

Well-Placed on the Offshore Market



Accommodation and service vessel "Edda Fides" (photo: Øyvind Sætre)

OFFSHORE - Taking advantage of the booming offshore market, the SAM Group has won a considerable number of orders in a wide range of areas. Key factors in this success include the company's broad technology base and its international setup including subsidiaries and partner companies in Europe, Asia and America.

L-3 Valmarine, SAM's affiliated partner company in Norway, was commissioned to equip a whole series of state-of-the-art offshore construction and platform supply vessels with integrated navigation systems which meet the high class requirements of this segment. One outstanding project was the 157-meter long "Skandi Aker", which was voted Ship of the Year at SMM 2010. It is one of the world's most advanced offshore multi-purpose vessels and is operated by Aker Oilfield Services. The ship was built by STX Europe's Norwegian shipyard Søviknes. L-3 Valmarine supplied the entire navigation package comprising two X-band and S-band chart radars with integrated Trackpilot and three Chartpilots with ECDIS and conning functions, a planning station and various navigation sensors.

Norwegian shipping company Solstad has decided to equip a further new build of its fleet with the recently launched integrated vessel control system NACOS Platinum, for which the Group has already received numerous orders. The network-based system, which is also ideal for state-of-the-art bridge systems on offshore vessels, consists of an S-band and an X-band IP radar, which are connected via an Ethernet network to seven

multi-functional multipilot workstations, including the bridge wing and aft bridge. Each of these workstations can be used as standard as a radar or ECDIS including conning functions. Using dual-head technology, which enables simultaneous function processing, the conning system can run on a second display while the master station operates in ECDIS mode. In addition to the Trackpilot for accurate tracking, the company also supplied the new SAM 3410 AIS transponder, VDR 4350, Echosounder and DGPS, which are connected directly to the network system. The new 94 m-long platform supply vessel is to be delivered by the STX Europe's shipyard in Langsten at the end of 2011.

The 130m-long accommodation service vessel "Edda Fides", recently delivered to the Norwegian Østensjø Rederi by the Spanish shipyard Astellieros HJ Barreras, Vigo, was also equipped with an integrated navigation system comprising an S-band and an X-band radar, three multipilot workstations connected to the bridge wing, and two Chartpilot stations. Each of these multipilot workstations can be used as standard as a radar or ECDIS including conning functions. Additional navigation systems were supplied alongside the Trackpilot for accurate tracking and VDR 4350. The ship is designed to transport around 600 people to and from platforms located in the North Sea.



Bridge of the "Skandi Aker" (photo: STX Europe)

Alongside the extraction of fossil fuels for the energy industry, power generation from offshore wind turbines is playing an increasingly important role in the future-focused provision of renewable energy and climate policy.

Numerous construction vessels will be needed for the transportation and construction of wind turbines. SAM has received several large orders to supply integrated navigation systems, complete electrical packages and

comprehensive drive systems. This includes the construction vessel for RWE Innogy, which is scheduled to be taken into operation at Daewoo Shipbuilding & Marine Engineering (DSME) at the end of 2011. SAM's subsidiary L-3 Marine Systems Korea is equipping this special vessel - measuring 109 meters long and 40 meters wide - with the integrated NACOS Platinum navigation system and the dynamic positioning system from L-3 DP&CS in the USA.



Offshore wind farm construction vessel (Photo: RWE Innogy)

Offshore wind turbines are exposed to much tougher weather conditions than their counterparts on land, which means they also have to be fitted, among other things, with fully automated safety systems. FUNA Global Safety Systems, a subsidiary of FUNA International, recently acquired by SAM, supplies customized fire prevention concepts for onshore and offshore energy systems. These energy systems are afforded reliable protection by a networked solution comprising, e.g. public address, smoke extraction, video surveillance and communication systems combined with an intelligent fire alarm system and a specially adapted extinguishing concept.

Successful Completion of OPV Program in Malaysia

TURNKEY - The contract agreed between the PSC-NDSB shipyard, ATLAS Elektronik and SAM Electronics on March 6, 1999 for the delivery of electrical systems and degaussing for six patrol vessels of the Royal Malaysian Navy was brought to a successful completion at the end

of the shipyard in Lumut, Malaysia, for completion. For this purpose, a supervision and coordination office comprising the SAM project team members and local staff from the joint venture company founded for this project was set up at the shipyard in Lumut to coordinate the administration, warehousing, supervision and startup activities for the first two new vessels.

customer and the partners that made this know-how transfer possible and ensured the overall success of this project - from installation right through to startup. The long project runtime resulted largely from an interruption of around 18 months starting around the end of 2005, when PSC-NDSB was taken over by the Boustead Naval Shipyard. This company resumed construction of ships 3-6 as of mid-2007.



Taking the OPV on a test drive

of November 2010. The sixth ship - "KD Selangor" - was handed over to the Royal Malaysian Navy at the end of December 2010. SAM was commissioned with supplying a comprehensive electrical package comprising an energy distribution system configured for navy vessels via two redundant main switchboards, main and weapon groups, motor control center, single starter, 24 V DC uninterruptible power supply system, 400 Hz converters, a fire detection system, various command and signaling systems and the entire cable and lighting equipment.

As part of the know-how transfer process and the "Malaysian Industrial Participation (MIP)" agreed for this project, a local partner was found to carry out the installation work. The four remaining ships were then built entirely in Malaysia, with SAM commissioning and implementing the production of various distribution and switching components locally in Malaysia as part of the MIP agreement. With the ships now being built partly in parallel, the installation work for the cable and lighting equipment took place in a well-established partnership involving up to 150 local employees. Assembly time for the installation of the cable and lighting equipment amounted to more than half a million hours in total.

SAM's commitment in Malaysia has led to the emergence of new partnerships in the region. As a result of these developments, it will be possible in the future to complete other projects for electrical equipment in Malaysia with a high level of local production and value creation. This project provided impressive proof of SAM's expertise and market leadership in integrated system solutions.

Two ships were equipped as far as possible at the Blohm+Voss shipyard in Hamburg before being transported by docking vessel to Malaysia from mid-2003, where they were finalized, approved and handed over to

It was the technical expertise and social skills demonstrated by the SAM team and the excellent cooperation shown at all levels between the



SAM's on-site project team

Technology Leadership Through Innovation

ENERGY SAVINGS - Based on over 40 years of experience and the installation of over 400 systems with power outputs ranging from 200 to 4,500 kW, SAM is expanding its market leadership in shaft alternators.



Shaft alternator mounted in the propeller shaft line

Following the report in Issue 4/2008 on the world's first medium-voltage shaft alternators - direct on 6.6 kV main voltage level - the medium-voltage converter is now also being put through its paces in state-of-the-art PWM technology at the testfield on Behringstrasse. Classification and customer approval have already taken place. Nine further systems are being delivered to South Korea for a new series. The system tests represent a real logistical challenge due to the dimensions and weight of the components.

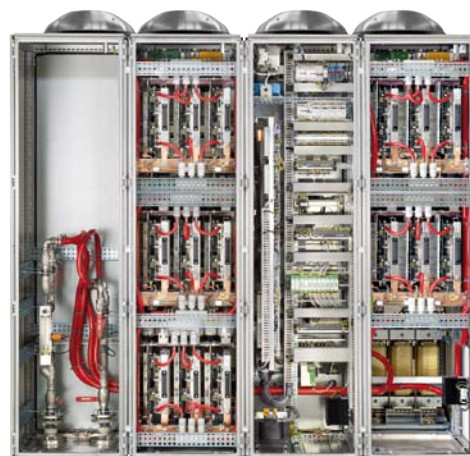
A short time ago, SAM was able to dispense with the synchronous compensators and components used to compensate harmonics by equipping its converters with cutting-edge PMW technology. Since then, this technology has gone from strength to strength and is proving very popular with customers. This success is confirmed by orders for 31 MW from China, South Korea and Europe, with 17 of these being received in the first four months of 2011 alone. These initial orders are accompanied by 12 options, which should be converted into fixed orders during 2011/2012. The orders were won in the face of tough national and international competition

and they reflect the trust that shipyards and shipping companies place in the technical expertise of SAM and its recognized product partners for electrical equipment and converters. Further promising projects demonstrate the strong demand for these kinds of system solutions.

Innovative further developments are taking center stage in the realization of these solutions with the aim of maintaining SAM's technology leadership and offering customers maximum added value. The latest

development combining advanced PWM technology with fourth-generation IGBT (insulated-gate bipolar transistor) modules in low-voltage converters gives rise to smaller converter dimensions coupled with higher power output. This represents another competitive advantage, increasing system efficiency considerably to over 90%.

In view of rising fuel costs and the use of the new technologies described above, this system will pay off within two to three and a half years depending on the performance parameters and based on 6,000 operating hours per year. A number of shipping companies have verified this calculation and are showing increased interest in the product. This is reason enough for SAM to look to the future with confidence.



Shaft alternator panel front side

Combined Market Intelligence for the Future

MARKET DEVELOPMENT - Following a 2-day L-3 Communications corporate business development conference in Washington, DC, USA, the L-3 Marine & Power Systems group hosted its own group conference, gathering together more than 40 international business development and sales managers.

The L-3 M&PS team discussed current market trends and identified joint initiatives to ensure customers are able to benefit from an unrivaled breadth and depth of products and services in the international commercial, naval shipbuilding and offshore markets.

Participants from more than 11 countries met with a special focus on highly dynamic markets, such as Brazil, India, South East Asia, China and South Korea.



Business development team of M&PS



SAM Ballast Water Treatment System

ENVIRONMENT - The recently concluded cooperation agreement with Techcross, South Korea, gives SAM access to a modular, highly efficient and cost-effective ballast water treatment system.

Ballast water prevents the stability problems that occur due to an uneven distribution of load. Ballast water can account for between 10 and 50 percent of a ship's total tonnage. As a result, around 10 - 12 billion tons of sea water is exchanged among the world's oceans each year, causing microorganisms to be swapped between different ecosystems. To protect against the transfer of

harmful water organisms and pathogens as far as possible, ballast water must be exchanged before being fed into ships or treated in some other way in line with the relevant statutory regulations.

The new Electro-Clean System™ (ECS), which complies with the requirements of the IMO Convention, is based on electrolysis and is suitable for both new projects and retrofits. The parts of the ballast water that are harmful to health are treated and made safe in the ECS using hypochlorides generated during the electrolysis process.

New Vice President at L-3 Valmarine



*John Egil Gilje,
Vice President and
Director of Sales and
Marketing of
L-3 Valmarine*

PEOPLE - John Egil Gilje was appointed Vice President and Director of Sales and Marketing on April 1, 2011. John Egil Gilje reports directly to Finn Inge Langeland, Managing Director of L-3 Valmarine.

"I am very happy to welcome John Egil to our L-3 Valmarine team," said Mr. Langeland. "He has extensive experience in sales management and leadership, with a particular talent for implementing business strategy effectively."

With more than 18 years of international management experience, Mr. Gilje most recently served as the Director of Sales and Marketing at Bjørge Marine Automation where he had responsibility for the company's worldwide sales activities. He was also responsible for the development and operation of the company's business activities in China.



Process schematic (photo: Techcross)

Extended Presence in Brazil

PEOPLE - Continually committed to growth and development, L-3 Marine & Power Systems (L-3 M&PS) has recently extended its presence to serve its customers in the Brazilian Shipbuilding and Offshore market.

In April, Jonas Henrique Lobo joined the L-3 team as the Director of Business Development for L-3 Marine & Offshore



*Jonas Henrique Lobo, Director of
Business Development*

Brazil. Mr. Lobo will be heading all regional operations in Brazil and further developing our marketing presence in this exciting and emerging market. The new Brazilian office will be supported by L-3 Offshore UK, L-3 Dynamic Positioning & Control Systems, L-3 Valmarine and SAM Electronics, along with being teamed with local business partners to provide our customers with optimum response times combined with local expertise and production facilities.

SAM Electronics and its partner Dinavi have recently been awarded a number of new building contracts for automation, navigation and power distribution systems and are looking forward to growing the L-3 brand in Brazil.

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