.com
www.rolls-royce.com/marine

**Contact Person**
Liisa Snellman
Communications
liisa.snellman@rolls-royce.com

**Facts & Figures**
Turnover: EUR 523 million
Established: 1988
Parent Company: Rolls-Royce plc

**Subsidiaries & Representatives**
Rolls-Royce worldwide sales and service network

**Specialty Areas**
Thrusters, propulsion systems, winch systems, stabilizers, steering gears, bearings

4

## SAINT-GOBAIN RAKENNUSTUOTTEET OY

P.O. Box 250 (Kerkkolankatu 37-39)
FI-05801 Hyvinkää
Finland
Phone +358 20 775 50
Fax +358 20 775 5321
firstname.lastname@saint-gobain.com
www.isover.fi

**Contact Person**
Matti Reijonen
Sales Manager

**Facts & Figures**
Turnover: EUR 119 million
Personnel: approx. 400
Established: 1941
Parent Company: Saint-Gobain

**Specialty Areas**
Saint-Gobain Rakennustuotteet Oy / ISOVER manufactures and sells mineral insulation products for heat insulation, sound reduction, and fire protection on ships. Additional information regarding the new fire insulations is available at: www.isover-ultimate.com

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## S.A. SVENDSEN OY

Särkiniementie 3 B
FI-00210 Helsinki
Finland
Phone +358 9 681 1170
Fax +358 9 6811 768
www.sasvendsen.com

**Contact Person**
Kimmo Räisänen
Managing Director
kimmo.raisanen@sasvendsen.com

**Facts & Figures**
Turnover: EUR 13,7 million
Personnel: 6
Established: 1981

**Specialty Areas**
Complete turnkey deliveries for cruise ships and ferries
Interior materials and custom made interior modules
Refurbishments and refits for cruise ships and ferries

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2 4 9

## SBA INTERIOR LTD

Hållsnäsintie 99
FI-10360 Mustio
Finland
Phone +358 19 327 71
sales@sba.fi
www.sba.fi

**Contact Persons**
Thomas Pökelmann, Sales Manager
thomas.pokelmann@sba.fi
Johan Fagerlund, Technical Director
johan.fagerlund@sba.fi

**Facts & Figures**
Turnover: EUR 10,5 million
Personnel: 70
Established: 1985

**Specialty Areas**
SBA Interior is specialised in accommodation paneling and different types of beds for marine applications.
Latest development is a 50mm thin A-60 class light weight non-bearing bulkhead panel and a 20mm B-15 class Extension Screen.
Another branch of SBA is subcontracting for metal industry.

4 7

## SELKA-LINE OY

Harjuviidantie 3
FI-15550 Nastola
Finland
Phone +358 3 882 610
Fax +358 3 882 6110
www.selka.fi

**Contact Person**
Ismo Räty
Managing Director
ismo.raty@selka.fi

**Facts & Figures**
Turnover: EUR 3,2 million
Personnel: 20
Established: 1985

**Specialty Areas**
Selka-Line Oy manufactures high quality furniture for ships and contract use. We produce custom made furniture in various materials and we can offer wide range of standard products for Restaurants, Nightclubs, Coffee Shops, Conference Rooms etc.

9

## SHIPPAX OY

Telakkatie 5
FI-23500 Uusikaupunki
Finland
Phone +358 2 468 812
Fax +358 2 468 8307
info@shippax.fi
www.shippax.fi

**Contact Person**
Juha Lahtivuori
Technical Director
juha.lahtivuori@shippax.fi

**Facts & Figures**
Turnover: EUR 15 million
Personnel: 44
Established: 1984

**Specialty Areas**
Fixcelmarine Macro Modules
Turn key deliveries
High Gienic™ products
Complete multi storey offshore living quarters

9

## OY SIKA FINLAND AB

P.O. Box 49
FI-02921 Espoo
Finland
Phone +358 9 511 431
Fax +358 9 5114 3300
sika.finland@fi.sika.com
www.sika.com

**Contact Person**
Kai Winqvist
Industry Manager
winqvist.kai@fi.sika.com

**Facts & Figures**
Turnover: EUR 16 million
Personnel: 35
Established: 1985
Parent Company: Sika AG

**Specialty Areas**
Sealing – Bonding – Acoustic Damping – Reinforcing - Protecting

3

## STEERPROP LTD

P.O. Box 217
FI-26101 Rauma
Finland
Phone +358 2 8387 7900
Fax +358 2 8387 7910
steerprop@steerprop.com
www.steerprop.com

**Specialty Areas**
Azimuth Propulsors for demanding applications
Steerprop Ltd. combines the reliability of proven technologies with the efficiency of modern design to produce azimuth propulsors of exceptional quality and excellent reliability. Steerprop Azimuth Propulsors can be made up to 20 MW in power or even in the most stringent ice-classes.

1 8

## STX FINLAND OY

P.O. Box 666
(Telakkakatu 1)
FI-20101 Turku
Finland
Phone +358 10 6700
Fax +358 10 670 6700
finland@stxeurope.com
www.stxfinland.com

**Specialty Areas**
STX Finland Oy has three shipyards in Finland: Turku Shipyard, Rauma Shipyard and Arctech Helsinki Shipyard inc., of which STX Finland Oy owns 50 percent. The Turku Shipyard is the experienced builder of cruise ships and other technically demanding specialised ships and offshore units. The Rauma Shipyard is known for ferries, research vessels, naval ships and multipurpose vessels. The shipyard in Helsinki is specialised in ice-breaking and ice-going offshore and arctic vessels. STX Finland's subsidiaries are Aker Arctic Technology Oy, STX Finland Cabins Oy, Shipbuilding Completion Oy and ENG´n´D Oy. The number of personnel in STX Finland Oy amounts to some 2 250 employees.

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

2

## TEBUL OY

Luumäentie 2
FI-21420 Lieto
Finland
Phone +358 50 540 6031
Fax +358 2 489 9299
sales@tebul.fi
www.tebul.fi

**Contact Person**
Jussi Uusitalo
Managing Director
sales@tebul.fi

**Specialty Areas**
TEBUL OY has been designing and manufacturing watertight bulkhead sliding doors since 1961. Our self-tightening 24VDC fully electric watertight bulkhead sliding door is a fourth-generation product. The primary self-tightening is based on metal to metal contact with rubber seals for initial tightening. The higher the pressure, the larger the force exerted on the door. Tebul doors are approved to be installed into A-60 bulkheads. Tebul doors are available also in the Eex-version, for Explosion Hazardous areas.

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## TEKNIKUM OY

P.O. Box 13
FI-38211 Vammala
Finland
Phone +358 3 519 11
Fax +358 3 514 3137
marketing@teknikum.com
www.teknikum.com

**Contact Person**
Mikko Esko
+358 50 524 3480

**Facts & Figures**
Turnover: EUR 50 million
Personnel: 400
Established: 1989
Parent Company: Teknikum Group Ltd.

**Specialty Areas**
Rubber lining for steel pipes aganst seawater corrosion
Compressed rubber hoses, bellows and connection hoses for shipbuilding and offshore industry
Moreover we offer customised rubber products for different stages of all industry.

2 3 9

## TEVO OY

Hiientie 17
FI-92160 Saloinen
Finland
Phone +358 8 265 8800
Fax +358 8 265 8805
tevo@tevo.fi
www.tevo.fi

**Contact Person**
Marjatta Pyhtilä
Export Assistant
marjatta.pyhtila@tevo.fi

**Facts & Figures**
Turnover: EUR 21 million
Personnel: 120
Established: 1974

**Specialty Areas**
Manufacture and service of Bronze Marine Propellers up to 10 m diameter
Offshore steel constructions and special welding
Heavy steel machine building
Manufacture of TEVO Spreader rolls and overhaul

2 4

## TRAFOTEK OY

Kaarinantie 700
FI-20540 Turku
Finland
Phone +358 2 275 9200
Fax +358 2 275 9210
info@trafotek.fi
www.trafotek.fi

**Contact Person**
Timo Heikkinen
timo.heikkinen@trafotek.fi

**Facts & Figures**
Turnover: EUR 70 million
Personnel: 400
Established: 1983

**Specialty Areas**
Ship and offshore transformers up to 12 MVA
Electrical filters and reactors

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*See page 42*

## TURKU REPAIR YARD LTD

P.O. Box 212
FI-21101 Naantali
Finland
Phone +358 2 445 11
Fax +358 2 445 1407
try@turkurepairyard.com
www.turkurepairyard.com

**Contact Person**
Vesa Marttinen
Managing Director
vesa.marttinen@turkurepairyard.com

**Facts & Figures**
Turnover: EUR 20 million
Personnel: 100
Established: 1989

**Specialty Areas**
Dockings, heavy steel work, heavy machinery work, interior work, surface treatment, annual service and maintenance, 24h Voyage repairs.

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## UUDENKAUPUNGIN TYÖVENE OY

Telakkatie 8
FI-23500 Uusikaupunki
Finland
Phone +358 2 846 4600
Fax +358 2 841 4347
tyovene@tyovene.com
www.tyovene.com

**Contact Person**
Jouko Honkala

**Facts & Figures**
Turnover: EUR 30 million approx.
Personnel: 80
Established: 1987

**Specialty Areas**
Building of aluminium workboats, such as Pilot Cutters, Oil Combat Vessels, Service Ships for Channels
Building of small steel vessels, such as Road Ferries, Offshore Patrol Vessels, Passenger Vessels for commuter traffic

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

4

## VALLILA INTERIOR OY

Nilsiänkatu 15
FI-00510 Helsinki, Finland
Phone +358 20 776 7700
Fax +358 20 776 7701
projekti@vallilainterior.fi
www.vallilainterior.fi

**Contact Person**
Miku Berner
miku.berner@vallilainterior.fi

**Facts & Figures**
Turnover: EUR 37 million
Personnel: 135
Established: 1935

**Subsidiaries & Representatives**
Vallila Interior International

**Specialty Areas**
Textile design
Textile full turnkey solutions, measuring, sewing, installation
All system solutions, electrical and manual
Large collections on Imo certified fabrics

1 5

## VTT TECHNICAL RESEARCH CENTRE OF FINLAND

P.O. Box 1 000
FI-02044 VTT
Finland
Phone +358 20 722 4294
Fax +358 20 722 4815
www.vtt.fi

**Contact Person**
Seppo Kivimaa
Vehicle Engineering
seppo.kivimaa@vtt.fi

**Facts & Figures**
Turnover: EUR 269 million
Personnel: 3 152
Established: 1942

**Specialty Areas**
R&D services. In vehicle engineering VTT offers expertise in model and full-scale tests, computational fluid dynamics, structural monitoring, structural integrity and dynamics, maritime simulations and virtual prototyping, maritime safety and environmental engineering, small craft design analysis, hydraulics.

1 2 6 7 *See page 36*

## WATMAN ENGINEERING LTD OY

Laatukatu 16
FI-15680 Lahti
Finland
Phone +358 20 741 7255
Fax +358 3 752 2750
engineering@watman.fi
www.watman.fi

**Facts & Figures**
Turnover: EUR 2-3 million
Personnel: 10
Established: 1995
Parent Company: Pumppulohja Oy

**Specialty Areas**
Water treatment, desalination, RO-units, waste water treatment
Pressure vessels and storage tanks, tube heat exchangers, pumps, water management

2 4 5 6

## WENDA OY

Tuulissuonkuja 1
FI-21420 Lieto, Finland
Phone +358 2 487 0258
Fax +358 2 487 0268
sales@wenda.fi
www.wenda.fi
www.icestop.fi

**Contact Person**
Jan Forsbom
Managing Director
jan.forsbom@wenda.fi

**Facts & Figures**
Established: 1995

**Specialty Areas**
Wenda ltd. specialises in composite technology. The Company designs and manufactures lightweight structures and products for ships according to customer specifications. The latest additions to Wenda shipboard products include a new type of deck seat, a new deck light fixture, a brand new life jacket container product line and IceStop ice prevention system. IceStop is a unique system to keep decks unfrozen on arctic ships.

2 *See page 44*

## WINDSIDE PRODUCTION OY LTD

Keskitie 4
FI-44500 Viitasaari
Finland
Phone +358 20 835 0700
Fax +358 20 835 0701
finland@windside.com
www.windside.com

**Contact Person**
Sara-Maaria Asp
Export Manager
sara@windside.com

**Specialty Areas**
Windside wind turbines for battery charging are safe, soundless and ecological solution for energy production wherever energy is needed. They meet the requirements of the demanding professional use in the harshest of environments. Their unique features ensure reliability, high efficiency, long life span, durability and an absolute minimum of maintenance. All the advantages of the turbine together with the beautiful design, enables almost limitless use of Windside.

4

## YIT INDUSTRIA OY

P.O. Box 27
(Lemminkäisenkatu 59)
FI-20521 Turku
Finland
Phone +358 20 433 111
Fax +358 20 433 7251
www.yit.fi

**Contact Person**
Markku Salonen
markku.salonen@yit.fi

**Facts & Figures**
Turnover: EUR 300 million
Personnel: 3 500
Established: 1920
Parent Company: YIT Corporation

**Specialty Areas**
Prefabricated pipes
Pipe modules
Electrical and steel outfitting

1. Consulting
2. Equipment
3. Machinery
4. Materials
5. Safety
6. Systems
7. Turnkey Deliveries
8. Yards
9. Other

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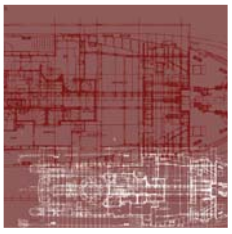



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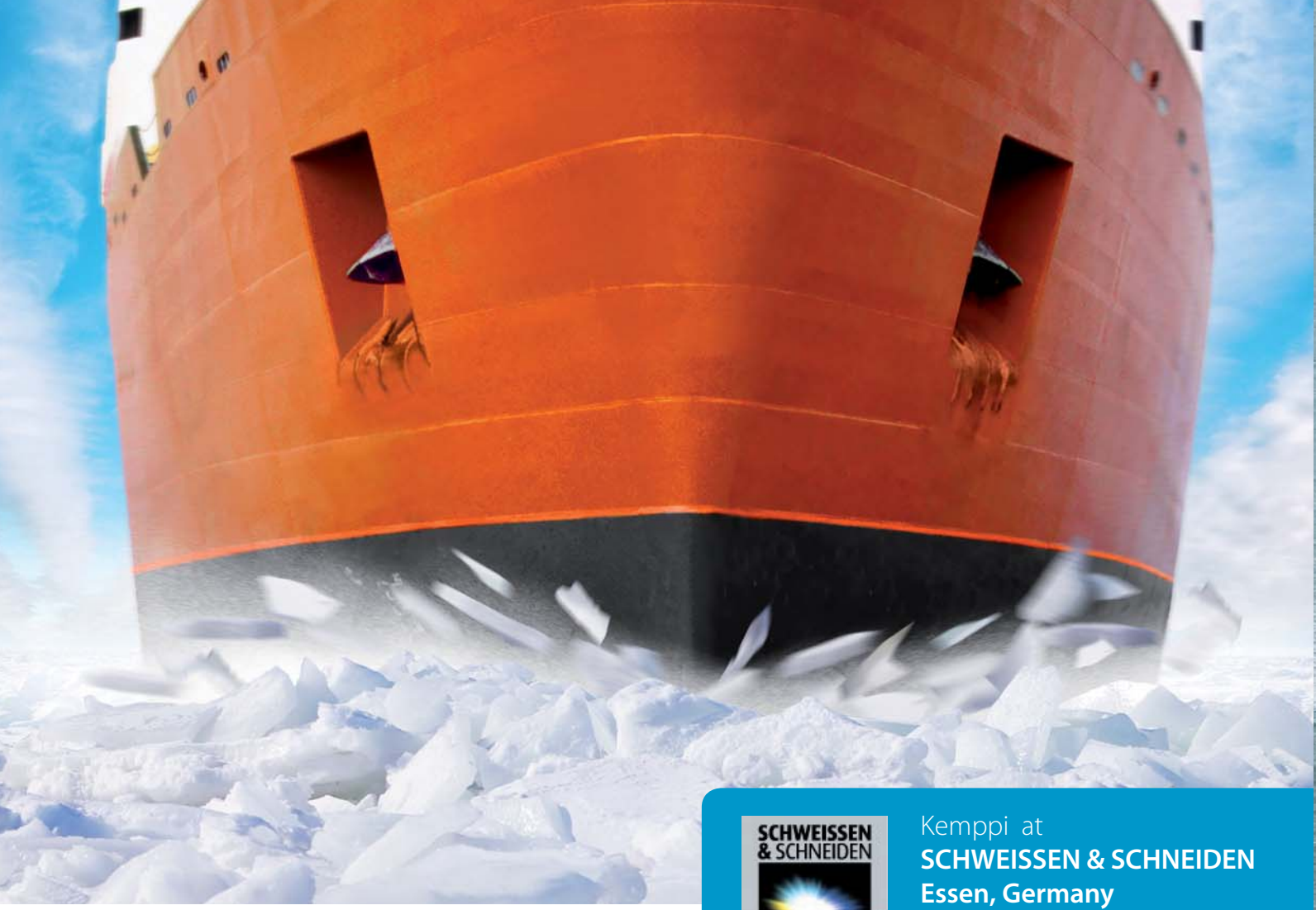

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