



“Hva gjør Kongsberg Maritime AS ”

Svein Holmøy, Area Sales Manager
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KM Simulation & Training



KONGSBERG

MUF 2008

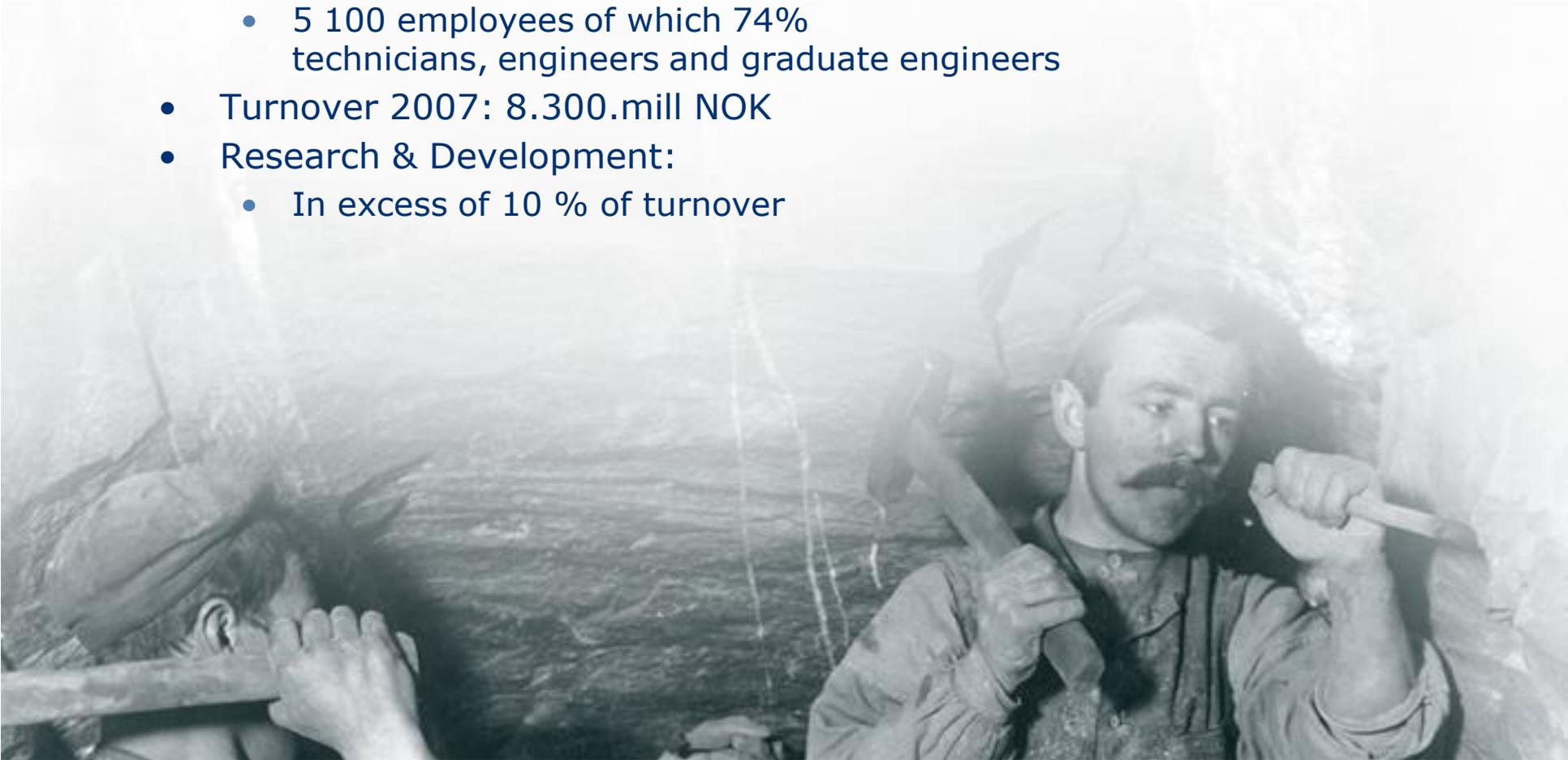
Oslo-Kiel 24. November 2008

Kongsberg Group



KONGSBERG

- Qualified staff:
 - 5 100 employees of which 74% technicians, engineers and graduate engineers
- Turnover 2007: 8.300.mill NOK
- Research & Development:
 - In excess of 10 % of turnover



Organisation



KONGSBERG

Kongsberg Group ASA

Kongsberg Maritime AS



Kongsberg Defence & Aerospace AS



Offshore & Merchant Marine

- Dynamic Positioning & Navigation
- Marine Automation
- Process Automation
- Hydroacoustics
- Satellite Positioning & AIS
- Simulation & Training

Oil & Gas

Subsea

BRIDGE OPERATION DNV REQUIREMENTS OCT,2007 – ICE Navigation



KONGSBERG

ICE Navigation (NEW!)

- Additional requirements for simulators intended for training in ice navigation



IBS/INS (NEW!)

- Additional requirements for simulators intended for training on Integrated Bridge Systems



Anchor Handling (NEW!)

- Additional requirements for simulators intended for training in Anchor Handling operations



Class Notations (NEW!)

- Possibilities for class notations

+1A1 TANKER FOR OIL ESP E0 WINTERIZED (-40°C) ICE-1C

E-farled - project



Untitled - ECDIS

DR 57°09.285'N 002°01.853'W NO OFS 037.8° CMG 15.7 kn SMG 1:3 000 000 VEC NOM SCL BET CHA Browse TGT VID ! Depth= m Board

Chart Route AIS/Radar OwnShip Note Tools System Options

Weather Alarm Zone Definition
 Wind Speed > 22.0kn
 OR
 Total Wave Height > 5.0m

Weather Along Route
 Route: Aberdeen-Stavanger
 Temperature Precipitation
 Pressure Dew Point
 Wind Vectors Ice Coverage
 Current Vectors Cloud Coverage
 Swell Waves Alarm Zones ...
 Total Waves

Waypoint List
 Route Name: Aberdeen-Stavanger Close Save Route not validated.

W	Name	Lat	Lon	Leg	Spd...	ETD/Wait	Radius	Offtra...	Max...	Message
1		57°08.727'N	002°05.291'W	RHL	14.0	071110 14.00	0.95NM	16m	0.0	
2		57°08.582'N	002°04.628'W	RHL	14.0	00.00	0.33NM	16m	0.0	
3		57°08.486'N	002°04.424'W	RHL	14.0	00.00	0.14NM	16m	0.0	
4		57°08.471'N	002°04.246'W	RHL	14.0	00.00	0.14NM	18m	0.0	
5		57°09.247'N	002°02.160'W	RHL	14.0	00.00	0.95NM	140m	0.0	
6		57°09.338'N	002°01.886'W	RHL	14.0	00.00	0.95NM	14m	0.0	
7		58°57.284'N	005°20.671'E	RHL	14.0	00.00	0.25NM	300m	0.0	
8		58°59.558'N	005°26.602'E	RHL	14.0	00.00	0.25NM	400m	0.0	
9		59°00.497'N	005°29.086'E	RHL	14.0	00.00	0.25NM	400m	0.0	
10		59°01.719'N	005°32.322'E	RHL	14.0	00.00	0.25NM	110m	0.0	
11		59°02.196'N	005°32.654'E	RHL	14.0	00.00	0.25NM	100m	0.0	
12		59°02.687'N	005°32.994'E	RHL	14.0	00.00	0.25NM	130m	0.0	
13		59°03.825'N	005°34.636'E	RHL	14.0	00.00	0.25NM	130m	0.0	

Select All Mark Insert Delete Copy Paste Reverse Undo GoTo Validate Critical Points

Datum: WGS-84 Local Offset from WGS-84 E Layout: Entry Validation Full

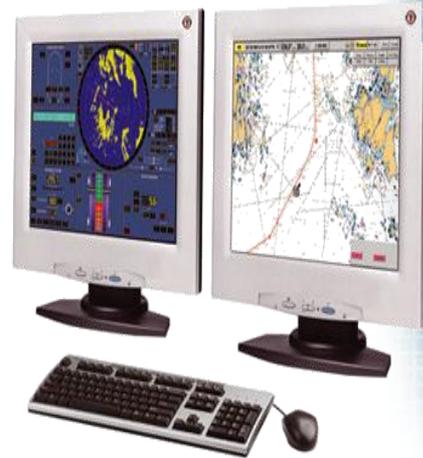
Nov 10 18:16

Sat 10.11.2007

Ship's Bridge Simulators



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Scaleable Product line:

- Web-enabled simulation
- Desktop simulator
- Full Mission simulators



Fast craft simulation



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Tug Simulator



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Polaris – Multiflex panel



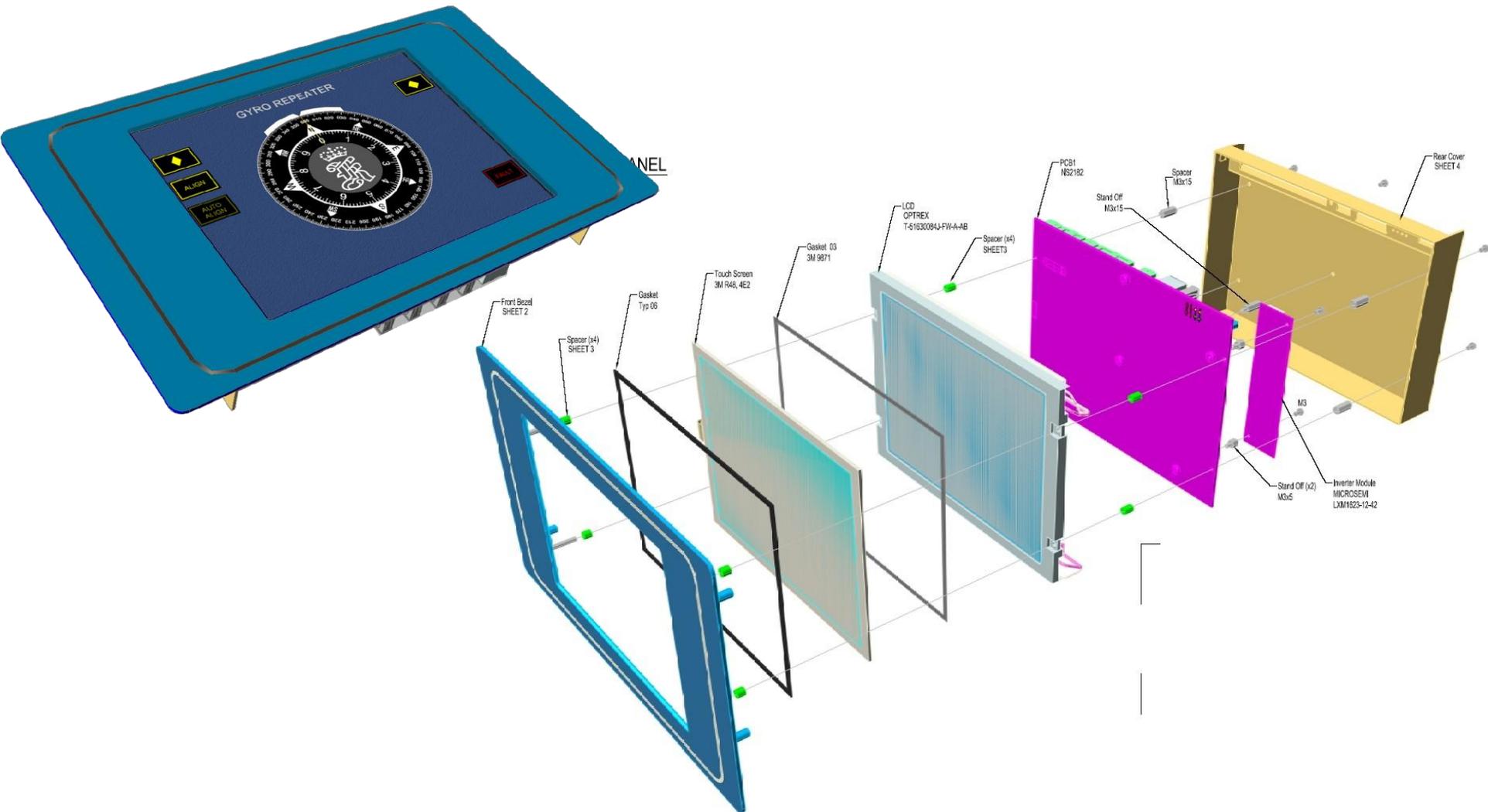
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Polaris – Multiflex panel



KONGBERG



New MultiTouch™ Console, Pielstick 10PC4



KONGSBERG



Flexible solutions:

-more simulation models can be run on same HW

New MultiTouch™ Console, MAN 5L90MC



KONGSBERG



Flexible solutions:

- more simulation models can be run on same HW

MultiTouch™ Main Engine Control Panel, 10PC4-M22



MAIN ENGINE CONTROL

ME 2 CONTROL

LOCAL ENGINE CONTR. ROOM BRIDGE

RESPONSIBILITY TRANSFER

FINISH WITH ENGINE ECR STAND BY AT SEA

ME 1 CONTROL

LOCAL ENGINE CONTR. ROOM BRIDGE

ME 2 FUEL LINK COMMAND

0 20 40 60 80 100 %

ME 2 SPEED

PITCH RED 100 200 300 400 500 600 rpm

DECR SETP: 400.00 INCR

ME 1 SPEED

PITCH RED 100 200 300 400 500 600 rpm

DECR SETP: 400.00 INCR

ME 1 FUEL LINK COMMAND

0 20 40 60 80 100 %

FULL HALF SLOW DEAD SLOW STOP DEAD SLOW SLOW HALF FULL

AHEAD

ASTERN

FULL HALF SLOW DEAD SLOW STOP DEAD SLOW SLOW HALF FULL

AHEAD

ASTERN

CONTROL MODE ME 2

COMBI SPLIT ECON SG

ME 2 READY

DISCON CON STOP START

SLOW DOWN SHUT DOWN SG SPEED

CONTROL MODE ME 1

COMBI SPLIT ECON SG

ME 1 READY

DISCON CON STOP START

SLOW DOWN SHUT DOWN SG SPEED

SAFETY SYSTEM ME 2

LO Press Gear LO Press FW Temp Gear LO Temp Over Speed Servo LO Press

SAFETY SYSTEM ME 1

LO Press Gear LO Press FW Temp Gear LO Temp Over Speed Servo LO Press

EMERGENCY

EMERG. STOP EMERG. RUN

EMERGENCY

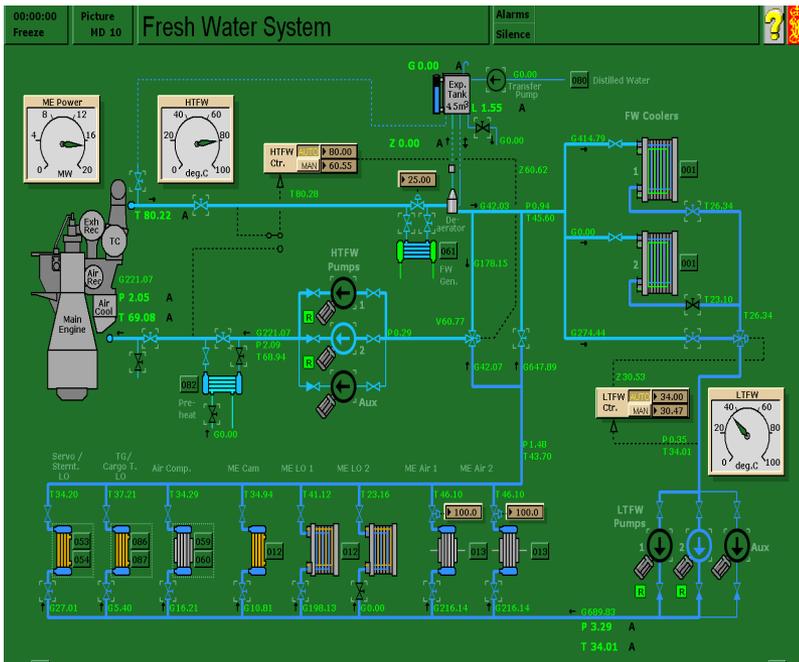
EMERG. STOP EMERG. RUN

Integration to our Real Systems: AutoChief®C20, K-Chief 500 and K-Chief 700



KONGSBERG

- Attractive training Packages to Ship Owners



Picture MD10 Fresh water System
from the Neptune engine room simulator



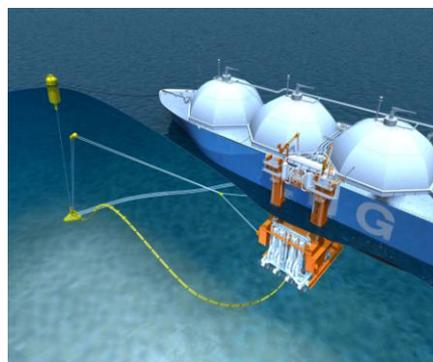
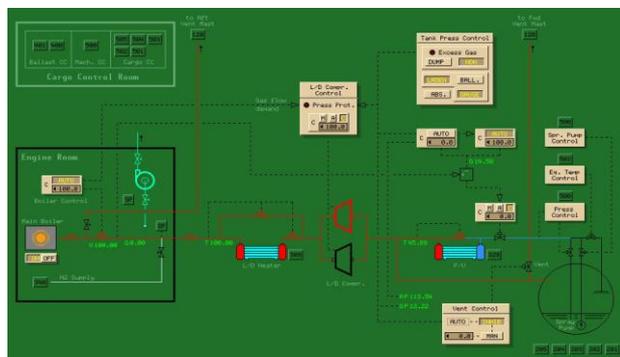
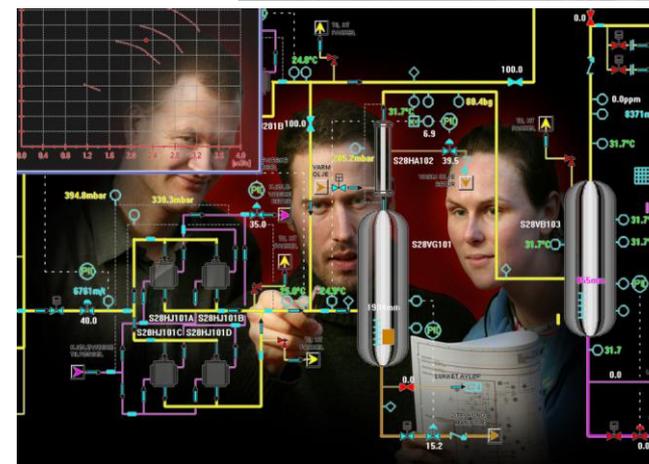
Picture Fresh water System
from the K- Chief 500.



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Simulation Solutions - LNG

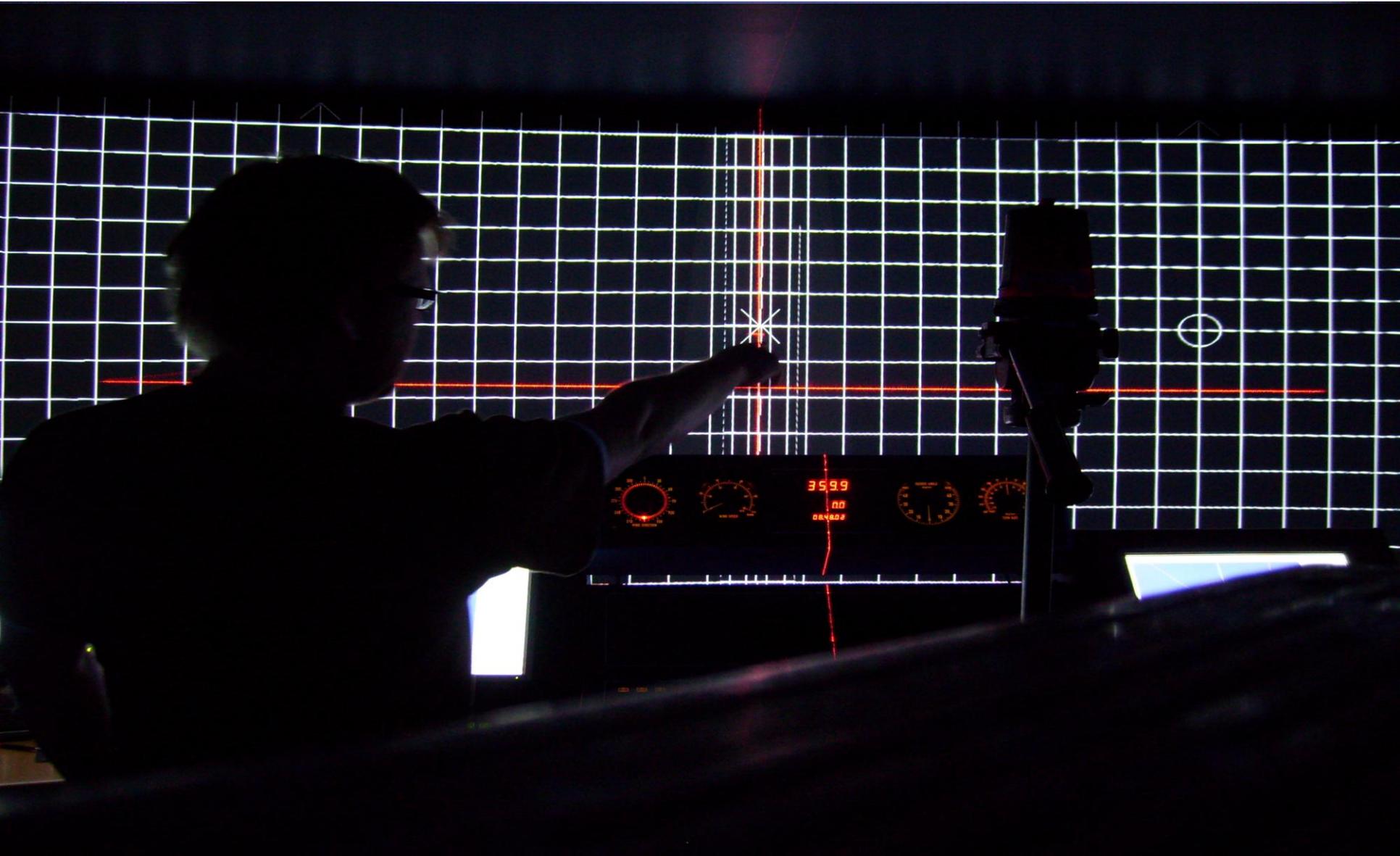
- Life-cycle simulators for:
 - Studies
 - Engineering
 - Training
 - Operation support
- LNG Spherical & Membrane Tanker full voyage; loading /offloading (IMO+DNV)
- Interface to Kongsberg AIM control system
- ERS Dual Fuel interface to LNG membrane
- Customized process simulators integrated with AIM:
 - LNG Reliquification
 - LNG Gasification
 - Dual fuel



Visual configuration



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New visual effects



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- Reflection
- New sky model and cloud layer
- New Sea Grid model







Kongsberg Anchor Handling Simulator



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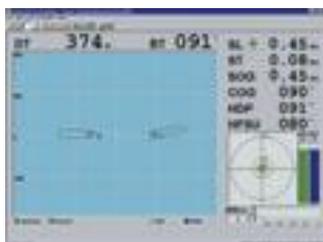


Special DP Case: HiLoad DP

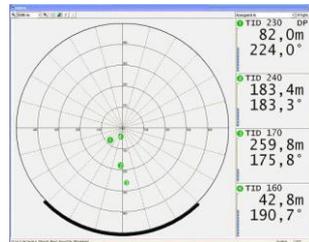
Visual DP Simulator Testing and Training Facility



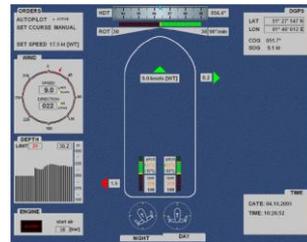
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DARPS



RADIUS



CONNING

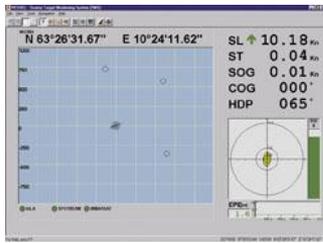
LASER



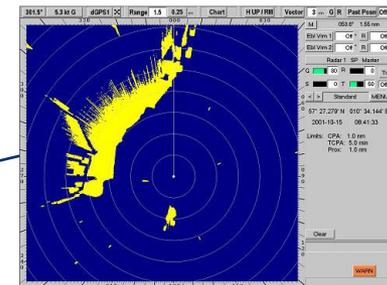
CCTV1



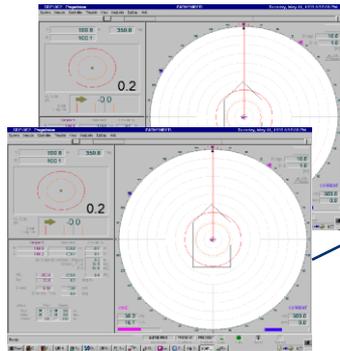
CCTV2



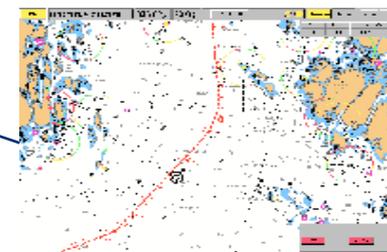
DPS



RADAR



DPS K-POS



ECTIS

Dynamic Positioning Trainers & Simulators



KONGSBERG

- Basic Trainer
- Advanced Trainer
- Bridge Ship Maneuvering Simulator



Anchor Handling Simulator (AHS) Requirements

- Fulfils the requirements "DNV Class A" AHS simulator according to DNV Cert. note. No. 2.14 of October 2007
- Requirements from the customer; Maersk Training Centre
- Experience from 8 years use of KONGSBERG AHS simulator



 **MAERSK TRAINING CENTRE**





Anchor Handling Simulator (AHS) Requirements

- Handling of different anchor types
- Integrated with KONGSBERG Dynamic Positioning
- Visual modulation of AHS operations
- FWD and AFT bridge configuration
- Assisting vessel operations
- Towing operations
- Winch and Crane operations



Anchor Handling Bridge Simulator Layout



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Crane Simulators



KONGSBERG

KONGSBERG acquires GlobalSim Inc. of the US - Kongsberg Maritime

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KONGSBERG acquires GlobalSim Inc. of the US

27. February 2008

Kongsberg Maritime has signed a contract for the acquisition of the simulator company GlobalSim Inc. of the US for approximately MNOK 100, on a debt-free basis. The acquisition will reinforce Kongsberg Maritime's operations related to training simulators for maritime and offshore applications, both of which are markets in continuous growth.

GlobalSim Inc. has comprehensive simulation experience in the field of simulation. The company's main products are crane simulators to train crane operators and optimise crane operations. Located in Salt Lake City, Utah, GlobalSim, Inc. has 25 employees. Its most important customers include many of the world's major harbours and the US Armed Forces.



GlobalSim crane simulator.



8.2008



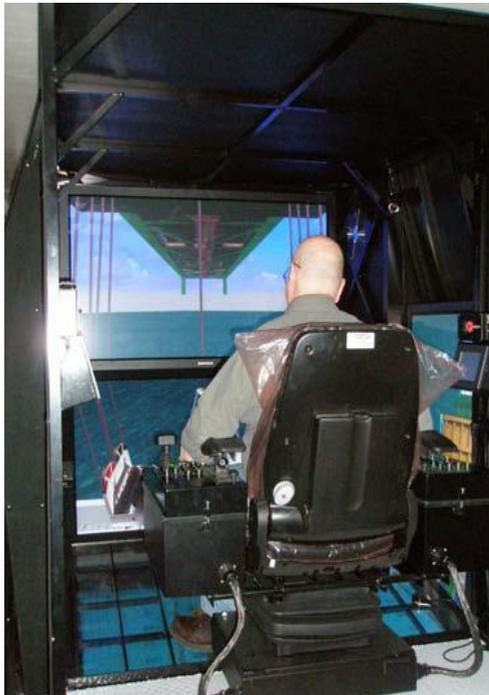


KONGSBERG

Crane Simulators

- Offshore crane operations
- Ship crane operations
- Port crane operations

Master Lift™ Training System supplied in cooperation with GlobalSim, Inc.

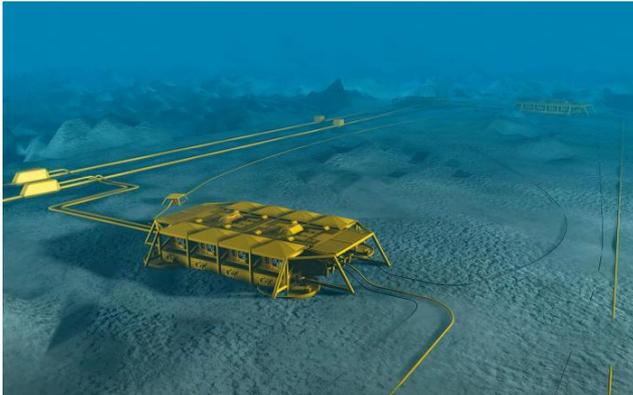
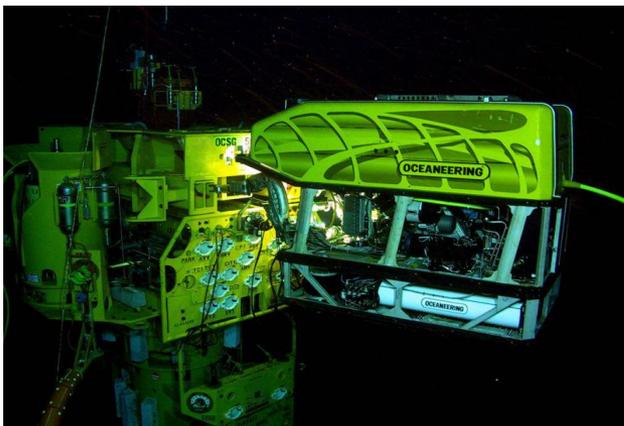




Advanced Subsea Operations

Simultaneous training of subsea intervention operations:

- Master and DP Operator (DPO)
- Crane operator
- Winch operator
- ROV operator





Some of the ongoing deliveries - Simulation

- MAAP, Phillipines
- Australian Maritime College, Tasmania
- Gijon , Spain
- Åland, ERS upgrade
- Skjold, Håkonsvern
- Redningselskapet, Stavern
- Amet, Inda



Andre tiltak fra Kongsberg Maritime:



KONGSBERG

- "Sommer Sim" for norske kunder– Ref. Sandefjord Juni 2007 – årlig foreteelse?

- Årlig Users Conferences (Portugal Sept. 2009)

(>70% meldte tilbake at de fikk nye ideer mht. "business oportunity" mht. begge arrangementer.)

- Kurs (Technical, Users, Train the Trainer)

Takk for oppmerksomheten!



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