

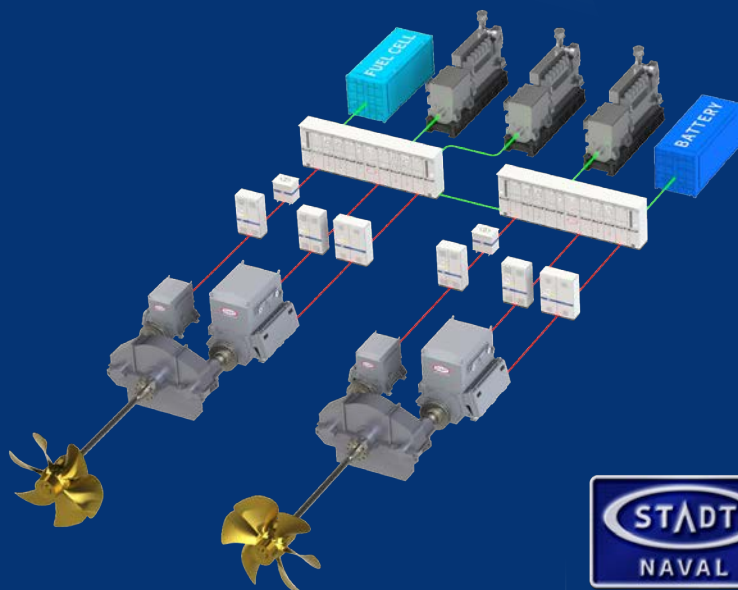


®

LEAN PROPULSION

STADT - LEAN PROPULSION[®]

SATISFIED CUSTOMERS



STADT LEAN PROPULSION®

Ship owners need *reliable vessels* that are efficient to operate year after year, in all seasons and weather conditions. Ships of the future call for electric power that enables them to operate safely and without interference anywhere on the planet.

STADT has taken these challenges seriously, when developing the STADT Lean Propulsion®, based on a completely different architecture – a truly revolutionary and disruptive design, also for the most powerful applications, more than 50 MW per propeller.

The lean propulsion system is amazingly *reliable*, and also reduces service costs, weight, fuel, emission, and waste, while freeing up space for cargo or passengers.

A sophisticated and silent system with stealth performance, extremely long lifetime, and excellent maneuverability.

”Our satisfied customers are the best references for STADT being a trusted partner”, says Hallvard Slettevoll, the CEO at STADT GROUP.

The group was started in 1985 and consist of the companies STADT AS, STADT NAVAL AS, STADT Eigedom AS, and In Motion AS.



Hallvard Slettevoll
Chairman and CEO
STADT GROUP

EXPERIENCING THE **STADT LEAN DRIVE**

From SAAB, Sweden

SAAB is a leading defence system industrial group out of Sweden, with a major portfolio of products and solution in to the naval sector. SAAB's portfolio includes own developed submarines, surface naval ships, the Gripen jet fighters, sensors, combat management, and weapon systems as some samples for the products.

Integration, stealth performance, and sustainability are the key elements for SAAB in their product developments.

STADT NAVAL is a selected supplier for SAAB, and the Lean Propulsion has been privileged for several new naval projects.



EXPERIENCING THE **STADT LEAN DRIVE**

From Echo Yachts, Perth, Australia

Echo Yachts are Australia's largest customised superyacht manufacturer.

"When we took the challenge to build the first ever diesel-electric superyacht in Australia, there were many design challenges to be solved. Such as low weight, small footprint, low noise, high efficiency, long endurance and reliability. We have found the STADT Lean Propulsion® extremely suitable for this yacht", says Mark Stothard, CEO at Echo Yachts.

The White Rabbit Golf is the largest trimaran and largest aluminium superyacht in the world at 84 meter long and 20 meter wide. Designed by Sam Sergiovanni and One2Three Naval Architects. The STADT Lean Propulsion® is 4200 kW diesel-electric.

DNV GL class.

ECHO
YACHTS



MY White Rabbit G.



Mark Stothard

Managing Director, Echo Yachts

EXPERIENCING THE **STADT LEAN DRIVE**

From PGS, Oslo

PGS operates a fleet of seismic research vessels, and is one of the largest companies in this market.

The vessels operate all over the world, very often in very remote locations where service facilities are not available. Reliability and efficiency is very important for both our own vessels as well as the support and escort vessels we use.

STADT Lean Propulsion® was chosen by one of our suppliers of support vessels in cooperation with PGS, and we are happy to see it has lived up to all our expectations.

Very few, if any undesired failures over 5 years in operation, tells us that this is the right choice for these vessels.

DNV GL class.



Einar Nielsen

VP Special Projects, PGS

EXPERIENCING THE **STADT LEAN DRIVE**

From Rawabi Vallianz, Saudi Arabia

Rawabi Vallianz is a world class integrated construction and support services provider to the offshore oil and gas industry, offering a wide range of offshore EPIC, marine support, subsea dive support, and engineering services.

Vallianz currently has the largest fleet of offshore construction and support vessels in shallow waters in the world - including the Rawabi 324 with STADT Lean Propulsion®.

This vessel has a big battery pack for peak shaving and no emission operation.

ABS class, DP2.



EXPERIENCING THE **STADT LEAN DRIVE**

From Nam Cheong Ltd, Singapore & Kuala Lumpur

Nam Cheong chose Lean Propulsion® for their series of 16 equal AHTS (Anchor Handling Towing Supply) newbuilt vessels, NCA80E design, 85T BP, DP2, ABS classified.

STADT designed and delivered the entire electric propulsion system, from Main Switchboards, Lean Drives and AC motors for main propulsion and thrusters, transformers, Power Management System etc., and was responsible for system integration.

They operate now all over the world, to the full satisfaction of Nam Cheong and their partners.

ABS class, DP2.



Kwan Seng Fatt

GM (Newbuilding), Nam Cheong Ltd

EXPERIENCING THE **STADT LEAN DRIVE**

From MS Sanco Spirit and MS Sanco Star- Seismic Research Vessels

MS Sanco Spirit and MS Sanco Star has been two very successful ships for Sanco and charters since they went into operation in 2008 - 2009. STADT Lean electric propulsion technology has proven itself to be extremely reliable over the years. The ships has not gone off-hire at any time, and the crew has maintained the system easily with a very limited need for support from STADT.

The robust and highly efficient drive technology has given the ships a minimal fuel consumption at all relevant operation point, including DP, and transit.

The system is remarkable in its compact design, and the Lean Propulsion® technology enabled the designers of the ship to avoid any liquid pipes for cooling or ventilation to be used in switchboard rooms where also the STADT Lean drives are located.



MS Sanco Spirit



Ronny Muren
Captain

EXPERIENCING THE **STADT LEAN DRIVE**

From SC Group, Thailand

The SC Group is one of Thailand's leading experts in integrated logistics and offers a wide range of services for various type of Offshore Support Vessels.

Over a decade of service with good vessels and experienced crews they have proven of customers satisfaction through many Quality and Safety achievements.

SC Bongkot and SC Winter with STADT Lean Propulsion® have now operated flawlessly since 2016.

ABS class, DP2.



SC Bongkot



EXPERIENCING THE **STADT LEAN DRIVE**

From Topaz - P&O Maritime Logistics, Dubai, UAE

Topaz - P&O Maritime Logistics is a leading provider of marine solutions with a focus on offshore energy, port services and cargo transport.

Operating worldwide, they own and operate approximately 400 vessels and provide a wide portfolio of value-added marine services.

Topaz - P&O Maritime Logistics have operated Topaz Master and Topaz Mariner with STADT Lean Propulsion® since 2017.

ABS class, DP2.



EXPERIENCING THE **STADT LEAN DRIVE**

E.A Temile and Sons Dev. Co. Ltd, Nigeria

E.A Temile and Sons Dev. Co. Ltd was incorporated in 1974 as a registered Engineering, Transportation and Instrumentation company.

Over the years, they have executed various jobs for the oil industry, Operating for Shell, NNPC, Texaco and other oil companies. The cardinal objective of the company is to provide high quality service execution to their clients and the society.

E.A Temile and Sons Dev. Co. Ltd have operated MV Warami with STADT Lean Propulsion® since 2016.

ABS class, DP2.



MV Warami



EXPERIENCING THE **STADT LEAN DRIVE**

From THOR Ltd

Thor Ltd is a shipping company located in Faroe Islands.

They operate a number of purpose built vessels. Such as the 4 seismic support vessels Thor Magni, Thor Modi, Thor Freyja, Thor Frigg.

Thor Ltd is an experienced shipping company that operates all over the world .

The managing Director of Thor, Hans Andrias Kelduberg is one of many satisfied STADT customers that has experienced the reliable and efficient Lean Propulsion® from STADT AS, as well as the excellent service given to them over the years.

DNV GL class, DP1.



THOR



Hans Andrias Kelduberg
Managing Director, Thor Ltd

EXPERIENCING THE **STADT LEAN DRIVE**

From MS SEIHAV - Well-Boat

Seistar Holding AS is a Norwegian shipping company involved in transportation of live salmon .

The company is located in Austevoll south of Bergen . The shareholders are Brødrene Bakke, and Lerøy Seafood Group.

Seistar Holding has today 4 ships in the fleet and are expanding these days with two new built.

Tore Bakke at Seistar express his gratitude to the electric Lean Propulsion® system from STADT that has been installed on their biggest ship so far, the Seihav.

It has 3000 kW of electric propulsion, and has operated very reliable since it went into operation in 2016.

DNV GL class.



MS Seihav



Tore Bakke

Captain & Co-owner

EXPERIENCING THE **STADT LEAN DRIVE**

From MS HARTO - Purse Seiner, Trawler

We installed the STADT diesel-electric propulsion in 2008 – now more than 10 years ago. It was a pioneer project, and many thought we were out of our mind - not using a main diesel engine.

Over the 10 years of fisheries in the northern Atlantic, we have seen that the STADT-technology has given us a very robust ship that operates very silent by all means.

Extremely low noise when we are searching for fish, operating with only one genset instead of all the 4 that are in place. It gives a better catch, and we have a very high comfort onboard. The unique noise-free STADT technology does not disturb our sensitive fishing sensors.

The built in redundancy has been a great advantage for us, from power generation through switchboard and electric propulsion motor drive arrangements.

We have so far never been out of service, and STADT has helped us in an excellent way the very few times something needed to be serviced.



MS Harto



Tor Hugo Bergtun
Ship Owner

EXPERIENCING THE **STADT LEAN DRIVE**

From ECONURI, Incheon Port Authority (IPA), South Korea

The Port of Incheon has been serving as the gateway to the Seoul metropolitan area, the industrial and economic center of the Republic of Korea and a logistics hub in Northeast Asia. Incheon Port Authority was established in 2005 to develop Incheon Port as a competitive logistics base and thereby contribute to the national economy.

Econuri is built by the Incheon Port Authority (IPA) and is attracting international attention for its energy efficiency and environmental friendliness. It was Asia's first LNG powered vessel, with STADT Lean Propulison®, was awarded as the "Green Technology of the Year" in 2012.

A cooperation agreement was made between STADT and SAMSUNG, based on the good results achieved during this project.



Econuri



EXPERIENCING THE **STADT LEAN DRIVE**

From FUGRO, Netherlands

Fugro is the world's leading Geo-data specialist, collecting and analysing comprehensive information about the Earth and the structures built upon it.

Company owns and operates M.V. Fugro Discovery. The vessel has permanently mobilised geophysical and hydrographical survey spreads, ready for rapid deployment to survey locations worldwide. It is the ship where first generation STADT electric propulsion was installed in 1996.



Fugro Discovery



EXPERIENCING THE **STADT LEAN DRIVE**

DNV GL confirmation from MS Sanco Spirit:

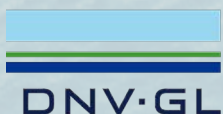
”The STADT Lean Drives are designed without transformers and filters, and is of air cooled execution.

The STADT Lean Drives do not generate any electric disturbance at all. This is due to its bypass operation performed by an Air Circuit Breaker in the drive.

Measurements obtained during sea trials proved that there was no electromagnetic noise transmitted from the STADT Lean Drives. The system delivers a pure sine voltage and current to the electric main propulsion motors. Thus unscreened, single core power cables could be used between drive and propulsion motors.

Due to the design of the STADT Lean Drives system, it does not disturb the voltage in the main switchboard. THD levels less than 3% was verified. Since the STADT Lean Drive system uses bypass operation, the electrical losses was minimized to the losses found in cabling and the ACB - which is negligible.”

DNV GL has approved 10 vessels so far with STADT Lean Propulsion®.



Oddvar Ulvestad

Principal Surveyor, DNV GL

OTHER IMPORTANT **STADT** CUSTOMERS

AMV AS



Atlas Copco



ConocoPhillips



Hurtigruten



Kongsberg



Saab Kockums



Samsung Heavy Industries



Teekay Shipping



Fugro



Remontowa Shipbuilding S.A.



Polish Navy



40 YEARS IN AC DRIVES

STADT GLOBAL NETWORK

STADT SERVICE POINTS:

STADT NORWAY, GJERDSVIKA

STADT ITALY, ROME

STADT SINGAPORE, SINGAPORE

STADT SPAIN, VIGO

STADT POLAND, GDYNIA

STADT TURKEY, TUZLA

STADT DENMARK, ESBJERG

STADT FINLAND & SWEDEN, MARIEHAMN

STADT BALTIC, KLAIPEDA

STADT UK, ABERDEEN

STADT MEDITERRANES, LIMASSOL

STADT NORTH AMERICA, MIAMI

STADT SOUTH AMERICA, RIO DE JANEIRO

STADT KOREA, BUSAN

STADT TAIWAN, KAOHSIUNG

STADT INDIA, MUMBAI

STADT AUSTRALIA, PERTH

STADT GERMANY, HAMBURG



STADT OFFICES:

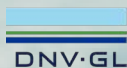
STADT NORWAY, GJERDSVIKA

STADT ITALY, ROME

STADT SINGAPORE, SINGAPORE



LEAN PROPULSION



STADT GROUP

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Made in Norway

